SKUAST-J

Annual Report

2008-09

SHER-E-KASHMIR
UNIVERSITY OF AGRICULTURAL
SCIENCES AND TECHNOLOGY OF JAMMU (J&K)

ANNUAL REPORT

2008-09

SHER-E-KASHMIR
UNIVERSITY OF AGRICULTURAL
SCIENCES AND TECHNOLOGY OF JAMMU

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SKUAST-J: AN INTRODUCTION 1

Realizing the importance of agriculture in poverty alleviations and its indispensable role in economic growth of the state coupled with diversified geoclimatic conditions of Jammu and Kashmir State having distinct macro and micro climatic zones in the Division of Jammu, the Sher-e-Kashmir University of Agricultural Sciences and Technology, Jammu was carved out of erstwhile SKUAST of J&K State on September 20, 1999 to cater to the needs of Jammu Division for the development of region specific human resource, agriculture, agriculture technology and the eventual transfer there of.

Agriculture in J&K is a subsistence sector with the State still not being able to meet its requirement of food grains and large quantities are still being procured from outside the State. However, agriculture needs to be looked at as a potential sector of economy which has the capacity to enrich the life of 70% of the State's population which derives its livelihood directly or indirectly from this sector. Besides, agriculture has vital supply and demand linkages with the manufacturing sector. The state has cultivable and net sown area of 815 and 741 thousands hectares respectively. Approximately 70 per cent of the net sown area is under food crops and 13 per cent under fruit crops.

The state is endowed with varied agro-climatic conditions, for growing various field crops, fruits, vegetables and flowers including high value commodities like saffron, kala zeera basmati rice and rajmash. The state is often called the Fruit Bowl of India due to its rich and bountiful harvests of fresh and dry fruits. Presently about 6 lakh families derive their livelihood from this sector with an annual turnover of over Rs. 1900 crore. Although, the acreage and production under orchards have increased continuously for the last five years, the monetary gains from its marketing to outside the state as well as foreign exchange have declined drastically probably due to locational disadvantage, poor connectivity, quality of produce and competition from neighboring states.

Livestock is another important sector in J&K state which contributes about 13 per cent of GDP. As such, mixed farming systems incorporating dairy animals and poultry can be better utilized for generating additional income. The market for milk, meat and eggs is readily available.

The performance of agriculture determines the pace of growth and development of economy as it has a multiplier effect on the economy as a whole. It is the state of agricultural development which determines the status of a state as a Production State or a Consumption State. The contribution of agriculture and allied activities in the Gross State Domestic Product at constant prices is about 27%. The total food production during 2006-07 was 15.78 lakh metric tons. The productivity of major cereal crops, pulses and oilseeds is much below the national average which is of prime concern and needs to be addressed on priority (Annexure II). State faces massive deficit in

food grains (40%), oilseeds (70%) and vegetables (30%). Despite concerted efforts for amelioration of this sector, the state could not achieve the goal of self sufficiency and had to procure about 7.0 lakh tons of food grains in order to meet domestic demand.

The University has three faculties *viz*. Faculty of Agriculture, Faculty of Veterinary Sciences & Animal Husbandry and Faculty of Post Graduate Studies and has different Research Stations/Sub-Stations/Centers spread over the entire Jammu province. These stations are actively engaged in research activities in the areas of agriculture, horticulture, livestock, dairy, fisheries and home science. Six Krishi Vigyan Kendras spread over the different parts of the Jammu region comprising of ten districts viz. Doda, Poonch, Rajouri, Jammu, Kathua, Reasi, Kishtwar, Samba, Udhampur and Ramban are engaged in transfer of technology, training *etc*. The total area of Jammu division is about 1800 thousand hectares and only 22 per cent of this area is available for agriculture contributing about 70 per cent of total crop production in the State. The major crops produced are rice, wheat and maize. Since 75 per cent of the cultivated area is under rainfed agriculture, emphasis is laid upon the cultivation of less water requiring crop/tree varieties including oilseeds, pulses, sub-tropical fruits such as guava, ber, aonla, pomegranate, lemons, *etc*.

1.1 MANDATE

- Imparting education in Agriculture and other allied branches of learning and scholarship.
- Advancement of learning and prosuation of research in Agriculture, Animal Husbandry and other allied discipline.
- Undertaking the extension education of such sciences for the benefit of the rural people of the State, and such other purpose as the university may determine from time to time.

1.2 UNIVERSITY AUTHORITIES

University Council

The University Council is the apex advisory body of the University. It reviews policies and programmes of the University and advises in its future plans, development & expansion as well as examines the annual accounts and audit report of the University.

Board of Management

The Board of Management is the principal executive body of the University. It has the power of management and administration of all the affairs of the University, including finance, revenue, property and academic affairs.

Academic Council

The Academic Council is the principal academic body responsible for academic policies, rules and regulations of the University. All matters relating to academic programmes are regulated by the Academic Council.

Research Council

The Research Council is responsible in respect of research programmes and projects undertaken by various university units with a view to promote effective coordination in the field of Agriculture, Veterinary & Animal Husbandry and other allied sciences.

Extension Education Council

The Extension Education Council is responsible in respect of coordinating Extension Education activities for improvement of Agriculture and Animal Husbandry for development of rural communities. Development of farmers education and training and advisory services, identification and resolution of field problems in transmission of information and integration of extension education with teaching and research are other responsibilities of Extension Education Council.

Faculties

The Faculties comprise the Divisions of studies in various disciplines of Agriculture, Veterinary & Animal Husbandry and allied sciences. The faculties are basic academic units responsible for the formulation of academic programmes. The faculties review teaching work and suggest improvements. Each faculty has a Board of Studies. The Board of Studies proposes to the faculty concerned the course of study and curricula for various programmes of instructions offered by the faculty concerned. The University has the following faculties:

i) Faculty of Agriculture
ii) Faculty of Veterinary Sciences & Animal Husbandry
iii) Faculty of Postgraduate Studies

Planning Committee

The Planning Committee advises the Board of Management in matters relating to Planning and Development of the University. It is also responsible for programme planning, monitoring and implementation of major projects of the University.

Finance Committee

The Finance Committee advises the Board of Management on all matters concerning financial management of the University and examines the accounts and expenditure of the University.

1.3 UNIVERSITY ADMINISTRATION

The Vice-Chancellor is the chief executive of the University. He is supported by the Registrar in the administration, Comptroller in financial management, Project Planning & Monitoring Officer in planning of budget, Deans with respect to academic activities and Directors for management of research and extension activities in the field of Agriculture and Veterinary Sciences, besides, Librarian assists in library affairs, Students Welfare Officer in student activities and Estate Officer looks after civil works.

The organization set up of the university is presented in the organogram (1.4).

SKUAST of Jammu--Research/Extension Network

Administrative Block:
Main Campus, Chatha, Jammu

Faculties:

Agriculture: Chatha/Udheywalla
Veterinary Sciences & AH: RS Pura
Postgraduate Studies

Krishi Vigyan Kendras:
R.S.Pura (Jammu)
Bhaderwah (Doda)
Tandwal (Rajouri)
Reasi (Udhampur)
Poonch (Poonch)
Kathua (Kathua)

Research Stations/Sub Stations/Centre:

- Regional Agricultural Research Station, Rajouri
- Dry land Research Sub-station, Dhiansar
- Rain fed Research Sub-station for Sub-tropical Fruits, Raya
- Regional Horticulture Research Sub-station, Bhaderwah
- Pulses Research Sub-station, Samba
- Maize Breeding Research Sub-station, Poonch
- Water Management Research Centre, Chatha
- Cropping System Research, Chatha
- Seed Production Farm, Chakroi, RS Pura
- All India Coordinated Research Project on Maize, Udhampur
- Farmers' Friendly Participatory Vegetable Research Activity, Karllah (Chennani)

ORGANOGRAM

SHER-E-KASHMIR UNIVERSITY OF AGRICULTURAL SCIENCES AND TECHNOLOGY OF JAMMU

UNIVERSITY COUNCIL → **CHANCELLOR** ← **PRO CHANCELLOR**

BOARD OF MANAGEMENT → **VICE CHANCELLOR** ← ACADEMIC COUNCIL, RESEARCH COUNCIL, EXTENSION COUNCIL

VICE CHANCELLOR → Secretary to VC; PRO to VC

VICE CHANCELLOR → DIRECTOR RESEARCH; DIRECTOR RI-CUM-DPGs; DIRECTOR EXTENSION EDUCATION; DEAN OF FACULTIES; LIBRARIAN; REGISTRAR; COMPTROLLER; PP & MO; ESTATE OFFICER

- DIRECTOR RESEARCH → Assoc. Direc. Research; Dy. Direc. Research; Asstt. Direc. Research
- DIRECTOR RI-CUM-DPGs → Dy. Direc. Student Welfare; Medical Officer; Asstt. Reg. (A)
- DIRECTOR EXTENSION EDUCATION → Assoc. Direc. (Ext. Edu); Dy. Direc. (Ext. Edu)
- DEAN OF FACULTIES → Assoc. Dean of Faculty; Asstt. Reg. (A)
- LIBRARIAN → Asstt. Librarian
- REGISTRAR → Dy. Reg. (Acad.); Asstt. Reg. (Acad.); Dy. Reg. (Estt.); Asstt. Reg. (Estt.)
- COMPTROLLER → Dy. Compt.; Asstt. Compt.
- PP & MO → Asstt. PP &MO; Asstt. Dir. Stat.
- ESTATE OFFICER → Asstt.Ex.Engg (Civil); Asstt.Ex.Engg (Electrical); Accounts Officer

Regional / Sub- Research Stations

1. Regional Agricultural Research Station, Rajouri
2. Maize Breeding Research Sub Station, Poonch
3. Regional Horticultural Research Sub Station, Bhaderwah
4. Rain fed Horticultural Research Sub Station, Raya
5. Dry land Research Sub Station, Dhiansar
6. Pulses Research Sub-Station, Samba
7. All India Co-ordinated Research Project on Maize (ICAR), Udhampur
8. Seed Production Farm, Chakroi
9. WMRC, Chatha
10. CSR, Chatha
11. FFPVRA, Chennani

Krishi Vigyan Kendras

1. K V K, Jammu
2. K V K, Doda
3. K V K, Rajouri
4. K V K, Udhampur
5. KVK, Poonch
6. KVK, Kathua

Faculty of Agriculture, Chatha/Udheywalla

1. Division of Agronomy
2. Division of Agricultural Economics and Statistics
3. Division of Agriculture Extension Education
4. Division of Agricultural Engineering
5. Division of Agro forestry
6. Division of Biochemistry and Plant Physiology
7. Division of Entomology
8. Division of Vegetable Science and Floriculture
9. Division of Genetics and Plant Breeding
10. Division of Plant Pathology
11. Division of Fruit Science and Post harvest technology
    a) Fruit Science Section
    b) Post Harvest Technology Section
12. Division of Sericulture
13. Division of Soil Sciences and Agriculture Chemistry

Faculty of Veterinary Sciences and Animal Husbandry, R.S. Pura

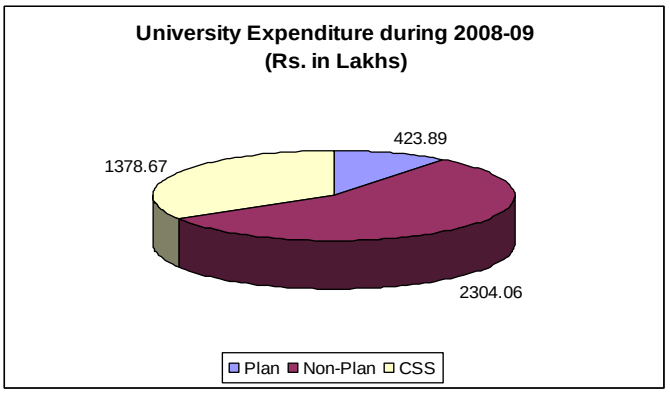
1. Division of Veterinary Public Health and Hygiene
2. Division of Veterinary Pathology
3. Division of Parasitology
4. Division of Pharmacology and Toxicology
5. Division of Veterinary Biochemistry
6. Division of Veterinary Physiology
7. Division of Anatomy and Histology
8. Division of Livestock Products Technology
9. Division of Veterinary Clinic and Teaching Hospital
10. Division of Veterinary and Animal Husbandry Extension
11. Division of Livestock Production and Management
12. Division of Animal Reproduction, Gynecology and Obstetrics
13. Division of Veterinary Surgery and Radiology
14. Division of Veterinary Clinical Medicine and Jurisprudence
15. Division of Veterinary Epidemiology and Preventive Medicine
16. Division of Animal Genetics and Breeding
17. Division of Animal Nutrition
18. Division of Veterinary Microbiology and Immunology

EXECUTIVE SUMMARY 2

The University during 2008-09 under the stewardship of Dr. B. Mishra, the present Hon'ble Vice-Chancellor who took over the reigns of this institute w.e.f November 14, 2008 continued its strive to achieve the goals for the development of competent and professional human resource, solving of farmers' problems through innovative research and transfer of technology in the fields of Agriculture and Veterinary Sciences. Even in spite of the various constraints, the university successfully completed the academic programmes including B. Sc. (Ag), B.V.Sc. & A.H., M. Sc. (Ag), M.V.Sc. and Ph.D; carried out assigned research agenda as approved by the Research Council involving almost entire faculty working at both the campuses and at various research stations of the university and undertook numerous initiatives for the transfer of technology to the farmers. The brief summary is given as under:

- The second convocation of the university was held on 26th May, 2008. The convocation function was presided over by Her Excellency Smt. Pratibha Devi Singh Patil, the President of India. The convocation was also attended by His Excellency, Lt. Gen.(Retd.) Sh. S.K. Sinha, PVSM, then Governor of Jammu & Kashmir State and Chancellor of SKUAST-Jammu, Jenab Ghulam Nabi Azad, then Hon'ble Chief Minister, J&K State and Pro Chancellor, SKUAST-Jammu, Abdul Aziz Zargar, then Hon'ble Minister of Agriculture and Cooperative, J&K State, Dr. Montek Singh Ahluwalia, Dy. Chairman Planning Commission, Govt. of India and Dr. A.L. Chaudhary, President Vety. Council of India and many other dignitaries. As many as 258 students were awarded the degrees which includes 178 undergraduate, 55 post-graduates and 25 Ph.D Scholars.

- The University has total sanctioned strength of 342 faculty positions with 230, 68 and 44 in Teaching, Research and Extension Education, respectively. Under teaching, the University has 33 Professors, 87 Associate Professors and 107 Assistant Professor level positions besides 2 Deans and 2 Associate Deans. Out of 230, 120 are in faculty of Veterinary Sciences and Animal Husbandry and 110 are in Agriculture. The academic and the gender wise spectrum of the faculty reveal that two-third of the faculty holds Doctoral degrees and the female strength in the faculty is just about 15 per cent.



- The university operated the total budget of Rs 4106.62 lakhs during the year 2008-09.

- The admissions to the Bachelors Degree programmes were undertaken through Board of Professional Entrance Examinations of Jammu and Kashmir Government whereas for Master's and Doctoral degree programme, the university itself selected the candidates on the basis of merit. As many as 116 and 119 students were admitted to UG and PG programmes, respectively. The number of students who completed their M.Sc (Ag), M.V.Sc. and Ph.D. degrees were 17, 15 & 10, respectively. The total number of students on roll remained 657 out of which 409 were in Veterinary Sciences and 248 in Agriculture. The number of female students was about 26 per cent. The University introduced Masters degree programme in two more subjects in Veterinary stream.

- The students of the university continued to participate in local/state/national level events. The university extended all facilities to the students including medical health care through a university dispensary equipped with full time medical officers (male & female) and supporting staff with liberal contingency for medicines. **3059** OPDs were attended and **67.30** per cent were the students.

- SJR 5 is a non Basmati culture identified as irrigated medium, early duration entry tested under AVT 2 IM of AICRIP during *Kharif* 2008. The entry has a significantly superior yield (63.8 q/ha) over national check Jaya. The entry ranked 4th in All India testing of *Kharif* 2007 with an average yield of 53 q/ha outperforming Jaya by 11.2 per cent.

- Basmati-370 rice performed better with irrigation at 7 days interval along with K_2O @ 20 kg/ha and registered highest grain yield of 28.4 q/ha among the other treatments.

- Establishment methods (SRI vs Conventional), irrigation levels and irrigation depths on rice (cv. PR 113) revealed that irrigation at every 8 days interval was statistically superior over other irrigation levels registering a maximum grain yield of 46.2 q/ha. Neither method of establishments, nor the depth of irrigation had any effect on rice yield.

- Among maize hybrids, Paras, KH 612 and KH 517 were found superior to the rest of varieties. These varieties showed 30.6, 29.4 and 28.2 per cent superiority respectively over the check (GS-2).

- The entry JHM-07-2 out yielded the best National check variety J-1006, BAIF-Maize-I and R-2006-10 were found superior over local check African Tall.

- Under dry land conditions maize intercropped with mungbean recorded highest maize equivalent yield (31.4 q/ha) followed by maize+cowpea intercropping system (29.2 q/ha). Among the mulching treatments highest grain yield was observed with mulching (30.5 q/ha) and the least was recorded in control treatment (25.9 q/ha).

- In potassium deficient soil, three irrigations each of 60 mm depth applied at CPE of 60 mm along with 45 kg K_2O/ha helped to achieve wheat grain (PBW-343) of 48.4 q/ha.

- RSP 561 is a high yielding, semi dwarf, irrigated- timely sown variety of bread wheat (T. aestvium), with a yield of 50 q/ha (2007-08) and resistant to brown and yellow rust. The

variety is being tested under AVT-IR-TS-TAS (2008-09) under All India Coordinated Wheat Improvement Programme.

- A maximum mean yield of 7.98 q/ha of Rajmash (VL-63) was obtained with irrigations at 15 days interval irrespective of irrigation depths.

- Six varieties of mungbean (ML 818, ML 668, Pusa 105, ML 131, ML 1165 and PDM 54) and four varieties of urdbean (UG 216, Uttara, Mash 338 and PU 19) were evaluated. Pusa 105, ML 131 and PDM 54 of mungbean and Uttara and PU19 of urdbean were found promising.

- Study on integrated nutrient management in knol-khol variety White Vienna revealed maximum yield of 167.8 q/ha in treatment combination of FYM + 100 % N + seedling dip with Azotobacter for 20 minute followed by treatment combination of FYM + 50 % N + seedling dip with *Azotobactor* (149.4 q/ha) and FYM + 75 % N + seedling dip with *Azotobactor* (145.2 q/ha).

- Seven tomato cultivars were evaluated for their performance under intermediate zone of this region for two years. Out of the tested cultivars, Swarn lalima (499.3 q/ha) followed by Swarn naveen (449.5 q/ha) recorded significantly highest yield as compared to check variety Pusa ruby (376.4 q/ha).

- Two year study on integrated management of chilli wilt revealed that seed treatment with Bavistin followed by seedling dip in 1 per cent Bavistin solution prior to transplanting at 30 cm high ridges and drenching with Mancozeb at appearance of symptoms resulted in lowest disease incidence and consequently highest yield.

- 11 germplasm lines were screened for yield performance. VL-8 ranked top with green pod yield of 350 q/ha followed by AP-1 which yielded 278 q/ha. AP-3 though low yielding but was ready for marketing 40 days earlier than VL-8 and AP-1.

- Super Lal entry of this location was tested under the code CCA-05-01 in All India Coordinated trials. It ranked second with yield of 239 q/ha. PC-34 recorded highest yield of 257 q/ha. Super Lal has been promoted to AVT-1.

- An INM study in radish indicated that bumper harvest of 629 q/ha was possible when half dose of recommended nitrogen with full dose of P and K was applied along with 5 tons of vermicompost as basal dose per hectare. The recommended NPK dose yielded only 462 q/ha.

- The treatment having vermicompost @ 4 t/ha + 50 % NPK recorded maximum curd weight (850 g) with curd diameter of 18 cm, thereby giving yield of 207.2 q/ha which was 7.9 per cent more than that of control (only NPK).

- Two high yielding varieties namely JBS-1 and JBS-2 were evaluated in station trial. They showed yield of 197 and 180 q/ha as against 124, 133, and 103 q/ha yield of check varieties Arka anamika, Versha uphaar and Pusa sawani, respectively. JBS 2 has been nominated for national testing in AICRP trials.

- Production technology was standardized like spacing, size of corm and cormels in gladiolus and growing media in lilium for propagation through scales, bulbs and tissue culture.

- Fifty five different varieties of gladiolus were evaluated on the basis of vegetative, flowering, corm and Cormel production parameters. The results depicted that White Prosperity was found statistically superior to all the above mentioned parameters and therefore all other varieties for cultivation under subtropical conditions suits best for Jammu region.

- In strawberry Cv. Chandler, the application of poultry manure or Subabul leaves @ 18 tones as well as FYM @ 72 tones/ha has been found to increase the yield from 199.3 g/plant to 412.1 g/plant.

- In guava, 50 per cent nitrogen requirement could be replaced with organic manure when used with urea augmented with *Azotobacter*.

- The scion wood of some cultivars of plum (Tarrol) and apricot (St. Ambroise, Rakovolik, Nugget, Vivagold and Harogen) were collected from NBPGR, Shimla and grafted/budded in the nursery in 2008 which have been multiplied and transplanted in the field during March, 2009.

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- Fourteen plants of four sweet cherry varieties (Stella, Mishri, Makhmali and Double) have been procured from SKUAST-Kashmir and planted at Gwari farm during March 2009.

- The technology was developed for preparing protein enriched peach leather and toffee by blending peach pulp with soybean slurry in various ratios (0-30) along with sugar and various ingredients. Blending ratio of 85:15 was found to be the best in terms of sensory attributes.

- The University is maintaining a herbal garden at FOA, Main Campus, Chatha. The herbal garden is being maintained for the purpose of education, demonstration and production of quality planting material (QPM). The planting material is being made available to farmers, state development departments and other entrepreneurs.

- Delimiting of mulberry variety for rainfed condition achieved after testing of 20 varieties. Varieties S-146 and S-799 identified for higher yields. For cocoon weight and shell weight, variety V_1 placed at number one spot.

- Application of 1% glyphosate on about 30 cm regenerated growth of lantana bushes and grubbing of lantana bushes followed by planting either of hybrid napier or setaria besides providing good soil cover and forage yield were found effective and significantly better than repeated lantana cutting treatment in reducing per cent lantana biomass with a magnitude ranging from 66 to 99 per cent. Herbicidal treatment was also found economically better with a net saving of Rs.5500/-ha over the grubbing treatment.

- In national trial on fodder cow pea, entries Bundel lobia-UPC-4200 and UPC-626 performed better than other entries. Application of 60 kg P/ha increased the green fodder

and dry matter yield significantly over 40 kg P/ha. Further increase in P level did not bring about any significant improvement in yield.

- Weekly Agromet Advisory Bulletin being issued based on weather forecast received from NCMRWF/IMD and being disseminated through various agencies like print, mass media, KVK's, NGO's for the benefit of farmers of the region. During the year 2008-09, 235 forecast was received based on these forecast 51 Crop weather bulletins were issued by this centre. The rainfall accuracy was found about 77 per cent with a ratio score of 52.8 per cent. The rainfall forecast saves 3 irrigations during *rabi* seasons and 4 in *kharif* seasons. The Agromet Advisory contents are also helpful to increase the crop yield using suitable crop management practices and to reduce the loss of yield by weather hazards.

- The conversion efficiency to produce dry matter from absorbed photosynthesis active radiation (PAR) was more in intercrop (maize + moong) as compared with sole maize and sole moong. Further, it gives higher maize equivalent yield than the sole crop.

- The balanced mineral mixture @ 50 g daily, ringers solution and 5 per cent dextrose (5 l approximately) immediately after laparo-enterotomy and then at 24 and 48 hours post operatively was found effective in managing the cows with intestinal obstruction.

- Tramadol (2 mg/kg) and nimesulide (4 mg/kg) are effective in controlling postoperative pain due to ovariohysterectomy in female dogs; and combination of tramadol (1 mg/kg) and nimesulide (2 mg/kg) was found superior to tramadol and nimesulide alone in controlling postoperative pain.

- The origin and course of coronary arteries of the *Bakarwali* goat were studied with the help of roentogenic method and dissection. It was observed that the left Coronary artery gives the major supply to the left auricle and left ventricle. It also contributes to the wall right ventricle of the heart. The right coronary artery was small and it gives major supply to right auricle and a very small part of left surface of right ventricle.

- The study on effect of dietary replacement of maize by broken rice on performance of broilers; revealed that the cost of broiler feed can be reduced by replacement of feed maize with broken rice up to 75 per cent level.

- Vanraja bird found suitable for semi-intensive system of rearing. The experimental results suggest that *Vanaraja* chicken can be reared economically under semi intensive system (up to eight weeks of age) than cage or deep litter system.

- *Cryptosporidium* is regarded as an important pathogen causing diarrhoea in calves. In total 288 faecal samples (144 cow calves, 144 buffalo calves) was examined using modified Ziehl-Neelssen method. Studies revealed higher prevalence in cow calves (21.5 %) as compared to buffalo calves (11.0 %) and also showed higher prevalence in organized farms (21.52%) as compared to unorganized farms (10.4 %).

- The transfer of technology has been carried out through Krishi Vigyan Kendras and the involvement of subject matter resources personals from the Faculty of Agriculture and Faculty of Veterinary Sciences and Animal Husbandry. A programme "Village Visit and Stay with Farmers" proved very effective. The scientists working at different research stations too participated in various extension activities.

- 4238 farmers/farm women and rural youth were imparted training through 205 different short courses. The trainings were organized in crop production, crop protection, horticulture, home sciences, soil and fertilizer management.

- The University organized as many as 40 professional trainings for the benefit of farmers and departmental functionaries 105 scientists participated in different seminars/symposia/workshops at state/national level.

- Among publications, the university brought out Journal of Research (Vol-7) and university research highlights (2004-2008). As many as 1134 publications including book chapters/bulletins/ manuals/ research papers *etc*. were published by the scientists in various journals of repute.

- The main library at Chatha with another equally strong unit at R. S. Pura was further strengthened by way of adding 805 number of books this year raising the library acquisition to 23672. As many as 99 Indian and 77 foreign Journals are subscribed. Library is also equipped with LAN and CD-ROM facility with free downloading provision.
- Library was made functional with LAN & CD-ROM servers within the library, Networking (LAN) at different campuses and Internet facility has been provided to faculty, students and staff members.

- Farm Health Card, a composite card for farmers having all the information related to their soil, crops, fertilizers, natural resource management, animal husbandry, pest management and use of fertilizers, marketing & credit facility has been adopted by the university initially in three villages.

- Among the various buildings inaugurated prominent ones are: Conference Hall at Main Campus, Chatha, and Seed Processing Centre.

- Among various Statutory Meetings, Board of Management, Academic Council, Research Council and Planning Meetings were held accordingly.

3rd University Council Meeting

12th Board of Management Meeting

FINANCIAL STATEMENT AND REVENUE RECEIPT (2008-09)

(Rs. in Lakhs)

S.No	Head of Account	Plan		Non-Plan		CSS	
		Budget	**Expenditure**	**Budget**	**Expenditure**	**Budget**	**Expenditure**
1	Revenue	--	--	2398.32	2304.06	1037.24	921.57
2	Capital	1600.00	423.89	--	--	505.16	457.10
	Total→	**1600.00**	**423.89**	**2398.32**	**2304.06**	**1542.40**	**1378.67**
	Total fund allotted:					**Rs.**	5540.72
	Expenditure incurred on Revenue & Capital components:					**Rs**	4106.62

STAFF POSITION (As on March 31, 2009)

S.No	Category	Sanctioned
	A. Teaching	
1	Dean	02
2	Associate Dean	02
3	Professor/Equivalent	33
4	Assoc. Professor/Equivalent	87
5	Asstt. Professor/Equivalent	218
	Total→	**342**
	B. Non-Teaching	
1	Administrative	235
2	Technical	56
3	Auxiliary/Supporting	479
	Total→	**770**
	Grand Total→ (A + B)	**1112**

FACULTY ACHIEVEMENTS 4

4.1 RESIDENT INSTRUCTIONS

Resident Instruction programme in Agriculture and other allied branches of learning and scholarship is an important and basic objective of the University. University has made remarkable achievements during the period under report in the field of agriculture education and try to maintain the standard as per with national level by following up-dated curriculum at under graduate (UG) and post graduate (PG) level both in agriculture and veterinary sciences as per the recommendations of Education Division of Indian Council of Agricultural Research (ICAR) and Veterinary Council of India (VCI), respectively. In Veterinary stream University has introduced Master Degree Programmes two more disciplines viz. Vety. & Animal Husbandry Extn. and Vety. Physiology.

ACADEMIC PROGRAMMES RUN BY THE UNIVERSITY:

UG Programme : B.Sc. (Ag) and B.V.Sc & AH
PG Programme : M.Sc. (Ag) and M.V.Sc.
Ph.D. (Ag) and Ph.D. (Vet)

Details of P.G.Programme:

S.No.	M.Sc.(Ag)	Ph.D.(Ag)	M.V.Sc.	Ph.D.(Vet)
1	Soil Science & Agriculture Chemistry	Soil Science & Agriculture Chemistry	Animal Breeding & Genetics	Animal Breeding & Genetics
2	Genetics & Plant Breeding	Genetics & Plant Breeding	Veterinary Animal Nutrition	Animal Nutrition
3	Entomology	Entomology	Animal Reproduction, Gynecology & Obstetrics	Animal Reproduction, Gynecology & Obstetrics
4	Agriculture Extension Education	Agriculture Extension Education	Clinical Veterinary Medicine including Ethics & Jurisprudence	Clinical Veterinary Medicine including Ethics & Jurisprudence
5	Vegetable Science	Vegetable Science	Veterinary Microbiology & Immunology	Veterinary Microbiology & Immunology
6	Agriculture Economics	Agriculture Economics	Veterinary Parasitology	Veterinary Parasitology
7	Agronomy	Agronomy	Veterinary Pharmacology & Toxicology	Veterinary Pharmacology & Toxicology
8	Fruit Science	Fruit Science	Veterinary Public Health & Hygiene	Veterinary Public Health & Hygiene
9	Post Harvest Technology	Post Harvest Technology	Veterinary Surgery & Radiology	Veterinary Surgery & Radiology
10	Plant Pathology	Plant Pathology	Livestock Product Technology	-
11	Statistics	-	Veterinary Biochemistry	-
12	Bio Chemistry	-	Livestock Production & Management	-
13	Forestry	-	Veterinary Epidemiology & Preventive Medicine	-
14	Sericulture	-	Veterinary Anatomy & Histology	-
15	-	-	Veterinary Pathology	-
16	-	-	Veterinary and Animal Husbandry Extension	-
17.	-	-	Veterinary Physiology	-

FACULTY SPECTRUM

The classified information pertaining to the faculty strength cadre wise and academic spectrum faculty wise are given under Table 1a. & 1b. As evident, there are 230 faculty positions as sanctioned strength for both the faculties' viz. Faculty of Agriculture and Faculty of Veterinary Sciences & AH.

Table 1 a. Faculty Strength

Post	**Sanctioned**
Dean	2
Associate Dean	2
Professor	31
Associate Professor	71
Assistant Professor	124
Total	**230**

2. STUDENT STRENGTH

The strength of students admitted to B.Sc.(Ag) programme was 55 only during academic session 2008-09 whereas for B.V.Sc&AH programme it was 61. The number of students admitted to M.Sc.(Ag) and Ph.D.(Ag) programme were 35 and 13, respectively in different divisions. In Veterinary faculty, 63 M.V.Sc and8 Ph.D. students were admitted during academic session 2008-09. The total strength of the students on roll at postgraduate degree programme were 225, whereas in UG programmes in agriculture and veterinary sciences & AH it was 126 and 306, respectively with total of 657 students. In first year class (UG & PG) the number of students remained the highest (235). The distribution of students' strength (intake capacity and admitted) year-wise and programme wise along with number of students on roll are given in Table 2.a, b, c.

Table 2 a. Intake capacity – faculty wise (2008-09)

Faculty	**Degree**	**Free Seats**				**Payment Seats**				**Total**
		Open merit	**Reserved category**	**ICAR/ VCI**	**Govt. nominee**	**NRI**	**All India basis**	**State domicile**	**Wards of serving Univ. employees**	
FOA	B.Sc. (Ag.)	14	14	8	04	06	04	06	02	58
FVSc. & AH	BVSc. & AH	14	14	8	04	06	04	06	02	58
	MSc. (Ag)	36	-	12	20	12	-	11	-	91
	MVSc.	50	-	15	15	16	-	16	-	112
	Ph.D (Ag)	26	-	-	-	-	-	-	-	26
	Ph.D (Vety.)	18	-	-	-	-	-	-	-	18
	Total	**158**	**28**	**43**	**43**	**40**	**08**	**39**	**04**	**363**

Table 2 b. Number of undergraduate and postgraduate students on roll (2008-09)

FACULTY							
Undergraduate			**Postgraduate**				
Year	**B.Sc. (Ag.)**	**BVSc. & AH**	**Agriculture**		**Vety. Sc. & AH**		**Total**
			M.Sc	**Ph.D**	**MVSc.**	**Ph.D**	
Ist	55	61	35	13	63	08	235
IInd	35	67	06	20	05	02	135
IIIrd	22	54	20	18	17	08	139
IVth	12	56	-	10	-	-	78
Vth	2	68	-	-	-	-	70
Total	**126**	**306**	**61**	**61**	**85**	**18**	**657**

Table 2 c. Genders wise details of Undergraduate and Postgraduate students (2008-09)

FACULTY							
Undergraduate			**Postgraduate**				
Year	**B.Sc. (Ag.)**	**BVSc. & AH**	**Agriculture**		**Vety. Sc. & AH**		**Total**
			M.Sc	**Ph.D**	**MVSc.**	Ph.D	
Male	80	235	43	42	68	16	484
Female	46	71	18	19	17	02	173
Total	**126**	**306**	**61**	**61**	**85**	**18**	**657**

Table 3. Completion of undergraduate and postgraduate degrees up to (2008-09)

Faculty	**Degree**	**No. of students**
Undergraduate	B.Sc. (Ag.)	147
	BVSc. & AH	219
Postgraduate	M.Sc. (Ag.)	193
	MVSc	20
	Ph.D (Ag.)	47
	Total	626

Among these students who qualified for the award of the degree, 43 were from Agriculture & 72 were from the Veterinary Sciences.

Table 4. Pass out students w.e.f 1.4.2008 to 31.03.2009

Degree	**No. of Student**
B.Sc. (Ag.)	16
BVSc. & AH	57
M.Sc. (Ag.)	17
MVSc	15
Ph.D (Ag.)	10
Total	115

3. THESIS SUBMISSION

Thesis submitted by Ph.D. students (2008-09)

S.No.	Name of the students	Regd.No.	Division	Title of thesis
1.	Munish Sharma	J-05-D-38	Plant Breeding & Genetics	Induced mutagenesis and in *vitro* cell selection for resistance against *Alternaria* blight in *Brassica napus* L
2.	Sandeep Kotwal	J-05-D-36	Entomology	Bioecology and management of honeybee (*Apis mellifera L*) mites with special reference to varroa destructor Anderson and Trueman
3.	Anil Kumar Sharma	J-04-D-23	Agronomy	Effect of planting dates, FYM and N-levels on the growth and forage yield of hybrid napier *(Penniscetum purpureum Schum.)*
4.	Satish Kumar Sudan	J-04-D-27	Plant Breeding & Genetics	Genetic analysis of seed yield and yield components in *Brassica napus* L
5.	Shyam Bir Singh	J-04-D-26	Plant Breeding & Genetics	Genetic analysis of morpho-physiological traits associated to drought tolerance in Maize (*Zea mays L*)
6	Sanjay Koushal	J-05-D-33	Agronomy	Studies on direct and residual effects of organic and inorganic sources of nutrients in Rice-Wheat cropping system
7	Ashwani Kumar	J-02-D-11	Pomology & Post Harvest Technology	Response of strawberry(*Fragaria x ananassa* Duch)cv.Chandler to organic and inorganic fertilizers under sub-tropical conditions
8	Neeraj Sharma	J-04-D-32	Soil Science	Boron Adsorption-Desorption characteristics and its availability in soils representing different Agro-climatic zones of Jammu

Thesis submitted by M.V.Sc. students (2008-09)

S.No	Name of thestudents	Regd. No.	Division	Title of thesis
1.	Arashdeep Singh	J-06-MV-14	Vety. Epidemiology & Preventive Medicine	Seroepidemiological investigation of some important infectious diseases of small ruminants in Jammu region.
2	Malik Imranul Zaman	J-06-MV-18	Animal Reproduction, Gynaecology & Obstetrics	Studies on Microbial, Physical parameters of Cervical Mucus and Biochemical profile of repeat breeding crossbred cattle
3	Zuhaib Fayaz Bhat	J-06-MV-33	Livestock Products Technology	Effect of Non-meat proteins on quality characteristics of Chicken Kabab
4	Syed Adil Altaf Bukhari	J-06-MV-34	Livestock Products Technology	Efficacy of different organic acids as coagulants on quality attributes and shelf life of Kaladhi
5	Irfan Akram Baba	J-06-MV-32	Livestock Production and Management	Effect of different rearing systems on the performance of improved indigenous breed of chicken
6	Sahil Pangotra	J-06-MV-24	Veterinary Microbiology and Immunology	Molecular characterization of group "A" Rotavirus in Bovine and Ovine Species in Jammu Region
7	Shabeer Ahmad Hamdani	J-06-MV-27	Veterinary and Animal Husbandry Extension	Adoption pattern of improved dairy farming practices in Jammu district
8	Shafkat Ahmad Khandi	J-06-MV-28	Veterinary and Animal Husbandry Extension	Perception of Gujjars towards Modern Animal Husbandry practices
9	Ajit Pal Singh	J-06-MV-19	Animal Nutrition	Effect of partial replacement of dietary protein by leaf meal mixture on the performance of kids
10	Kusum	J-06-MV-16	Veterinary Pharmacology & Toxicology	Studies on Experimental Molybdenosis and its Amelioration in Goats
11	Javid Farooq	J-06-MV-30	Animal Nutrition	Effect of Dietary Replacement of Maize by broken Rice on performance of broilers
12	Shahid Hussain Dar	J-06-MV-21	Veterinary Surgery & Radiology	Comparative anti-nonciceptive efficacy of Tramadol and Nimesulide alone and their combination in ovariohysterectomized dogs.
13	Mayur Varshey	J-06-MV-12	Veterinary Microbiology & Immunology	Molecular detection and characterization of *Pasteurella multocida* in animal and avian species in Jammu
14	Latima Sharma	J-06-MV-13	Veterinary Microbiology & Immunology	Molecular detection and characterization of Shiga toxin-producing *Escherichia coli* in Bovines.
15	Vinay Kant	J-06-MV-15	Veterinary Pharmacology and Toxicology	Experimental fluorosis in Goats with special reference to tToxicokinetics and its amelloration

Thesis submitted by M.Sc. (Ag) students(2008-09)

S. No.	Name of the students	Regd. No.	Division	Title of thesis
1	Seema Sharma	J-06-M-99	Soil Science & Agril.Chemistry	Quantity Intensity Relationships of Potassium in Orchard soils
2	Vikas Anand	J-06-M-97	Post Harvest Technology	Preparation and evaluation of peach-soy fruit products
3	Dar Farooq Ahmad	J-06-M-89	Agroforestry	Effect of sowing time and fertilization on growth and yield of *Silybum marianum* Gaertn
4	Sarbjit Singh	J-06-M-92	Plant Pathology	Studies on corm rot of gladiolus caused by *Fusarium* sp. and its integrated management
5	Vaishno Kant Gupta	J-06-M-95	Plant Pathology	Studies on incidence of root rot of Strawberry (*Fragaria x ananassa* dutch)
6	Arjun Singh Parihar	J-06-M-98	Post Harvest Technology	Preparation of ready-to-serve Dietetic Beverage and candy from Bitter Gourd
7	Vikas Padha	J-06-M-103	Plant Pathology	Investigation on spot Blotch of Wheat caused by *Bipolaris Sorokiniana(Sacc.*) Shoem
8	Rakesh Kumar Kotwal	J-06-M-94	Plant Pathology	Studies on citrus canker(*Xanthomonas axonopodis pv.citri*) and its integrated Management
9	Mahesh Kumar	J-06-M-86	Entomology	Biology and Management of Diamond back Moth. (*Plutella xylostella* L) on Cabbage (*Brassica oleracea var.capitata*)
10	Mukesh Kumar Sharma	J-06-M-85	Entomology	Succession of major insect pests of Citrus with special reference to the management of citrus caterpillar(*Papilio demoleus* L.)
11	Rakeshwar Singh Rana	J-06-M-90	Agroforestry	Effect of cutting size and hormonal application on growth and development of *Ficus roxburghii* wall
12	Anil Kumar Gorkha	J-06-M-108	Entomology	Impact of insect-pest management on pollinators affecting strawberry fruit production.
13	Salil Kumar Gupta	J-06-M-84	Entomology	Diapause behaviour and impact assessment of *Zygogramma bicolorata* Pallister on *Parthenium hysterophorus* L. in Jammu
14	Jasvinder Kour	J-06-M-87	Agril.Extension Education	Technological gap and constraints in adoption of mushroom cultivation practices
15	Sanjeev Kumar	J-06-M-91	Agroforestry	Survey and evaluation of different collections of Kalazeera (*Buanium persicum* (Boiss) Fedtsch.) in Jammu region.

4. STUDENTS FACILITIES

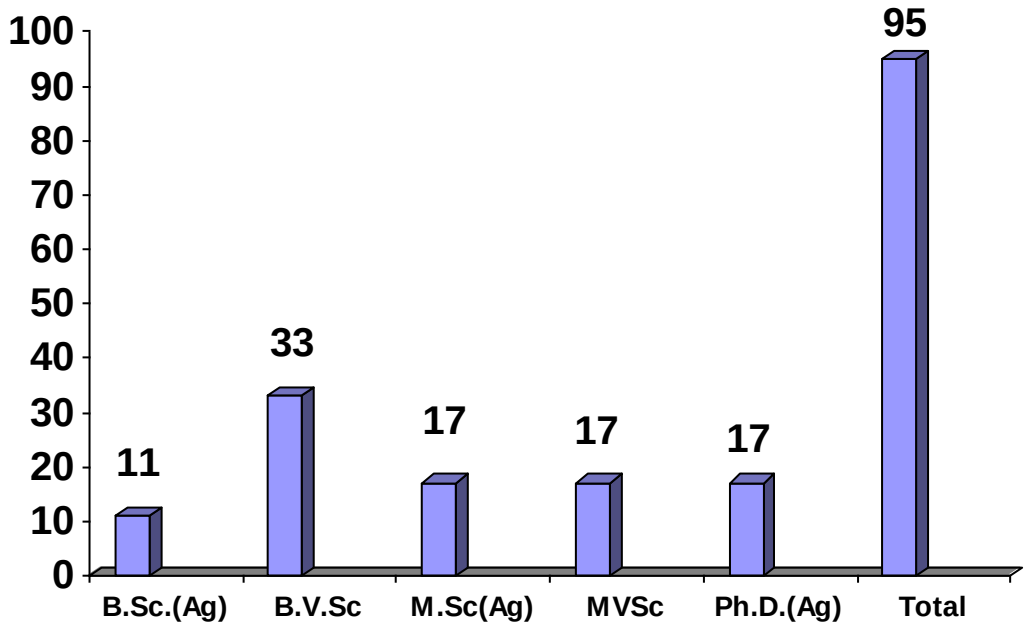
Various divisions of the university improved laboratory facilities to strengthen Post Graduate Teaching.

1. Post Harvest Technology	Water Bath, Muffle furnace, Distillation apparatus Citrus juice extractor
2. Division of Sol Sciences & Agril. Chemistry	CHNS Analyzer
3. Division of Plant Breeding & Genetics	PCR, BOD Incubator, Horizontal Electro-phoresis Unit, Top Loading Electronic Balance
4. Division of Agronomy	Deep Freezer, Mobile Exhibition Van, Aromatic Extractor Plant, Mobile self processor plant
5. Division of Agro-Forestry	Essential oil extraction unit i.e. "Clevenger"
6. Division of Bio-Chemistry & Plant Physiology	Kjeltec N analyzer freeze drier, Refrigerator Centrifuge, BOD incubator deep freezer (-20^0C)
7. Division of Olericulture & Floriculture	Spectophotometer (UV), Double door seed germinator, Double distillation apparatus
8. Division of Entomology	GLC, Lecia microscope
9. Division of Plant Pathology	Spore trap for assessment of plant pathogen propagules in the environment
10. Division of ARGO	Frozen Semen Laboratory, Phantom box laboratory for Obstetrical demonstration
11. Division of Veterinary Physiology	Installation of Automatic Blood Cell Counter
12. Division of Clinical Veterinary Medicine & Jurisprudence	Hot air oven, Autoclave, Laminar Flow, Digital Incubator, Electronic weighing balance, Binocular microscope, Student microscopes, Slide cabinets, Slide dispenser, Microbiological hood, Digital water bath, Distill Water assembly, micropipettes, PH. Meter, Flame photometer and AAS (Atomic absorption spectrophotometer)
13. Division of Livestock Products Technology	Chemicals and glassware
14. Division of Veterinary Anatomy and Histology	Chemicals and Glassware

5. SCHOLARSHIP

The under graduate and postgraduate students were awarded various scholarship for the year 2008-09. The value of merit scholarship awarded per month was Rs.500/-, Rs.800/- and Rs.1200/- to B.Sc. (Ag)/B.V.Sc., M.Sc.(Ag)/M.V.Sc. and Ph.D. students, respectively, where as the amount of National Talent Scholarship(ICAR) was Rs.1000/- per month.

NUMBER OF STUDENTS RECEIVED MERIT SCHOLARSHIP



6. EDUCATIONAL TOUR

3rd year B.Sc.(Ag), students i.e. Batch 2006 along with two faculty members were sent to All India Educational Tour w.e.f 15-01-09- to 05-02-09. Students were oriented to Country's Premier and Prestigious Institutions in the field of Agricultural Research and Education, which included IARI, New Delhi, CIFE Mumbai, ANGRAU, Hyderabad, UAS Banglore, UAS, Dhawarn and Agarkar Institute, Pune.

An All India Tour of 4th year B.V.Sc&AH, Batch 2005 students along with four faculty members was sent to Bombay Veterinary College, Veterinary College, IVRI, Izatnagar, TANUVAS, Snake and Crocodile Park, Hyderabad Veterinary College, National Institute of Animal Nutrition and Physiology, Banglore, Control Poultry Breeding Farm, CIRG, Makdhom , Veterinary College, Mathura & GBPUA&T, Pantnagar w.e.f. 14-02-09 to 08-03-09.

7. STUDENT HOSTEL

For providing accommodation facilities to Boys and Girls students there are three hostels viz. Boys Hostel, Students Hostel and Girls Hostel located at University Campus R.S.Pura. The boys hostel has 44 rooms for housing 138 students at a time with adequate furniture and fixture facility. The students hostel has a capacity to accommodate 143 boarders; 29 rooms are single seater, 49 rooms are double seater and have 16 single room suites for foreign students with facility of kitchenette and attached rest rooms. Spacious and well furnished dinning hall, common room, lawn, courtyard etc.have also been provided in the hostel. In view of increased number of Girls boarders' four residential apartments have been converted to Girls hostel.

8. MEDICAL FACILITIES/ HEALTH CENTRE

Clinical laboratory at Health Centre, SKUAST-Jammu, R.S.Pura campus stands equipped with latest automated computer based equipments for conducting the laboratory tests. A 100 MA portable X-ray machine has also been installed in the Health centre at R.S.Pura. The testing facilities are open to students, faculty members and staff of the University free of cost. Following table clearly depicts the number of cases handled by the health centre

Table 5: Number of casaes handled by Health Centre (2008-09)

S.No.	Type of case	No.
1	Total OPD cases	3059
2	Student treated	2058
3	Staff treated	1001
4	Hostlers	1464
5	Non-hostlers	594
6	Male	2320
7	Female	739
8	Surgical case	598
9	Medical case	2461
10	Patients referred to GMC	23
11	Emergencies attended	30
12	Indoor	31
13	Laboratory tests	90
14	X-ray	20

9. RURAL AGRICULTURAL WORK EXPERIENCE (RAWE)/INTERNSHIP PROGRAMME

RAWE: As a part of regular curriculum in the faculty of agriculture, final year B.Sc. (Ag) students were placed in rural areas for one semester under Rural Agricultural Work Experience (RAWE) programme. Each student attached to one host farmer for mutual learning. The Division of Agricultural Extension Education coordinates in this programme. Under this programme, students are exposed to practical field training for real life situation of the profession. During 2008-09, only 12 students have undergone RAWE programme. The village adopted under this programme was Rattian in tehsil R.S.Pura, Jammu.

INTERNSHIP PROGRAMME

Students of B.V.Sc&AH were exposed to internship programme for a period of 6 months in the 10th semester provided student has completed 9 regular semesters and securing minimum OPGA of 5.5 out of 10. For undergraduate this internship, an amount of Rs.1800/- per student per month is paid as internship allowance except in-service nominee from J&K Government. During 2008-09, 57 students have successfully completed their internship programme in B.V.Sc&AH. The expenditure involved for one student for six months is Rs.10800/- & total expenditure for 57 students was Rs.6,15,600/-.

10. EXTRA-CURRICULAR ACTIVITIES

1. **Functioning of Students centre at Chatha**
The Student welfare section including the health centre was made functional on 02-09 2008 in the new Students centre constructed at Chatha Campus. Facilities like recreation room, indoor games, T.V with cable connection etc. stand provided for the students. Health care facility including OPD/ Indoor, clinical laboratory is available in the centre.
2. 10th Establishment day of SKUAST-J was celebrated at Conference Hall Main Campus Chatha on 19th of September 2008.
a. Dr. C.S. Kalha, Associate Dean Faculty of Agriculture highlighted the historical back ground of Establishment of the university.
b. The occasion was marked by a cultural programme presented by a team of student's items performed included Bhangra, Solo dance and skit.
3. An Interactive session on 'Stress management' was organized with panel of experts from centre for Adult Continuing Education and extension, University of Jammu on 7th Nov.2008 in the main hall, Conference Complex, R.S.Pura for the students of Veterinary faculty.
4. Commemoration of birth Anniversary of Maulana Abdul Kalam Azad on11th Nov 2008 as National Education day
A rally of the UG students and PG scholars of FOA and FVSc&A.H was taken out on the occasion. An interactive Session on "Azad Legacy on Indian Education'' with panel university of Jammu on 11st November in the conference Hall, Chatha.

5. Annual Sports Meet of F.V.Sc&A.H, R.S.Pura.
The annual sports meet of F.V.Sc&A.H was organized by Student Welfare Section and Inaugurated by Dr. R.M Bhagat DRI-Cum-Dean-PGs at R.S.Pura Sports Ground on 20th

Nov.2008.The sports meet was held during 20th Nov. to 24th Nov.2008. In this meet the outdoor games like Cricket, Football, Volleyball and indoor games like Badminton, Table Tennis, Carrom and Chess were taken up.

6. Student counselling and placement cell started functioning in the student Centre in the month of Nov .2008 which provides time to time guidance to the students of the university on job/vacancies available for the graduate as well as post graduate students.

7. Annual Sports Meet of Faculty of Agriculture, Main Campus, Chatha
The annual Sports meet faculty of Agriculture was organized by Student Welfare section and Inaugurated by Dr. R.M Bhagat DRI-Cum-Dean-PGs at R.S.Pura Sports Ground from 4th Dec to7th Dec.2008.Inwhich games like Cricket, Football, Volleyball and other Indoor games like Badminton, Table Tennis, were taken up.

8. Seminar in Collaboration with Directorate of Environment and Remote Sensing, J&K Govt. organized on 20-03-09 on climate Change a worrisome scenario in which students of FOA & F.V.Sc&A.H participated. The winners were awarded prizes sponsored by the Directorate of Environment and remote sensing.

9. **Annual Inter University Youth Festival "Reverie"- 2008**. University students team participated in Annual Inter University Youth Festival "Reverie 2009" held at NDRI, Karnal from 17th to 19th March, 2009.

4.2 RESEARCH

The research is being carried out by the faculty placed under Faculty of Agriculture at Chatha & Udheywalla/Faculty of Veterinary Sciences and Animal Husbandry, R. S. Pura and by the scientists working at different research stations/sub-stations/centres, spread over the entire Jammu province of Jammu & Kashmir state in the areas of agriculture, horticulture, livestock, dairy, fisheries and home science. Post graduate research also forms an important component of research activity. The research is being funded through coordinated research projects and other schemes of Indian Council of Agriculture Research (ICAR), state plan and non plan and various other sponsoring agencies *viz*. HTMM, DBT, DST, MES, NMPB *etc*. The agro-climatic zone-wise research stations of the university and ICAR coordinated Research projects along with other schemes are enlisted below in Table 6.

Table 6. Scientific strength at different Research Stations/Sub-Stations/Schemes/ Faculties

S. No.	Research Units	Sanctioned
1	RARS, Rajouri	15
2	PRSS, Samba	03
3	DLRSS, Dhiansar	10
4	RHRSS, Bhaderwah	12
5	RRSSF, Raya	03
6	MBRSS, Poonch	04
7	AICRP on Maize, center-Udhampur	02
8	AICRP on Agromet, Chatha	02
9	WMRC, Chatha	05
10	Cropping System Research, Chatha	04
11	All India Coordinated wheat Improvement Project, Chatha	01
12	All India Coordinated Rice Improvement Project, Chatha	04
13	Seed Production Farm, Chakroi/Chatha (Directorate of Research)	02
14	Faculty of Agriculture, Chatha/Udheywalla	110
15	Faculty of Veterinary Sciences & A.H, R. S. Pura	*120*

The research outputs accrued from different research units are reported as under

AGRICULTURE

CEREALS

Paddy

- SJR 5 is a non Basmati culture identified as irrigated medium, early duration entry tested under AVT 2 IM of AICRIP during Kharif 2008. The entry has a significantly superior yield (63.8 q/ha) over national check Jaya. The entry ranked 4th in All India testing of *Kharif* 2007 with an average yield of 53 q/ha outperforming Jaya by 11.2 per cent.
- Out of five entries evaluated, entry HPR 2309 and VL 30916 out yielded the best check Vivekdhan-82 with grain yield of 50.9 and 50.2 q /ha and with yield advantage of 9.7 and 8.1 per cent over best check. In another AVT trial, six entries were evaluated, but none of the entries surpassed the best check RP 2421 in grain yield (51.0 q/ha).

Demonstration of SRI technique at village Mota (R.S.Pura)

- Establishment methods (SRI vs Conventional), irrigation levels and irrigation depths on rice (cv. PR 113) revealed that irrigation at every 8 days interval was statistically superior over other irrigation levels registering a maximum grain yield of 46.2 q/ha. Neither method of establishments, nor the depth of irrigation laid any effect on rice yield.
- Basmati-370 rice performed better with irrigation at 7 days interval along with K_2O @ 20 kg/ha and registered highest grain yield of 28.4 q/ha among the other treatments.
- By using Stochastic Frontier Production model, the average technical efficiency was 37 per cent in rice production in Jammu district of Jammu and Kashmir State and the study implied that the average output could be increased by 63 per cent by adopting technology properly.
- The resource use efficiency (by using Cobb-Douglas Production function model) of basmati rice showed that the land, seeds, machine and human labour were over utilized whereas plant protection, fertilizers and irrigation were under utilized.

Maize

- Varietal evaluation trial comprising 20 maize hybrids/composites both white and yellow coloured, was laid out at Sartingal farm during *Kharif* 2008. Among the white varieties the following entries/namely PB-205 (48.7 q/ha) PB-207 (52.3 q/ha), UD-103 (50.0 q/ha), UD-110(46.2 q/ha) performed well at Bhaderwah conditions and among the yellow varieties the following varieties namely UD-105 (44.7 q/ha) UD-106 (44.7 q/ha) UD-107 (43.6 q/ha) performed well.
- Among maize hybrids, Paras, KH 612 and KH 517 were found superior to the rest of varieties. These varieties showed 30.6, 29.4 and 28.2 per cent superiority respectively over the check (GS-2).
- The entry JHM-07-2 out yielded the best National check. Variety J-1006, BAIF-Maize-I and R-2006-10 were found superior over local check African Tall.
- Experimental trials have been conducted to recommend suitable high yielding maize hybrids PMH-1 & PMH-2 (yellow grain single cross hybrids of Ludhiana origin) for

release in plains including intermediate zone upto 900 mtrs ASL . these hybrids have recorded grain yields of more than 62 q/ha in the experimental trials conducted during kh . 2006, 2007 & Kh. 2008 under rainfed conditions. The rainfall in the consecutive three kharif seasons was normal.

- The cultivation of Quality protein maize (QPM) HPQM-1 (yellow grain single cross hybrid of Karnal origin) in this region performed satisfactorily under optimum moisture conditions in plains including intermediate zones up to 900 mtrs ASL.
- Studies performed on baby corn has indicated that VL-88, VL-41 (Almora) HM-4 (Karnal), PEMH-2 and Arawalli makha (Rajasthan) is appropriate for baby corn cultivation in this region .
- The hybrid varietal adoption in maize was found to be 84 per cent. Ninety five per cent used recommended quantity of seed by broadcast method. Only 24 per cent followed

seed treatment. Nearly, 17 per cent and 11 per cent farmers did not use DAP and Urea, respectively. However, FYM was applied as per availability. Termite, rats, stem borer and stalk rot were reported the major pests for which no chemical control was used. However, 10 per cent of the farmers used herbicides for weed control. The damage by wild pigs was reported by almost every farmer.

- Under dry land conditions maize intercropped with mungbean recorded highest maize equivalent yield (31.4 q/ha) followed by maize+cowpea intercropping system (29.2 q/ha). Among the mulching treatments highest grain yield was observed with mulching (30.5 q/ha) and the least was recorded in control treatment (25.9 q/ha).
- Maize + rajmash intercropping with alternate strips of red clover proved effective in increasing maize (KH-517) yield and retention of highest soil moisture at harvest with lowest soil erosion in comparison to farmer's practice. Intercropping on the hilly slopes proved better in respect of yield, soil moisture retention and decrease in soil loss in comparison to sole cropping.
- Agronomical trial on INM on rainfed maize & specialty corn "baby Corn" have been conducted that show higher doses of fertilizers gave more yield against recommended dose of fertilizers.
- Zonal Coordinated trial on SSNM (Site Specific Nutrient Management) carried out under rainfed conditions with variety PMH- 2 showed higher yield with increased nutrient doses (N-196, P-111, K-51& $ZnSO_4$ -25 Kg/ha) over state recommendation of nutrients (N-60, P-40, K-20 & $ZnSO_4$ 10Kg /ha)
- Polythene/straw mulch accompanied by minimum tillage was economically profitable and improved soil quality in maize-wheat rotation in rainfed areas of Jammu.

Nutrient Management trial in maize in kandi areas

Wheat

- Among fifteen wheat varieties evaluated, varieties HP 249, UP 2645 and VL 849 performed better over others with the yield advantage of 18.4, 16.7 and 13.2 per cent over high yielding check HS 240.

- In potassium deficient soil, three irrigations each of 60 mm depth applied at CPE of 60 mm along with 45 kg K_2O/ha helped to achieve wheat grain (PBW-343) of 48.4 q/ha.
- RSP 561 is a high yielding, semi dwarf, irrigated- timely sown variety of bread wheat (*T. aestvium*), with a yield of 50 q/ha (2007-08) and resistant to brown and yellow rust. The variety is being tested under AVT-IR-TS-TAS (2008-09) under All India Coordinated Wheat Improvement Programme.
- RSP 566 and JAUW 569: During IPPSN screening in 2007-08, two new entries of wheat were found resistant to rust and hence promoted for testing in NIVT-1A of All India Coordinated Wheat Improvement Programme during 2008-09.

Border-Strip irrigation in Wheat under FPARP project

- Biochemical and molecular characterization of SKUAST wheat lines was carried out for various parameters and showed total protein content differed significantly in the varieties. Phytic acid was significantly lowest in RSP-566 (0.31 g/100 g seed) but was at par with PBW-343. Iron content (mg/100g seed) was significantly higher in RSP-529 and RSP-529 while RSP-562 and RSP-564 showed significantly higher content of proline than the check varieties PBW-175 and PBW-343. Catalase activity was recorded significantly higher in RSP-529 and RPS-562 as compared to check varieties. Significant differences were observed in total sugar, reducing sugar, non-reducing sugar and starch content.
- Adoption of recommended variety was about 82 per cent. Recommended seed rate was followed by 74 per cent farmers. Majority, 90.8 per cent used broadcast method of sowing and over 94 per cent did not follow any seed treatment. Nearly three-fourth of the farmers adopted recommended doses of chemical fertilizer. However, potassic fertilizer was not used by any of the sampled farmer due to its non-availability. Below 5 per cent farmers used pesticides to control loose smut, rats, termites and weeds.

PULSES

Rajmash

- Rajmash germplasm was collected from 23 different locations of Doda Region (Bhaderwah, Dakshin, Marwah and Chattroo) during *Kharif* 2007 and sown in *Kharif* 2008 at Sartangal farm at Bhaderwah to get subsequent pure line seed of Rajmash. These seeds will be further evaluated for their performance during *Kharif* 2009. Twelve bush type varieties were also procured from NBPGR, Regional station, Phagli, Shimla and sown in *kharif* 2008 at Sartangal farm, Bhaderwah, but failed to show any promising results, hence will not be taken for further evaluation in 2009.


Rajmash under Alternate Crop Sequence in FPARP Project

- A maximum mean yield of 7.98 q/ha of Rajmash (VL-63) was obtained with irrigation at 15 days interval irrespective of irrigation depths.

Mungbean and Urdbean

- Six varieties of mungbean (ML 818, ML 668, Pusa 105, ML 131, ML 1165 and PDM 54) and four varieties of urdbean (UG 216, Uttara, Mash 338 and PU 19) were evaluated. Pusa 105, ML 131 and PDM 54 of mungbean and Uttara and PU19 of urdbean were found promising.
- Under coordinated trials on mungbean, promising entries identified are M8-217, KU08-514, KU08-511, KM08-123, KM08-126, KM08-165, and KM08-161.
- In case of urdbean, entries identified are M08-608 and KM08-640.

Chickpea

- Entry SCS-31 has been nominated for testing across zones under rainfed IVT trial for *Rabi* 2008-09. Around 30 FLDs in chickpea, 10 in lentil, 15 in urdbean and 10 in mungbean have been conducted during 2008-09.

Brassica

- The highest variation in RWC was in *B. Juncea* genotypes as compared to *B. napus* and maximum RWC was in *B. Carinata*. The highest RWC under moisture stress was observed in PC-


RSPR-69: A new variety of raya in pipeline

5 and RSPR-69 and lowest in RH-30 with similar results under normal irrigation. Lowest LWR under moisture stress has been observed in PC-5 and RSPR-69 while under normal irrigation the lowest LWR was observed in PC-5, DGS-1 and RSPN-25. RWC decreased with age from flowering to pod formation. There was reduction in total number of pods per plant, total number of seeds/pod, 100 seed wt. and seed yield/plant under drought stress compared to normal irrigation in all the three *Brassica* species. However the lowest relative reduction of 5.8 per cent in seed yield was observed in RSPR-69 followed by PC-5 (9.8 %) and DGS-1 (14.0 %).

VEGETABLES

Knolkhol

- Varietal evaluation trial conducted during *rabi* 2007-08 indicated the entry G-40 as top performing genotype with yield potential of 372 q/ha. The variety G 40 also ranked Ist at Pantnagar and Ludhiana in IET of All India Coordinated Project on Vegetables. 20 minikits of this entry has been given to Deptt of Agriculture, Jammu. G-40 is characterized by early maturity and is ready for marketing in 35-40 days after transplanting. Its nucleus seed is being produced by the Division.

Knolkhol G-40

- Study on integrated nutrient management in knol-khol variety G-40 (White Vienna group) revealed maximum yield of 167.8 q/ha in treatment combination of FYM + 100 % N + seedling dip with Azotobacter for 20 minutes followed by treatment combination of FYM + 50 % N + seedling dip with *Azotobacter* (149.4 q/ha) and FYM + 75 % N + seedling dip with *Azotobacter* (145.2 q/ha).

Tomato

- Seven tomato cultivars were evaluated for their performance under intermediate zone at Rajouri for two years. Out of the tested cultivars, Swarn Lalima (499.3 q/ha) followed by Swarn Naveen (449.5 q/ha) recorded significantly highest yield as compared to check variety Pusa Ruby (376.4 q/ha).

DVRT-2

Chilli and Capsicum

- Two year study on integrated management of chilli wilt revealed that seed treatment with Bavistin followed by seedling dip in 1 per cent Bavistin solution prior to transplanting at 30 cm high ridges and drenching with mancozeb at symptoms appearance resulted in lowest disease incidence and consequently highest yield.

Integrated Management of chilli wilt

Vegetable pea

- 11 germplasm lines were screened for yield performance. VL-8 ranked top with green pod yield of 350 q/ha followed by AP-1 which yielded 278 q/ha. AP-3 though low yielding but was ready for marketing 40 days earlier than VL-8 and AP-1.

Carrot

- Super Lal entry of this location was tested under the code CCA-05-01 in All India Coordinated trials. It ranked 2nd with yield of 239 q/ha. PC-34 recorded highest yield of 257 q/ha. Super Lal has been promoted to AVT-1.

Super Lal

Bottle gourd

- Two entries JBG 50 and JBG 51 having round and long fruit respectively have been included in national trials. JBG 50 yielded 190 q/ha and was superior to check Punjab Komal by 5.2 per cent.

Promising hybrid combinations have been identified in bottle gourd. The hybrids JBH-07-04 and JBH-07-07 ranked Ist and 2nd with yield of 451 and 426 q/ha, respectively. The bulk quantity seed of hybrid JBH-07-04 will be produced in the next year for testing in national trials as well as in farmers' field.

JBG 50: A new bottle gourd entry

Okra

- Two high yielding varieties namely JBS-1 and JBS-2 were evaluated in station trial. They showed yield of 197 and 180 q/ha as against 124, 133, and 103 q/ha yield of check varieties Arka anamika, Varsha Uphaar and Pusa Sawani, respectively. JBS 2 has been nominated for national testing in AICRP trials.
- A composite population of F_3 generation of cross HRB-9-2 x HRB-55 showed very high yield of 260 q/ha. It is under evaluation by the code Hy-905.

JBS 1: A new Okra variety

- 21 single plant progenies of different crosses of okra promoted to F_4 generation

Organic vegetable production

- Nutritional studies were carried on major vegetables with organic manures and biofertilizers along with chemical fertilizers as check. The finding revealed that some vegetables can be produced organically either by using organic manures alone or in combination with biofertilizers with average yield above obtained with recommended doses of chemical fertilizers. Some results are shown here.

Vegetable crop	Organic manure requirement
Bottle gourd	10 tons of FYM/ha at the time of field preparation + FYM @ 20 tons/ha at planting time or 10 tons of FYM/ha + poultry manure @ 5 tons per ha

Cucumber	5 tons of neem cake/ha
Radish	10 tons of FYM/ha at the time of field preparation + 20 tons of FYM/ha at planting time or 10 tons of FYM/ha + 10 tons of vermicompost/ha
Broccoli	10 tons of FYM/ha at the time of field preparation + FYM @ 20 tons/ha at planting time or 10 tons of FYM/ha + poultry manure @ 5 tons/ha **or** 10 tons of FYM/ha + Vermicompost @ 5 tons/ha
Pea	10 tons of FYM/ha + Vermicompost @ 10 tons/ha

Radish

- An INM study in radish indicated that bumper harvest of 629 q/ha was possible when half dose of recommended nitrogen with full dose of P and K was applied along with 5 tons of vermicompost as basal dose per hectare. The recommended NPK dose yielded only 462 q/ha.

Integrated Nutrient Management trial on Radish

Cauliflower

- The treatment having vermicompost @ 4 t/ha + 50 % NPK recorded maximum curd weight (850 g) with curd diameter of 18 cm, thereby giving yield of 207.2 q/ha which was 7.9 per cent more than that of control (only NPK).

Potato

- During the survey of winter season of potato fields at Assar, Jathi, Chenani and Udhampur, the incidence of the late blight of potato disease ranged between 5.82-47.32 per cent being highest in Udhampur and lowest in Jathi areas. The application of Ridomil MZ (0.2 per cent) was found highly effective to control late blight of Potato in temperate areas.

Potato under Alternate Crop Sequence in FPARP Project

Mushroom

- Quality spawn of edible mushrooms was distributed to different mushroom growers of Jammu province. During 2008-09, Division of Plant Pathology produced 1392 kg of spawn which included 466 kg of button mushroom (*Agaricus bisporus*), 350 kg of milky mushroom (*Calocybe indica*) and 567 kg of Oyster (*Dhingri*) mushroom.



Button mushroom Milky mushroom *Pleurotus* (*Dhingri*)

Medicinal mushrooms: Standardization of the protocol for the commercial cultivation of medicinal mushrooms under Jammu climatic conditions.



Agrocybe indica *Ganoderma lucidum* *Lentinula edodus*

Floriculture

- Production technology like spacing, size of corm and cormels in gladiolus and growing media in lilium for propagation through scales, bulbs and tissue culture was standardized.

Rooting, hardening and acclimatization in Lilium

- A protocol for the *in vitro* micro propagation of lilium was standardized. The scales of lilium bulbs were used as explants. These explants were surface sterilized with 0.1 % mercuric chloride (7.5 min) and inoculated on MS medium fortified with BAP (0.75mg/l) and NAA (0.5 mg/l). The basal segments were most suitable portion for the initiation of bulblets.
- Asiatic hybrid *lilium* cvs. namely Pollyanna, Merceedes, Torcana, Novacento, Novana, Brunello, Girnode, Grand Paradeso, London and Romana were evaluated. Among these cvs. Brunello performed better than other cultivars.
- Fifty five different varieties of gladiolus were evaluated on the basis of vegetative, flowering, corm and Cormel production parameters. The results depicted that White Prosperity was found statistically superior to all the above mentioned parameters and therefore suits best for cultivation under subtropical conditions of Jammu region.

Gladiolus

- Fusarium yellows (*Fusarium oxysporum* f. sp. gladioli), curbularia leaf spot (*Curvularia trifolii* f. sp. gladioli) and botrytis rot of flowers (*Botrytis gladiolorum*) were identified as major diseases of gladiolus. Fusarium wilt and yellow rot of gladiolus was effectively managed by the integrated management. Fumigation with formaldehyde (5 %), seed treatment with carbendazim (0.1 %) for 30 minute at 50^0C and soil application of Trichoderma harzianum (2.5 kg/ha) emerged as a best treatment

White Prosperity **Jyotisana**

in combating the disease up to 92.5 % followed by the combination of seed treatment with carbendazim (0.1 %), soil application of T. harzianum (2.5 kg/ha) and drenching with carbendazim (0.1 %). Two foliar sprays of Dithane Z 78 (0.1 %) at 15 days interval effectively reduced the curbularia leaf spot (*Curvularia trifolii* f. sp. gladioli)

and botrytis rot of flowers (*Botrytis gladiolorum*) up to 84.6 and 80.2 per cent, respectively.

FRUITS

Strawberry

Organic production of strawberry

- In strawberry Cv. Chandler, the application of poultry manure or Subabul leaves @ 18 tones as well as FYM @ 72 tones/ha has been found to increase the yield from 199.3 g/plant to 412.1 g/plant. The plant growth characteristics viz. flowering, fruit set and nutrient status of leaves were also improved with the application of organics as compared to control. Application of 150 kg nitrogen, 80 kg P_2O_5 and 45 kg K_2O per hectare was also found equally effective and comparable with the growth and yield achieved with the application of organics only.

Guava

A view of Guava orchard

- In guava cv. Sardar, 50 per cent nitrogen requirement could be replaced with organic manure when used with urea augmented with *Azotobacter*. However, 25 per cent in the form of FYM integrated with urea and augmented with *Azotobacter* was also found equally effective in increasing the yield, quality and nutrient status of fruit, leaf and soil of guava. The use of cent per cent nitrogen in the form of poultry manure augmented with *Azotobacter* and *Azospirillium* also increase the yield, quality and nutrient status of guava but in a low productive manner.
- Application of boron @ 200 g/plant with recommended doses N, P and K is useful to check the internal cork, as well as fruit drop. Keeping quality,

color and firmness of the fruits were better with the application of boron resulting in improvement in both quantity and quality of the produce.

Stone fruits (Plum, Apricot, Cherry, Peach/Nectarine)

- The cultivars of Peach/nectarines (July Elberta, Red Haven, Snow Queen, May Fair, Red Gold and Snow Crest), Plum (Santa Rosa, Mariposa Frontier and Red Beut) and Apricot (New Castle, Kaisha, Moorpark, Tilton, Amba, Harcourt and Babcob) were introduced at Gwari farm, Bhaderwah.

- The per cent survival of peach /nectarines plants is 56.8 %, while it is about 53.8 and 80 per cent in plum and apricot, respectively. The average plant height, stem diameter, annual extension growth and leaf area of peach/nectarines ranged from 200 to 271.4 cm, 3.6 to 5.1 cm, 44.9 to 54.9 cm and 40.6 to 49.1 sq. cm, respectively. In case of plum, the average plant height and stem diameter ranged form 81.5 to 274 cm and 2.3 to 3.3 cm, respectively, whereas average annual extension growth and leaf area ranged from 25.3 to 110.5 cm and 17.9 to 37.3 sq. cm, respectively. In apricot, average plant height, stem diameter, annual extension growth and leaf area ranged from 163 to 195 cm, 3.0 to 3.2 cm, 36.9 to 57.1 cm and 44.1 to 46.2 sq. cm, respectively. The floral bud burst in peach/nectarine, plum and apricot took place during 11-16 of March, 5-12 of March, 27 Feb-1 of March, respectively, whereas time of full bloom ranged from 18-21 March, 14-19 March and 12-14 March in the respective crops.
- The scion wood of some cultivars of plum (Tarrol) and apricot (St. Ambroise, Rakovolik, Nugget, Vivagold and Harogen) were collected from NBPGR, Shimla and grafted/budded in the nursery in 2008 which have been multiplied and transplanted in the field in March 2009.
- In 2009, 110 plants of Nectarines (Sliver King, Snow Queen, Red Gold, and Independence) have been established at Gwari farm, and bud wood of apricot (Kaisha,

Ema, Shipley Early and Sun drop), peach (Fire Prince and Scarlett Pearl) and plum (Tarrol, Swart Early, Queen Rosa, Golden Drop, Ruby Sweet, Florida 1-2) have also been procured from the Department of Fruit Breeding and Genetic Resources, Dr. YSPUHF, Solan, which shall be multiplied during current season and shall be transferred in the field during next planting season *i.e*. January 2010.

- Fourteen plants of four sweet cherry varieties (Stella, Mishri, Makhmali and Double) have been procured from SKUAST-Kashmir and planted at Gwari farm during March 2009.

Nut crops (Walnut, Almond and Pecan nut)

- Two cultivars of walnuts (SKU 002 and Opex Dachaubaria), three of pecan nut (Mahan, Paunee and Choktou) and three of almond (Makhdoom, Waris and Non Pareil) were introduced at Gwari farm during 2006. During March 2009, two more cultivars of walnut (SKU 008 and SKU 0022) and two of almonds (Parbat and Shalimar) have been introduced from SKUAST-Kashmir.
- The per cent survival of walnut, pecan nut and almond are 84.2, 64.7 and 44 per cent, respectively. The average plant height, stem diameter and annual extension growth of walnut ranged from 98.3 to 143.3 cm, 2.1 to 2.4 cms and 19.5 to 21cm, respectively. In case of pecan, the plant height ranged from 40 to 131.7 cm, stem diameter from 1.1 to 2.0 cm and annual extension growth ranged from 10 to 30.9 cm. In almond, average plant height ranged form 110 to 209 cm, whereas stem diameter and annual extension growth ranged from 1.8 to 2.3 cm and 77.0 to 79.0 cm, respectively. The bud burst in Walnut, Pecan and Almond took place during 30th March- 4th April, 23rd – 25th of March and 20th Feb–10th March, respectively. The full bloom in almond took place during 9-16th March.

Pome fruit cultivars

Apple

- Of the 24 apple cultivars (Golden Delicious, Lal Ambri, Starkrimson, Akbar, H60, H29, Firdous, Shireen, Vance Delicious, Royal Delicious, Red Chief, Golden Spur, Oregon Spur, Top Red, Silver Spur, Red Gold, Well Spur, Tydeman's Early Worcester, Mollies Delicious, Spartan, Scarlet Gala, Fuji, Gala Mast and Skyline Supreme), the highest stem diameter was measured with Firdous (4.7cm), while it was lowest with Tydeman's Early Worcester (1.8 cm). The average leaf area ranged between 46.14 sq. cm to 50.14 sq. cm being highest with H29 and lowest with Top

Red. The over all survival rate of apple plantations is 80 per cent. The bud burst in apple ranged from 7-20th March, while flowering initiated in the 1st week of April. In Pears (Bartlett, Flemish Beauty, Kashmiri Nakh, Starkrimson and Max Red Bartlett), the over all survival rate has been recorded to be 76 per cent, and highest (3.0 cm) and lowest (1.2 cm) stem diameter values were registered with Kashmiri Nakh and Max Red Bartlett, respectively. Two more cultivars (Manning Elizabeth and Red Bartlett) have been introduced and planted in March 2009. The bud burst in pear took place during 3-14th March.

Pomegranate

- Seven cultivars of pomegranate (Ruby, Mridula, Kabul, Kandhari, Amblidana, Muscat and Jalore Seedless) are surviving in the field. The plant height ranged between 33.7 to 118.2 cm being highest in Kandhari and lowest in Ruby. The average number of stems ranged from 1.0 to 3.5; being highest in Kabul and lowest in Mridula and Jalore Seedless (1.0 in each). One non-irritating variety of persimmon (Fuyu) is surviving (75 % survival rate) well with average height of 129.0 cm.

Kiwifruit

- In January 2009, seventeen plants of Kiwifruit cv. Allision have been introduced at Sartangal farm to study their performance. The bud burst in Pomegranate, Persimmon and Kiwi fruit took place during 28 March-02 April, 22-26th March and 5-20th April, respectively.

POST HARVEST TECHNOLOGY

- Technology was developed for preparing dietetic RTS beverage and candy from bitter gourd.
- The technology was developed for preparing protein enriched peach leather and toffee by blending peach pulp with soybean slurry in various ratios (0-30) along with sugar and various ingredients. Blending ratio of 85:15 was found to be the best in terms of sensory attributes.


DRYING OF FORTIFIED PEACH - SOYA LEATHER


PEACH FRUIT PULP

AGROFORESTRY

Vegetative propagation of Trimbal (*Ficus roxburghii*)

- Trimbal (*Ficus roxburghii*)- For vegetative propagation of this important under-utilized multi-purpose tree, branch cutting of 1.5-2.5cm diameter size when treated with 100 ppm IBA and planted during spring season (February-March) resulted in 77.8 per cent survival and 15.3 cm shoot length. Mass multiplication and production of quality planting stock of the species is in progress.
- *Silibum marianum*-In an experiment on developing agro-techniques for its cultivation under sub-tropical conditions of Jammu region, higher growth and seed yield per plant has been achieved when the crop was sown at the end of October and given a combined dose of 4t vermicompost and NPK @ 40:33:25 kg/ha, respectively.
- Kala zeera (*Bunium persicum*)-Evaluation through multi-locational trails on farmer's field and studies on agro-techniques of Kala zeera are in progress to develop package of practices for cultivation of this important medicinal plant.

Demonstration on Land preparation, ridge making

Crop Growth in the demonstration plot for planting of tubers at village Tatapan (Paddar) at village Hanswar(Paddar)

- Kalihari (*Gloriosa superba*)-One year data recorded on various growth and seed yield parameters of a field trail on this plant from 08 sources showed that collection from Nauni (H.P.) is performing better as compared to other. Further testing besides collection of germplasm from new sources is in progress.

Germplasm evaluation of *Gloriosa superba* **(Kalihari)**

- The University is maintaining a herbal garden at FoA, Main Campus, Chatha. The herbal garden is being maintained for the purpose of education, demonstration and production of quality planting material (QPM). The planting material is being made available to farmers, state development departments and other entrepreneurs.

Medicinal plants

- The antioxidant capacities of 15 selected north-western Himalayan medicinal plants were evaluated using DPPH (2,2′-diphenyl-2-picrylhydrazyl) radical-scavenging assay and phenolic content of these plants was determined by the Folin-Ciocalteu method. Most of these plants were analyzed first time for their antioxidant activities. It was found that the plants *Albizia lebbeck* (L.) Benth., *Terminalia belerica* Roxb., *Terminalia chebula* (Gaertner) Retz., and *Acacia catechu* (L. f.) Willd., possessed the highest antioxidant capacities and therefore could be the potentially rich source of natural antioxidants. A high correlation between antioxidant capacities and their total phenolic contents indicated that phenolic compounds were major contributor of antioxidant activity in these plants.
- Methanolic extracts of medicinal plants *viz., Adhatoda vasica, Terminalia arjuna, Vitex negundo, Aegle marmelos, Aloe vera, Emblica officinalis, Ocimum sanctum, Oscimum basilicum, Rauvolfia serpentina, Tinospora cordifolia, Terminalia belerica, Terminalia chebula* were prepared by extracting the dried plant material with methanol at room temperature. Test pathogen *Alternaria brassicae* was isolated from single spot on mustard leaf and pure culture was obtained using single spore isolation technique. Studies are under way to test the antifungal efficacy of these extracts and fractions obtained from promising plants.

SERICULTURE

- Delimiting of mulberry variety for rainfed condition achieved after testing of 20 varieties. Varieties S-146 and S-799 identified for higher yields. For cocoon weight and shell weight, variety V_1 placed at number one spot.

Fodder

- Application of 1 per cent glyphosate on about 30 cm regenerated growth of lantana bushes and grubbing of lantana bushes followed by planting either of Hybrid napier or Setaria besides providing good soil cover and forage yield were found effective and significantly better than repeated lantana cutting treatment in reducing per cent lantana biomass with a magnitude ranging from 66 to 99 per cent. Herbicidal treatment was also found economically better with a net saving of Rs.5500/-ha over the grubbing treatment.

Lantanta control

Forage production on rejuvenated lantana land

Forage Crop

Forage Maize

- In an AVT (1+2) on forage maize, five entries were evaluated. On the basis of two years data, entry JHM-07-2 out yielded the best National check variety J-1006 with green fodder yield of 475.1 q/ha. Whereas, varieties JHM-07-02, J-1006, BAIF-Maize-1 and R-2006-10 were found superior over local check African Tall with yield advantage of 38.91, 22.36, 15.99 and 10.39 per cent over local check for green fodder yield.

Forage Cow pea

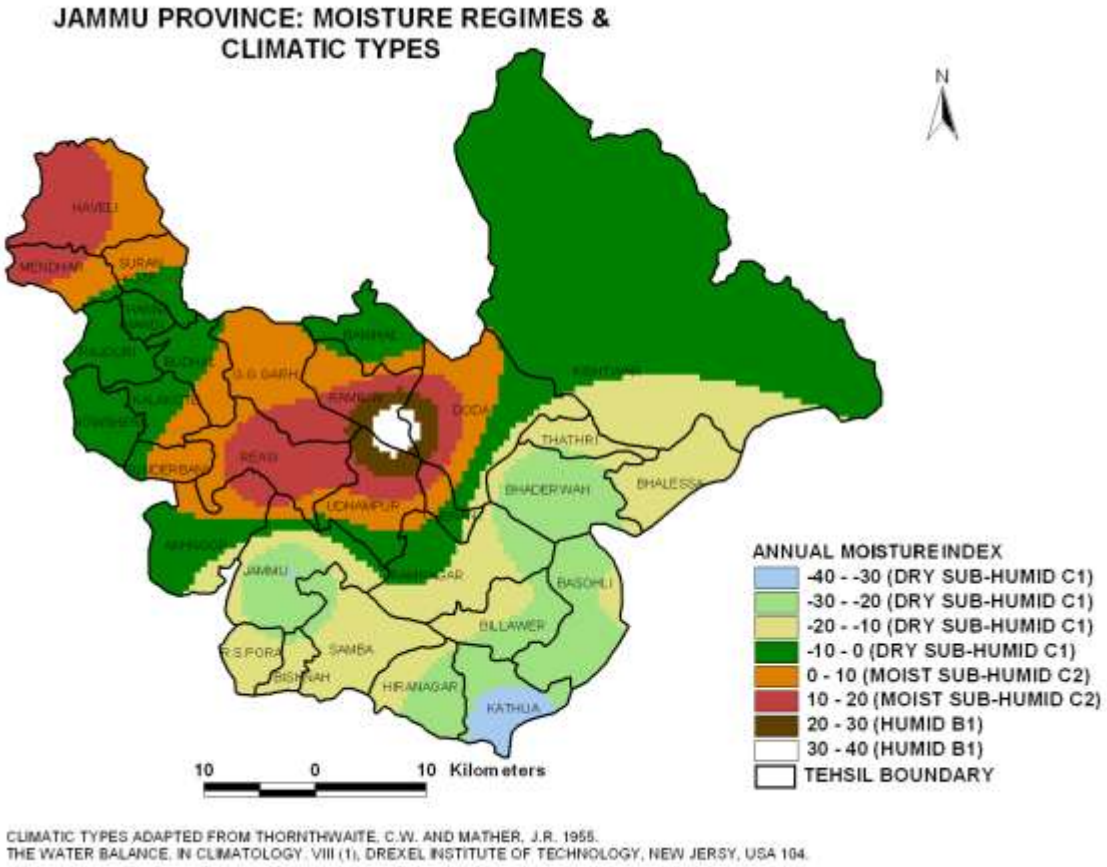
- Out of the five entries evaluated in AVT on Cowpea, two entries UPC-5286 and UPC-628 out yielded the zonal check UPC-4200 for green fodder yield. These varieties

produced 249.7 and 204.9 q/ha green fodder, respectively which were 26.7 and 3.9 per cent superior to zonal check.

- In national trial on fodder cowpea, entries Bundel lobia-UPC-4200 and UPC-626 perform better than other entries. Application of 60 kg P/ha increased the green fodder and dry matter yield significantly over 40 kg P/ha. Further increase in P level did not bring about any significant improvement in yield.

Agrometeorology

- Annual Moisture index and climate types of Jammu region have been derived from meteorological data from last 30 years and the same is depicted on the map using Geographical Information System (GIS).



CLIMATIC TYPES ADAPTED FROM THORNTHWAITE, C.W. AND MATHER, J.R. 1955. THE WATER BALANCE. IN CLIMATOLOGY. VIII (1), DREXEL INSTITUTE OF TECHNOLOGY, NEW JERSY, USA 104.

- The conversion efficiency to produce dry matter from absorbed photosynthesis active radiation (PAR) was more in intercrop (maize + moong) as compared with sole maize and sole moong. Further, it gives higher maize equivalent yield than the sole crop.
- A Decision Support System for Agricultural transfer technology (DSSAT-4.0) were tested by this centre in collaboration with Indian Meteorological Department to

forecast the pre harvest wheat yield in the month of February for variety PBW343. The result revealed that present weather condition favours the late sown wheat crop and the model also predicted 5 to 10 per cent more yield than the last year. The normal sown wheat crop was predicted 5 per cent less yield as compared to previous years.

- Weekly Agromet Advisory Bulletin being issued based on weather forecast received from NCMRWF/IMD and being disseminated through various agencies like print, mass media, KVK's, NGO's for the benefit of farmers of the region. During the year 2008-09, 235 forecast was received based on these forecast 51 Crop weather bulletins were being issued by this centre. The rainfall accuracy was found about 77 per cent with a ratio score of 52.8 per cent. The rainfall forecast saves 3 irrigations during *rabi* seasons and 4 in *kharif* seasons. The Agromet Advisory contents are also helpful to increase the crop yield using suitable crop management practices and to reduce the loss of yield by weather hazards.

Agricultural Engineering

- A study was conducted to find the energy flow pattern in the agricultural sector on small farms consisting of bullock operated farms and mixed farms. Output-input ratio was more for mixed farms as compared to bullock operated farms. The total input energy per annum was 29,293.22 and 27,246.05 MJ/ha and output-input ratio 2.28 and 2.81 for bullock operated and mixed farms, respectively.
- Various seeding devices and practices were evaluated for wheat crop and parameters such as field capacity, efficiency, depth of sowing, germination and yields were compared. Tractor drawn seed cum fertilizer drill recorded yield increase of 61.4 per cent at substantial reduction in total cost of operation over control. Higher germination (92 per cent) was also reported for this seed drill compared to broadcasting (48 per cent).
- A typical dry land village, near Samba was selected and data on input used such as seed, fertilizer, chemicals, human, animal and prime movers and output in the form of yield was collected in a pre-devised proforma. Human (869.8 MJ/ha) and Animal (1443.2 MJ/ha) formed the chief source of energy for wheat production and operation wise tillage, sowing and intercultural operations utilized 63 % of total energy whereas for threshing using mechanical power it utilized only 3 per cent.

Cropping System Research

Under Irrigated Conditions of Jammu

Diversification and intensification of need based alternative cropping system.

The experiment had been conducted for several years at Jammu and the findings are presented as under:

Rice (var. PC-19)-Marigold (Var. Pusa Narang)- French bean (var. contendor) sequence

Diversification trial on Rice -Marigold - French bean at Chatha

- This sequence has been recommended as most economical which has earned net profit of Rs. 1,67,990, system profitability of Rs. 460/ha/day and crop profitability of Rs 547 per day, with a benefit- cost ratio of 2.90 and land use efficiency of 84 per cent. This sequence generates on farm employment for 307 days in a year. The apparent nutrient use efficiency has been worked out as 41.52 kg/ha with an NPK uptake of 62.04, 14.43 and 85.63 kg/ha. It has also been realized that the sequence is most sustainable as no negative trends were observed in terms of soil health and the improvement of soil organic carbon content from initial value of 0.55 to 0.58 per cent has been observed for a period of five years.

Diversification trial on Rice -cabbage - Onion at Chatha

Diversified crop sequences, rice-potato-onion and rice-cabbage-onion have also been identified as profitable and sustainable sequences for realizing higher productivity in terms of rice equivalent yield (REY) of 29.5 and 24.17 t/ha and net returns of Rs.1,48,498 and Rs.1,31,293 with B:C ratio of 2.12 and 2.66 over existing rice-wheat system with REY of 11.31 t/ha, net returns of Rs. 32,492/ha and B:C ratio (1.22), respectively under irrigated conditions of Jammu region. Land use efficiency under rice- potato-onion and rice-cabbage-onion was recorded 80 and 84 per cent which is at par with rice-marigold-French bean (85 per cent). However, energy value in terms of energy use efficiency was 3.07 and 4.08 over existing rice-wheat system (9.34). The total input energy area was 33553 MJ with an out put energy on 144256 MJ having efficiency of 4.29.

Yield maximization of hybrid rice (PHB-71) and wheat (PBW-343) through Site Specific Nutrient Management under rice-wheat cropping sequence

Experiment on SSNM for yield maximization of hybrid rice (PHB-71) and wheat (PBW-343) in a system has been conducted since *Kharif* 2003 for the duration of five years under assured irrigated system at CSR farm, Chatha Jammu and application of 150 kg N, 100 kg P_2O_5, 80 Kg K_2O, 50 kg S (through gypsum), 1.20 kg $MnSO_4$ and 40 kg $ZnSO_4$/ha in Hybrid rice (PHB-71) during *kharif* and 150 kg N, 100 kg P_2O_5, 80 kg K_2O in wheat (PBW-343) during *rabi* in rice-wheat cropping system regarding total productivity of 11.0 t/ha as against 7.8 t/ha with an yield advantage varying from 6.00-7.50 t/ha than non hybrid and the average benefit cost ratio of 2.65 than existing one (2.15) was observed, indicating the technology generated is profitable.

Resource conservation technologies through Bed planter and Zero till Seed drill

Location specific Technologies generated at farmers field of intermediate & and sub- tropical zones

a) Under sub-tropical irrigated areas for Kathua and Jammu. (Ghagwal, Hiranagar, Bishnah, Vijaypur, Marh and Bhalwal)

Profitable cropping sequence

Crop: Rice (PC-19) Potato (K. Badshah) Onion (N-53) with REY:30 t/ha, net returns of Rs. 1,46,987/ha and B.C ratio of 2088.

b) Under intermediate zone of Udhampur and Kathua (Udhampur, Majalta, Billawar, Basholi, Reasi, Pauni and Rajouri)

Profitable cropping sequence

Crop: Maize + Black gram (Kanchan + Pant U-19), Potato (K. Badshah) and Onion (N-53) with maize equivalent yield (MEY) of 29.3 t/ha and realized net returns of Rs. 1,54,133/ha with B: C Ratio of 2.99.

Location specific experiments were also conducted for validation of the results at various locations of intermediate and sub-tropical zones under irrigated condition of Ghagwal, Hiranagar, Bishnah, Vijaypur, Marh and Bhalwal.

It was observed that farmer use either N alone or N and P in combination as fertilizers. However, use of above balanced recommended dosage helped to realize 35.7 per cent yield increase over alone N application, 8.4 per cent over N+P application and 22.8 per cent over N and K combination in rice-wheat system which increased the total system productivity to 9.11 t/ha and net returns of Rs. 53,876/ha.

c) Under rain-fed conditions of Udhampur, Majalta, Billawar, Basholi, Reasi, Pouni and Rajouri:

Performance of different cropping sequences under temperate region of Jammu and Kashmir

AL-332 variety of wheat, KS-101 of mustard, Kent of oat, Bonneville of pea, local rajmash, K-517 of maize and K-84 of paddy were selected and tested in the form of 8 treatments *viz.* wheat followed by rice (T_1) or maize + rajmash (T_2), mustard followed by rice (T_3) or maize + rajmash (T_4), oat followed by rice (T_5) or maize + rajmash (T_6) and pea followed by rice (T_7) or maize + rajmash (T_8) at Sartingal farm of Bhaderwah. The experiment was started from

Rabi 2007. Despite heavy snowfall during February 2008, very good yields of *rabi* sown crops namely wheat (32.7 and 31.2q/ha), mustard (9.3 and 9.0 q/ha), oat (20.0 and 20.1 q/ha besides 150 and 156 q/ha green fodder during first cut) and pea (15.2 and 16.5q/ha) were obtained in the respective treatments. During *Kharif* 2008, paddy and maize + rajmash were grown with various combinations but performed better with pea and the highest yields of paddy (42.8 q/ha) and maize equivalent yield (46.2 q/ha) were obtained, followed by wheat (41.7 q/ha of paddy) and mustard (45.7 q/ha of maize equivalent yield).

Soil moisture and nutrient conservation through agronomical measures on steep slope of temperate areas

The study of three years (2006-2008) revealed that treatment maize + rajmash with alternate strips of red clover proved effective in increasing the maize (KH517) yield and retention of highest soil moisture at harvest with lowest soil erosion in comparison to rest of the treatments tested. Intercropping on the hill slope proved better in respect of yield, soil loss and soil moisture retention in comparison to monocropping.

New Records of Nematodes from Rakh Dhiansar:

- Root-knot nematode (*Meloidogyne incognita)* from frenchbean roots.
- Root-knot nematode (*M. incognita)* from pea roots.
- Root-knot nematode (*M. incognita)* from lentil roots.
- Rot-knot nematode (*M. incognita)* from banana roots.
- Root-knot nematode (*M javanica)* from papaya roots.

Technologies Developed

- Developed models of agri-horticultural (aonla/guava + gobi-sarson in *Rabi* and fodder maize in *kharif*) and agro-forestry systems (*Leucaena leaucocephala/Albizia lebbek/Grewia optiva* + gobi-sarson in *Rabi* and fodder maize in *kharif*) for stable, sustainable productivity and profitability under dryland conditions in north-western Himalayan plains of Jammu region. The aonla (*cv*. NA-7) trees were grown at 5 x 5 m spacing. Gobi-sarson was sown in lines as intercrop between fruit plants of aonla and guava.

Aonla trees in fruiting at DLRSS, Rakh Dhiansar

- The cost of operation of dryland weeder (Wheel hand-hoe) tested at this Station was half of the manual weeding with *khurpi* along with reduction in human drudgery to a considerable extent. The yields of both maize and wheat were improved by 5 and 15 per cent over the traditional farmers' practice of weeding which yielded 1800 and 1700 kg/ha in respect of wheat and maize crops, respectively. The number of man-days was reduced from 25 to 15 and 50 to 40 in wheat and maize crops, respectively.

Wheel Hand-hoe in operation at farmer's field

- In line seeding of wheat using seed-cum-fertilizer drill with a spacing of 22.5 cm at a seed rate of 100 kg/ha, as against the traditional method of broadcasting, there was a saving of 20 kg/ha of seed. The use of seed-cum-fertilizer drill has increased the wheat yield by 20-25 per cent as compared to broadcasting method in *kandi* region fetching better net returns even during the years of less rainfall. Though the adoption is slow, yet farmers have started embracing line-sowing.

Scientists and field staff of DLRSS, Dhiansar during seeding of wheat crop by seed-cum-fertilizer drill at farmer's field at Patti

Management of anar butterfly

Since wild pomegranate (Anardana) grows in wild wherein no chemical treatments are feasible in large forest areas, biological control of anar butterfly is the only alternative for its management. This division has achieved and demonstrated its successful management in wild growing belts of Kud and Rajouri through 3 weekly releases of *Trichogramma embryophagum* @ 1.5 lakh/ha .

Cole crops

The release of larval parasitoids @ 15,000 per hectare resulted in significant suppression of *Plutella xylostella* larval population. *Cotesia glomeratus,* the larval parasitoids have been discovered in the field conditions of Jammu to suppress the pest population of cabbage butterfly larvae which is causing extensive damage to the cole crops.

Pollination requirements of crops

Studies on the colony requirements of crops revealed different crops have different pollination requirements. While 2-3 colonies/ha were optimized for Citrus, Litchi, Ber, Guava and radish, 5-8 colonies in case of carrot and onion resulted effective pollination at 10-15% bloom.


A view of the experimental plot for carrot seed production

Wheat

Loose smut: Management recommendations:

- Sow certified seed of wheat varieties.
- The best insurance against loose smut is seed treatment with carboxin, carbendazim (@ 0.2%) or tebuconazol (@0.15%).
- Regular field scouting in order to manually remove the infected ear heads, collecting them in a bag and destroying the bag by burning or burying deep in the soil away from the field.

Healthy and loose smut infected ear heads of wheat

Yellow rust: Management recommendations:

- Plant resistant cultivars.
- Seed treatment to manage seed borne infection.

- Foliar applications with propaconazole @ 0.1%, starting at an early stage. Once the crop is in the grain-filling stage, fungicide benefits are unlikely.

Leaf and head infection with yellow rust

Powdery mildew: Management recommendations:

- Powdery mildew has emerged as an important disease, infecting almost all the major cultivars grown in Jammu sub-tropics.
- Apart from seed treatment application of dinocap @ 0.05% is highly effective to manage the disease.

Symptoms of powdery mildew on leaves

Rice

Paddy blast: Management recommendations:

- Destruction of infested crop residue. Burn diseased-straw and stubble.
- Continuous flooding is recommended to limit blast development.
- Use of disease free seed and seedling.

- Blast is favoured by excessive nitrogen fertilization, hence, avoid excess nitrogen. Split applications of nitrogenous fertilizer.
- Monitor throughout the season, for the presence of leaf lesions; intensify monitoring as plants approach the boot stage. If blast lesions are present and increasing just before the boot stage, a treatment is required.
- Rice blast is a multiple cycle disease, application of tricyclazole @ 0.06% from early stage in the season has been found effective

Paddy blast symptoms on leaf (a & b) neck (c) and nodes (d)

Vegetables:

Wilt complex of chilli/capsicum: Management recommendations:

The disease being complex in nature is manifested as Damping-off and root rot (*Rhizoctonia solani*, *Phytophthora* sp. *Fusarium* sp. and *Pythium* sp.), Anthracnose (*Colletotrichum capsici*), stem rot (*Fusarium solani*), wilt (*Fusarium oxysporum* f.sp. *capsici*) and blight (*Phytophthora capsici*) at different stages of the crop. To manage it following practices are recommended -

- Long crop rotation (4-6 years) to reduce populations of the fungi. Avoid using any solanaceous crop (potato, tomato, chilli, brinjal) in the rotation.
- Plantation of crop on the ridges and providing need based irrigation helps in reducing the disease incidence and its spread.
- Avoid high levels of nitrogenous fertilizers.
- Application of fungicide combination of metalaxyl and mancozeb @ 0.25% as spray at the crown region at 7 to 10-day intervals particularly after the

fruit set; and application of biocontrol agent as seed/seedling treatment and its augmentation in soil along with FYM reduces the wilt incidence.

- Sprays should be conducted regularly, particularly before onset of rains.

View of diseased (a & b) and healthy (c & d) capsicum field

Seed production

The scientists are also involved in breeder and to some extent foundation seed production of cereals, pulses, oilseeds, forages; breeder/truthfully labeled seed production of vegetable crops; quality planting material production ornamentals, fruits and medicinal/aromatic plants at its various units including Chakroi/Chatha farms; Rajouri/Samba/Poonch/Bhaderwah/ Udhampur Stations/units. The work on nucleus seed production is being carried out mainly at Chatha while breeder/foundation/certified mainly at Chatha/Chakroi/Rajouri stations. The details of seed produced are given below.

Summary of Field Crops realization (in qtls.)

Particulars	**Achievements**
Nucleus seed	As per requirement
Breeder seed	87.59
Foundation seed	2184.30

Certified seed	0.00
Truthfully labeled seed	31.48
Total	**2301.87**

Summary of Planting material realization (Numbers)

Particulars	**Achievements**
Planting material (Fruit plants)	50507
Planting material (Medicinal & Aromatic Plants)	26200
Planting material (Floriculture)	19100

Detail of seed / planting material Targets and achievements (In Quintals)

Particular	**Achievement**
Field Crops	
A. Paddy	
Nucleus seed	(As per requirement)
Breeder seed	4.43
Foundation seed	Basmati B-370 401.30 Sanwal Basmati 5.50 PC-19 35.90 Jaya 400.00
Total	**847.13**
B. Wheat	
Nucleus seed	2.5
Breeder seed	76.78
Foundation seed	1243 .00
Total	**1319.78**
C. Maize	
Nucleus seed	As per requirement
Breeder seed	1.50
Total	**1.50**

Detail of seed / planting material Targets and achievements (In Quintals)

D. Oilseeds	
Nucleus seed	0.055
Breeder seed	0.80
Foundation seed	3.50
Certified/Truthfully Labelled	0.45
Total	**4.805**
E. Pulses (Gram, Fieldpea, Lentil, Mungbean & Urdbean)	
Nucleus seed	0.60
Breeder seed	8.36
Foundation seed	2.10
Certified/Truthfull Labelled	0.35
Total	**11.81**
F. Forages* (Oats)	
Foundation seed	Oats (Sabzar)* 90.00
Total	**90.0**

G. Horticultural crops Planting material (Numbers)	
Mango	8231
Citrus	6955
Litchi	612
Pome granate	1758
Guava	2095
Peach	5276
Pear	570
Aonla	2100
Phalsa	5518
Grapes	8500
Apple	1357
Plum	1359
Apricot	73
Strawberry	4000

Karonda*	1727
Papaya*	376
Total	**50507**

H. Vegetable Seed Truthfully Labelled (in quintals)	
Okra	2.50
Cucurbits	0.04
Chillies	0.01
Palak	0.72
Methi	0.22
Carrot	0.10
Radish	0.03
Coriander	0.23
Peas	0.40
Tomato	0.02
Potato	25.0
Turmeric	2.0
Cole crops	0.21
Total	**31.38**
Floriculture Seed	
Gladiolus (corms)	6000
Marigold (kg)	8.0
Tuberose (bulbs)	6000
Amarylils (bulbs)	600
Chrysanthemum (cuttings)	6000

Roses (budded)	500
Total(cuttings/bulbs)	**19100**

H. Vegetable Seed Truthfully Labelled (in quintals)	
Okra	2.50
Cucurbits	0.04
Chillies	0.01
Palak	0.72
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Cole crops	0.21
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Amarylils (bulbs)	600
Chrysanthemum (cuttings)	6000

Roses (budded)	500
Total(cuttings/bulbs)	**19100**

*The crops are at harvesting stage

Marigold(Pusa Narangi Gainda)

Peas

Methi var.Kasuri Supreme

Spinach-C-13

VETERINARY SCIENCES AND ANIMAL HUSBANDARY

Veterinary Clinical Medicine and Jurisprudence

A baseline survey was conducted in Jammu, Kathua, Udhampur, Rajouri, Doda and Poonch districts. A total of 295 blood samples from cattle, 117 samples from buffaloes (*Bubalus bubalis)* from 183 and 102 dairy units/households were sampled from 58 villages, respectively. 70 samples from sheep and 35 samples from goat of different age groups were collected. Anaemia was observed in 12.7, 19.1, 67.6 and 70.6 per cent cattle, goat, buffaloes and sheep, respectively. Protein deficiency was observed in 6.1 and 3.7 per cent cattle and buffaloes, respectively. Energy deficiency (hypoglycemia) was observed in 20.4 and 18.5 per cent cattle and buffaloes, respectively. Mineral analysis revealed that the 40.1, 36.3, 26.9 and 30.3 per cent cattle, buffaloes, sheep and goat, respectively were deficient in calcium. Phosphorous deficiency was observed in 33.8, 20.3, 8.06 and 6.06 per cent cattle, buffalo, sheep and goat, respectively. Sodium deficiency was observed in 24.4, 34.8, 54.2 and 60 per cent cattle, buffaloes, goat and sheep, respectively. Hypocupraemia was observed in 48.7, 30.1 and 4.9 per cent cattle, buffaloes and sheep, respectively. Zinc deficiency was observed in 11.3 and 1.0 per cent cattle and buffaloes, respectively. Cobalt deficiency was observed in 20.9 and 3.2 per cent cattle and buffaloes, respectively. Iodine deficiency was observed in 96.3, 97.4, 80.0 and 62.5 per cent cattle, buffaloes, sheep and goat, respectively.

Based on the prevalence of deficiencies in the livestock, Urea-Molasses-Multinutrient-Blocks **(UMMB)** blocks were prepared and supplemented to the dairy animals, sheep and goats in various agroclimatic zones. Marked improvement in the body weight, general health condition, milk fat, and fertility were observed. Fodder and soil samples from various districts were analyzed for macro and trace elements. Analysis of data generated is in progress.

Pharmacology and Toxicology

a) Pharmacokinetics of antibacterials in small ruminants

- **Disposition kinetics and urinary excretion of ciprofloxacin in goats following single intravenous administration**

Following i.v. administration of single dose of ciprofloxacin @ 4 mg/kg BW, the drug was detected in the serum of the goats up to 12 hrs. Various pharmacokinetics parameters were determined. *In vitro* plasma protein binding was found to be 41.0 ± 13.10. Urinary recovery of ciprofloxacin within 36 h was 29.7 ± 10.3 per cent of the administered dose. Based on the efficacy predictor of concentration dependent antibacterial like ciprofloxacin, the drug maintained adequate therapeutic concentration upto 12 h in the animals.

- **Pharmacokinetics and plasma protein binding of cefepime following single intravenous administration in goats**

Cefepime after i.v. administration in goats @ 10 mg/kg B.W. the plasma concentration declined rapidly and lowest therapeutic concentration of the drug were maintained upto 12 h. *In vitro* protein binding of cefepime was determined and it was found to be 7.45±4.46 per cent. The binding of the drug was not concentration dependent. Using the surrogate markers for time dependent antibiotics (T>MIC) like cephalosporins cefepime is likely to be effective against bacterial isolates with MIC ≤ 1 when administered after every 12 hours.

b) Oxidative stress induced by pyrethroid in rats and their amelioration

- **Effect of Chronic Dermal application of Cypermethrin on Oxidative Stress and Lipid Peroxidation in Wister rats**

Cypermethrin was applied dermally at intra-scapular region @ 50 mg/kg B.W. (1/10 LD_{50}) daily for 120 days in Wister rats of either sex of 150-200 g weight maintained under standard conditions of management. The various enzymatic markers like Superoxide dismutase (SOD), catalase, glutathione peroxidase (GSH-Px) and blood glutathione were significantly altered in time dependent manner upto the culmination of the exposure. Significant increase in lipid peroxidation of the erythrocytic membrane was observed from 30 days onwards and the peroxidation was highest after 120 days of exposure.

- **Protective Role of Alpha-tocopherol on Cypermethrin Induced Oxidative Stress and Lipid Peroxidation in rats**

Wistar rats were randomly divided into four groups comprising of control (no treatment given), vehicle (linseed oil), cypermethrin alone and cypermethrin with alpha-tocopherol. to determine protective effects of the alpha-tocopherol on cypermethrin induced oxidative stress. Supplementation of α-tocopherol along with cypermethrin significantly corrected the altered values of oxidative enzymes like Catalase, SOD GSH-Px and blood glutathione. However α-tocopherol did not alleviate lipid peroxidation induced by cypermethrin.

- **Protective effect of L-ascorbic acid on cypermethrin induced oxidative stress and lipid peroxidation in wistar rats**

Supplementation of L-ascorbic acid along with cypermethrin treated animals did not induce lipid peroxidation of erythrocytes and maintained total plasma proteins and catalase activity to the normal values compared to cypermethrin exposed animals. However, L-ascorbic acid didn't alleviate the negative effects of cypermethrin on the activities of SOD and GSH. Also the activity of GSH-Px was markedly elevated with the administration of L-ascorbic acid.

c) Sub acute mineral toxicity in small ruminants

- **Experimental fluorosis in goats with special reference to toxicokinetics and its amelioration**

Daily oral administration of Fluoride for 30 days resulted in significant decrease in the activities of blood cholinesterase, superoxide dismutase and alanine aminotransferase, acid and alkaline phosphatases. But, the activities of catalase, Lipid peroxidation, aspartate aminotransferase, blood urea nitrogen, creatinine, total protein, albumin, globulin were significantly increased. No significant effect on the activity of LDH, A/G ratio, plasma Ca^{+2}, P^{+4} and K^{+} concentration but there was decrease in Mg^{+2} and Na^{+}.

Different toxicokinetic parameters like $t_{1/2}\beta$, t_{max}, C_{max} and AUC were significantly different on day 30^{th} of fluoride administration as compared to day 1 of administration. On ECG parameters fluoride significantly increased P-R, Q-T, S-T intervals and T wave duration and caused sinus bradycardia after 30 days of exposure. Overall density of the bony cortex was increased in radiographs of right forelimb after 30 days of exposure.

Aluminium sulphate (Al_2 $(SO_4)_3$) was found to be a useful ameliorative agent in reversing the toxic symptoms and various biochemical and hematological alterations induced by fluoride alone. Administration of $Al_2(SO_4)_3$ delayed the time of peak plasma fluoride concentration and lowered the C_{max} as compared to goats given Fluoride alone.

- **Studies on experimental molybdenosis and its amelioration in goats**

Daily oral administration of molybdenum @ 10.8 mg/kg B.W. for 30 days induced Toxic symptoms like inappetance, weight loss, decreased ruminal motility, rough hair coat, intermittent diarrhea, alopecia, sway back, anemia, achromotrichia and emaciation. Significant increase in the levels of alkaline phosphatase, alanine aminotransferase, lactate dehydrogenase, blood urea nitrogen, creatinine, and lipid peroxidation of erythrocytes were observed. However, other enzymes were not altered. A significant decline in the level of plasma ceruloplasmin, total plasma protein, albumin, and globulin was also observed. Haematological examination revealed macrocytic hypochromic anaemia with significant decline in the mean values of Hb, PCV, TLC, TEC and MCHC.

Copper (II) sulphate pentahydrate administered daily for 30 days was useful in alleviating toxic symptoms and reversing haemato-biochemical alterations.

Livestock Product Technology

- **Efficacy of different organic acids as coagulants on quality attributes and shelf life of Kaladhi**

Kaladhi is the most popular and relished indigenous heat cum acid coagulated milk product of Jammu & Kashmir. The present study explored preparation of Kaladhi by using various organic acids as coagulants. Processing technology for the preparation of Kaladhi was standardized. Lactic acid at 5 per cent level proved to be optimum for Kaladhi preparation. Kaladhi prepared from 5 per cent lactic acid had 11.1 per cent yield and 4.18 pH values. The product had 32.5, 25.5, 50.4 and 2.4 per cent moisture, protein, fat and ash values, respectively. The microbial profile of the product namely total plate count, coliform count and yeast and mold count, all were in the acceptable limits for at least 14 days of ambient temperature. The sensory scores for Kaladhi were most acceptable up to 14 days of ambient storage. Production of Kaladhi was most acceptable up to 14 days of ambient storage. Production of Kaladhi on cost consideration suggested a viable proposition in favour of small entrepreneurs. .

- **Effect of Non-Meat Proteins on Quality Characteristics of Chicken Kabab**

Effect of Extension of meat with non-meat proteins can increase the reach of such products to the masses and can be helpful in ensuring food security. So, the present study was optimize the basic formulation, processing conditions for the preparation and to assess the efficacy of cowpea, green gram and black bean as extender in chicken *seekh kababs* from spent hen meat. Incorporation of 9 and 4 per cent refined vegetable oil and refined wheat flour, respectively as binder were found to be optimum for chicken kababs which should be cooked to an internal temperature of 78±2 ^{0}C. Chicken kababs from spent hen meat could be suitably extended with either cowpea, green gram or black bean at 15, 15, and 10 per cent levels (replacing lean meat w/w) respectively. Extended chicken kababs could be conveniently stored in aerobic packaging for short term (21 days) at refrigerated temperature (4±1^{0}C). Thus, comparatively low cost chicken kababs with good to very good acceptability could be developed utilizing spent hen meat and further extending the same with cheap non-meat replacers.

Veterinary Surgery and Radiology

- **Studies on pre- and post- operative haemato-biochemical, blood gas and plasma mineral status in cows with intestinal obstruction**

The present study was conducted in 10 adult female crossbred cows admitted to clinics for treatment of digestive disorders and found positive for intestinal obstruction on the basis of clinical signs and transrectal palpation. Further, diagnosis in was confirmed by subjecting these cows to right flank laparotomy in standing position. The exploration of part involved in intestinal obstruction was done followed by its resection and end to end entero-anastomosis.

History of exclusively feeding of wheat straw and wheat bran, colicky pain up to 24 hours, cessation of defecation up

Fig I: Exteriorization of the affected intestinal loop in a cow suffering from intestinal obstruction due to intussusception

FIG II: Resected parts of intestines of cows suffering from intestinal obstruction due to intussusception

to 72 hours, no history of deworming, 60 per cent cows were less than 3 years and all cases presented in hot summer with a humidity of 95 per cent were the most striking findings.

Interesting feature to notice in all these cows was metabolic alkalosis which was evidenced by higher values of pH, buffer base and base excess; decreased partial pressure of oxygen (PaO_2) and saturated oxygen (SO_2); increased partial pressure of carbon dioxide ($PaCO_2$), bi-carbonate (HCO_3^-) and total carbon dioxide (tCO_2). Surgery and post-operative treatment with mineral supplementation, polyionic therapy and routine antibiotics and analgesic was effective as it showed substantial improvement in clinical parameters, blood gas status, mineral and haematobiochemical parameters. However, the fluid therapy should be further supplemented with potassium and chloride.

Recommendations

In addition to routine post operative care and treatment, balanced mineral mixture @ 50 g daily, ringers solution and 5 per cent dextrose (5 l approximately) immediately after laparo-enterotomy and then at 24 and 48 hours post operatively was found effective in managing the cows with intestinal obstruction, as it showed substantial improvement in clinical parameters, blood gas status, mineral and haematobiochemical parameters. Further, the fluid therapy should be supplemented with potassium and chloride.

- **Comparative anti-nociceptive efficacy of tramadol and nimesulide alone and their combination in ovariohysterectomized dogs**

Tramadol (2 mg/kg) and nimesulide (4 mg/kg) are effective in controlling postoperative pain due to ovariohysterectomy in female dogs. Further, combination of tramadol (1 mg/kg) and nimesulide (2 mg/kg) was found superior to tramadol and nimesulide alone in controlling postoperative pain.

Veterinary Anatomy and Histology

- **Anatomical and morphometrical studies on the Bakarwali goat**

Topographic location of heart, lungs, kidney, spleen and thyroid glands were studied with the help of systemic dissection. The heart lies opposite to the lateral wall of the thorax from 2nd inter costal space to the caudal border of 5th rib. The origin of pulmonary artery was present at the level of IIIrd inter costal space about 25cm below the summit of IIIrd thoracic spine. A big rectangular cardiac notch was present in the left lung extending from the caudal border of 1st rib to the caudal border of 5th rib.

The spleen can be easily palpated between the 10th rib to the caudal border of 13th rib in the proximal 1/3rd of left abdominal area.

The left kidney was extended from 2nd lumber vertebra to the mid of 5th and 6th lumber vertebra, where as the right kidney was located between the 12th I/C space or 13th rib to the 3rd lumber vertebra.

The thyroid gland consisted of two lateral lobes and a narrow isthmus. Each lobe was elongated in shape. The left lobe was extended from laryngeal cartilage up-to the 4th tracheal cartilage, whereas the right lobe was extended from the 1st tracheal cartilage to the 8th tracheal cartilage. Average length, width and thickness of lobes were 4.85 x 1.8 x 0.61 cm respectively.

- **Origin of course of coronary artery**

The origin and course of the coronary arteries were studied with the help of roentogenic method and dissection. It was observed that the left Coronary artery gives the major supply to the left auricle and left ventricle. It also contributes to the wall right ventricle of the heart. The right coronary artery was small and it gives major supply to right auricle and a very small part of left surface of right ventricle. .

Animal Nutrition

The research has been carried out on the nutritional evaluation of locally available feed resources for formulation of economic ration for livestock and poultry.

- To study the effect of partial replacement of dietary protein by leaf meal mixture on the performance of kids a leaf meal mixture consisting of *Leucaena leucocephala, Melia azedarach* and *Morus alba,* in the ratio of 1:1:1 was prepared. Twelve healthy local weaned male kids (4-5 months age) were divided in control and treatment group. The control group was fed concentrate mixture along with wheat straw whereas in experimental group concentrate mixture was replaced with leaf meal mixture up to 50 per cent level. There were no significant difference between treatment and control groups in terms of body weight gain and nutrient intake. A positive balance of nitrogen, calcium and phosphorus were seen in both the groups. The body weight gain was similar in both the groups. No adverse effect was found on blood biochemical and rumen fermentation parameters. The results showed that replacement of concentrate mixture by tree leaves resulted in supplements cheaper than the commercial concentrates.
- To study the effect of dietary replacement of maize by broken rice on performance of broilers, eighty, day old commercial broiler chicks were randomly divided into 4 dietary treatment groups D1, D2, D3 and D4 having 0, 50, 75 and 100 per cent replacement of broken rice for maize, respectively. The feeding trial was conducted for a period of 6 weeks. The feed intake was significantly higher in group D2 in comparison to all other 3 groups. The body weight gain was similar up to 75 per cent replacement level of maize

with broken rice; however at 100 per cent replacement the weight gain was significantly lower. The feed conversion ratio was highest and feed cost per kg weight gain was significantly lower at 75 per cent replacement in comparison to other groups. This study revealed that the cost of broiler feed can be reduced by replacement of feed maize with broken rice up to 75 per cent level.

Livestock Production and Management

Vanraja bird found suitable for semi-intensive system of rearing. The experimental results suggest that *Vanaraja* chicken can be reared economically under semi intensive system (up to eight weeks of age) than cage or deep litter system.

Public Health and Hygiene

Microbiological examination of 872 samples which include milk, utensil washings, hand swabs, water samples and common milk products was carried out. So far 166 microbial isolates of Public Health significance were isolated comprising of 62 strains of staphylococcus, 7 strains of streptococcus (*Streptococcus faecalis* 3 and *Streptococcus agalactiae* 4) and 45 *E.coli*. Besides these five strains of salmonella (non typhoid group) and three strains of Pseudomonas were isolated. Two out of 70 (2.9 per cent) of individual cattle milk samples reacted positively by Milk Ring Test (MRT) for brucellosis, where as rest of samples were negative. The MRT positive animals were subjected to RBPT and STAT using serum obtained from such animals. Similar tests were conducted on buffalo milk samples (30). The sera samples from human handlers of positive reactor animals were also tested by RBPT and STAT. Microbiological examination of milk products *viz* paneer, burfi, Khoa and Kaladhi collected from local market revealed that burfi had the presence of large number of food poisoning organisms like staphylococcus organisms followed by paneer and Khoa presumptive *E.coli* organism was isolated from 4 out of 7 samples of Kalaari The gross unhygienic conditions prevalent during the preparation of these products were revealed by the presence of coliforms (MPN method). Based on the studies it is concluded that steps must be taken for hygienic control of milk and milk products by vendors and concerned agencies.

Unhygienic handling of juices in the market

Veterinary Epidemiology and Preventive Medicine

- **Studies on Bacterial Diarrhoea in Neonatal Bovines**

The present study on status of bacterial diarrhoea in neonatal bovine calves in and around areas of Jammu district was carried out during the year 2005-06. A total of 296 calves were investigated for the disease and diarrhoea was reported in 103 calves. The result of investigation revealed an overall incidence of 34.8 per cent. It was observed that season, age, management system and breed of the calves has a direct bearing on incidence of neonatal calf diarrhoea. The season specific incidence was 38 per cent in monsoon, 25 per cent in winter and 31 per cent in summer. Unorganized dairy farms were more vulnerable to calf diarrhoea and reported an incidence of 35.9 per cent as compared to calves reared under organized system where an incidence of 31.5 per cent was observed. Breed specific incidence was highest (48.8 per cent) recorded in Jersey and Jersey cross calves. *E. coli* and Salmonella *spp.* were the predominant bacterial agents encountered during the screening of diarrhoeal samples. The *E. coli* isolates belonged to 60 different serogroups, out of which 5 serogroups were from EPEC (026, 055, 086, 0126, and 0158) and 2 from STEC (08 and 0131). Toxin gene profile of STEC by multiplex PCR revealed the presence of *stxl*, *stx2*, *eae* and *hlyA genes.* The *in vitro* relative response of *E.coli* and *Salmonella spp.* isolates to different antibacterials was studied. *E. coli*

was most resistant to Sulphadiazene and least resistant to ciprofloxacin whereas *Salmonella spp.* showed cent per cent resistance to ampicillin and cent percent susceptibility to enrofloxacin, ampicillin /cloxacillin, chloramphenicol, gentamicin, trimethoprim, ciprofloxacin and sulphamethiozole. Presence of multiple drug resistant strains in *E. coli* population of diarrhoeal calves was also observed. *In vitro* assay of herbals *Allium sativum Linn*. bulbs and *Azadirachta indica* leaves against enteropathogenic and shiga toxin producing *E. coli* strains showed antimicrobial activity at different concentrations. The parasitic examination of diarrhoeic calves revealed the presence of *Toxocara vitulorum* and *Strongyle* infestation in faeces of 13.6 per cents diarrhoeal calves.

- **Seroepidemiolngical investigation of some important infectious diseases- of small ruminants in Jammu region**

The sero-epidemiological study was carried out during the year 2007-08 to know the status of brucellosis, peste des petits ruminants, contagious caprine pleuropneumonia and blue tongue in the goats and sheep of Jammu region. A total of 200 sera samples comprising 139 goat and 61 sheep samples were collected from four districts of Jammu region namely Kathua, Samba, Jammu and Udhampur. The results of the investigation revealed an overall prevalence of brucellosis to be 5.0 per cent; 5.8 per cent in goats and 33 per cent in sheep. The prevalence was more in females (6.2 per cent) than males (3.5 per cent); in adults as compared to yearlings; in organized (14.6 per cent) than unorganized farms (2.5 per cent). The concordance (per cent value) between ELISA vs. RBPT, ELISA vs. STAT and RBPT Vs ELISA was 98.6, 98.6 and 100 per cent in goat while in case of sheep all three showed 100 per cent concordance. The c-ELISA performed for PPR revealed an overall seroprevalence of 41 per cent with 38.8 per cent and 45.9 per cent goat and sheep samples showing seropositivity, respectively. The overall prevalence of PPR was higher in males (41.4 percent) than in females (40.7 per cent); in 1-2 years (44.6 per cent) and less than 1 year (66.7 per cent) age group in goats and sheep respectively; in unorganized farms (42.7 per cent) than in organized farms (34.1 per cent). The overall prevalence of CCPP with SAT was 4 per cent with 5.0 per cent and 1.6 per cent goat and sheep samples showing seropositivity respectively. It was higher in females (5.3 per cent) than males (2.3 per cent); in <1 year (9.8 per cent) and > 2 years (2.4 per cent) age group in goats and sheep respectively; in unorganized (4.4 per cent) than organized farms (2.4 per cent). A concordance (per cent value) between SAT and IHA was recorded to be 98.56 per cent and 100 per cent in goat and sheep respectively. The indirect ELISA performed for blue tongue revealed an overall prevalence of 29.5 per cent with 37.4 per cent and 11.5 per cent goat and sheep samples showing seropositivity respectively.

The overall prevalence of blue tongue was higher in females (31.8 per cent) as compared to males (26.4 per cent); in > 2 years age group in both goats (38.1 per cent) and sheep (33.3 per cent); in organized (34.2 per cent) than unorganized farms (28.3 per cent).

- **Epidemiological studies and evaluation of oxyclozanide and rafoxanide against bovine paramphistomosis in Jammu district**

The epidemiological study on bovine paramphistomosis was carried out during the year 2007-08. Evaluation of oxyclozanide and rafoxanide was also done. A total of 3252 faecal samples and 1719 snails were collected from 8 blocks of Jammu district *viz*., R.S.Pura, Bishnah, Satwari, Marh, Akhnoor, Khor, Bhalwal and Dansal. Direct smear, sedimentation and sugar floatation methods were used to detect parasites in faecal samples. EPG was done by the Stoll's egg counting technique. The snails were dissected to identify the intramolluscan stages. Oxyclozanide @ 10 and 20 mg/kg and rafoxanide @ 7.5 and 10 mg/kg b wt were administered orally in groups A, B, C and D, respectively while group E acted as infected untreated control group. EPG was performed pre- (day 0) and post treatment (day 7, 14, 21, 28, 60, 90) to evaluate the drug efficacy.

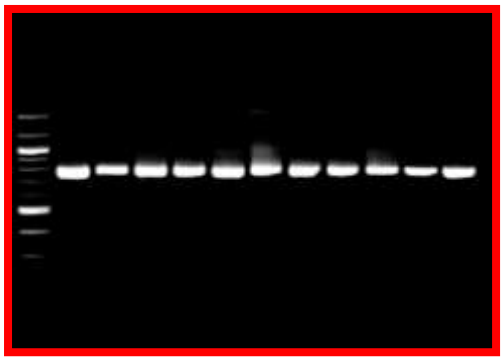
Overall prevalence of bovine paramphistomosis in Jammu district was 32.3 per cent with a non-significantly higher prevalence in buffaloes (33.8 per cent) as compared to cattle (30.8 per cent). The prevalence was highest in R.S. Pura (36.3 per cent) and lowest in Dansal (25.0 per cent) block. The overall mean EPG in bovines was 346.34±3.56. Sex wise analysis showed a higher prevalence in females (33.5 per cent) than males (22.7 per cent). Age wise analysis showed highest prevalence in 1-3 years age group (44.7 per cent) followed by >3 years age group (37.2 per cent), and lowest in bovines of less than 1 year age group (12.1 per cent).

Snails were identified as *Indoplanorbis exustus* and had highest prevalence in August (21.4 per cent), lowest in December (1.6 per cent) and nil in January and February. Overall 34.5 per cent snails were positive for *Cercariae pigmentata* and redia; with highest infection in July (44.2 per cent), lowest in December (7.1 per cent) and nil in March. The prevalence was highest in the monsoon (42.5 per cent) and lowest in winter (7.2 per cent). A positive correlation of disease prevalence with rainfall, minimum temperature and relative humidity was found. The efficacy of oxyclozanide was found to be greater than rafoxanide @ 10 mg/kg at 7, 14, 21, 28, 60 and 90 days post oxyclozanide treatment was 70.7, 82.4, 91.5, 100, 100 and 68.8 per cent, respectively. Oxyclozanide @ 20 mg/kg was 74.8, 84.5, 100, 100, 100 and 92.2 per cent effective at 7, 14, 21, 28, 60 and 90 day post treatment, respectively.

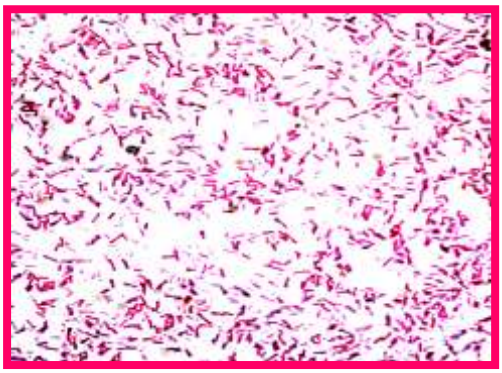
- **Footrot in sheep**

Jammu and Kashmir is an extensive sheep rearing region in which foot rot frequently affects the health as well as profitability of farmers. An extensive survey conducted by the division of Veterinary Microbiology and Immunology under the DBT funded project on foot rot during last three years covered 6529 sheep in different

Footrot lesions in hoof



A band of 783 base pairs representing 16S rRNA gene segment of *Dichelobacter nodosus*

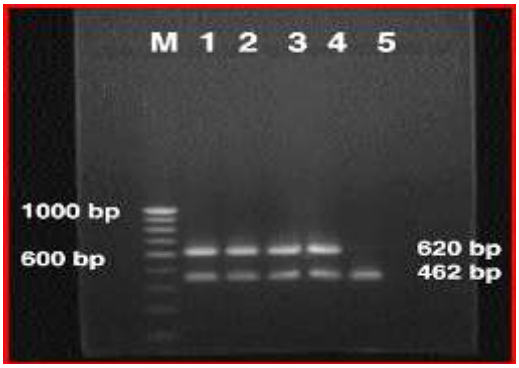


pleiomorphic Gram negative rods of *D. nodosus*

regions of Jammu and Kashmir including Poonch, Rajouri, Doda, Reasi, Kathua, Udhampur, Samba, Bhaderwah. A total of 1477 samples found positive on the basis of clinical symptoms were further screened by 16 S rRNA PCR assay, out of which 1402 were found positive with an amplicon size of 783 bp. Upon serotyping all 16 S rRNA PCR positive samples, 1102 (78.6 %) isolates were serotyped. Out of typeable samples the most **prevalent serotypes were Serotype'H' (231, 20.9 %) and Serotype 'B' (151, 13.7 per cent) while l**east prevalent was Serotype 'E' (88, 7.9 %). From the PCR positive sample isolation of the organisms were done on TASH agar which were characterized on the basis of colony morphology, gram staining and were further confirmed by colony touch PCR.

- **Pasteurellosis in cattle**

Outbreaks of Haemorrhagic septicaemia are often reported from Cattle and Buffalos in Jammu region. Swabs from *Pasteurellosis* suspected cases/apparently normal animals are subjected to species PCR assay for *P. multocida.* Samples showing amplification of ~460 bp

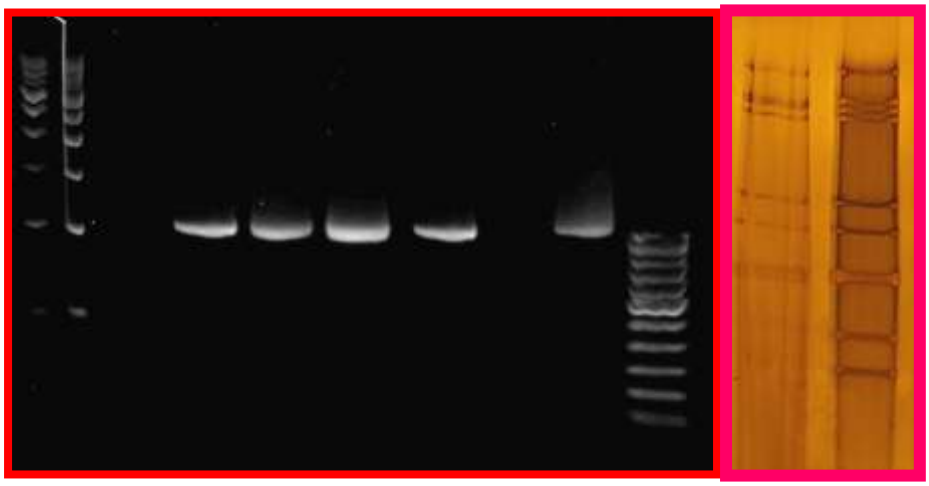


Pasteurella multocida species specific PCR (PM-PCR)

product are considered positive for P. *multocida.* An Outbreak reported by Animal Husbandry Deptt was confirmed by PCR in which *P. multocida* serotype B:2 was demonstrated.

- **Rotavirus in cattle calves**

Faecal samples from bovine calves and lambs were screened for the presence of group A rotavirus in the division of Microbiology using Latex agglutination test (LAT), Monoclonal Antibody based Enzyme Linked



1013 bp product specific for group A Rota virus (left) and RNA-PAGE for detection of rota virus (right)

Immunosorbent Assay (MAb ELISA), RNA Polyacrylamide Gel Electrophoresis (RNA PAGE) and Reverse Transcription-Polymerase Chain Reaction (RT PCR). Prevalence of group 'A' rotaviruses varied from 12.7 to 22.5 per cent in bovines and 4.1 to 9.3 per cent in ovines by various diagnostic tests. G6 was the most prevalent G type followed by G10 among both bovine rotavirus and ovine rotavirus in Jammu region. P [11] was the predominant P type with G6P [11] as the most prevalent strain in both bovine rotavirus and ovine rotavirus in Jammu region.

Veterinary Parasitology

Amphistomiasis is one of the important trematode infections of hills and plains of Jammu & Kashmir. To access the epidemiology intermediate host (*i.e.* Snail, *Indoplanorbis*, n=3889) and definitive host (ruminants, n=230) were examined. Snails were observed throughout the year except during winter months and highest snail positivity (50.8 %) for *Cercaria pigmentata* was observed during September month.

Cryptosporidium is regarded as an important pathogen causing diarrhoea in calves. In total 288 faecal samples (144 cow calves, 144 buffalo calves) was examined using modified Ziehl-Neelssen method. Studies revealed higher prevalence in cow calves (21.5 %) as compared to buffalo calves (11.0 %) and also showed higher prevalence in organized farms (21.52%) as compared to unorganized farms (10.4 %).

During the year, 210 dog faecal samples were examined. The percent infection in decreasing order was strongyles (20.9 %), taenid (9.5 %), ascarid (8.6 %), *Dipylidium*

caninum (5.7 %), trichurids (4.3 %), strongyloides (2.4 %), *Isospora* spp. oocysts (1.9 %), *Diphylobothrium latum* (1.9 %) and mixed infection (27.6 %). Studies suggest prophylactic measures in form of deworming should be adopted immediately by pet owners as well as government organizations.

During the year 268 freshly voided faecal pats of monkeys were examined. The percent infection in decreasing order for parasitic ova/cyst were strongyle (17.0 %), trichurid (7.9 %), coccidian oocysts (7.3 %), *Balantidium coli* (6.2 %), ascarid (5.4 %), *Giardia* spp. (4.4 %), strongyloides (3.3 %), *Entamoba histolytica* (1.5 %) and mixed infection (31.2 %). Public should be educated to adopt hygienic measures as majority of aforesaid eggs/cyst can cause diseases in human beings.

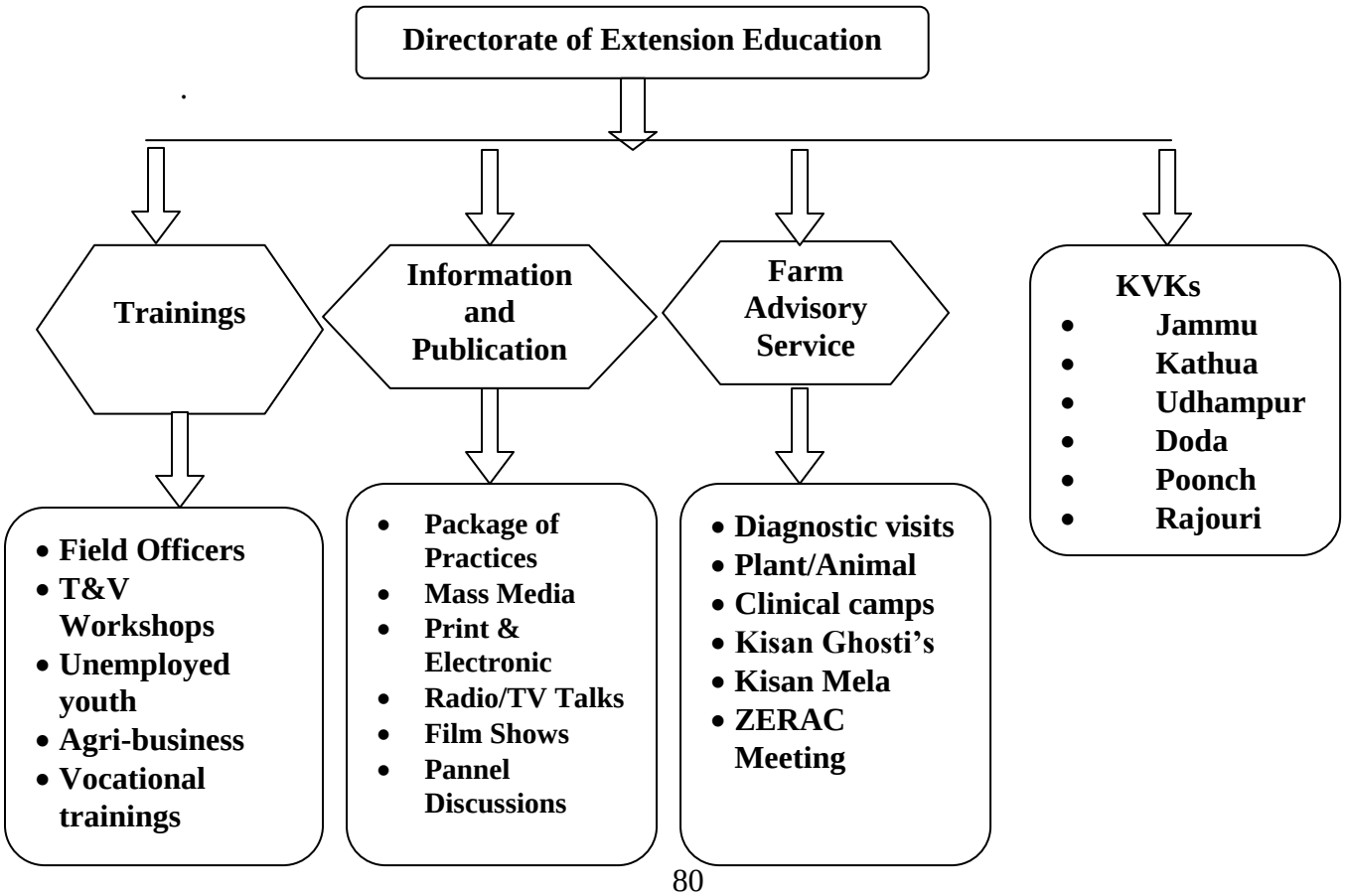
VETERINARY CLINICS and TEACHING HOSPITALS

Division has *standardized* the ultrasonographic technique for the diagnosis of gastro-intestinal diseases particularly recticulum and intestine both *in-vitro* and *in-vivo*.

4.3 EXTENSION EDUCATION

At the national level Extension Education has recently been realized to be one of the most important components for bringing desired improvements in agricultural production and productivity at the farmers level .Extension education is one of the most important mandates of the Sher-e- Kashmir University of Agricultural Sciences and technology of Jammu. The Directorate of Extension Education popularly known as the **"Field Extension Wing",** is taking care of the farm advisory services in the villages surrounding the headquarter campus of the university and at different districts through Krishi Vigyan Kendra. The responsibility for planning, organizing, conducting and coordinating the extension education activities of the university in the Jammu region of Jammu & Kashmir State lies with the Directorate of Extension Education. Its main aim is to transfer the well proven/tested technologies to the farmers, livestock owners, rural youth, field staff of State Govt. and other personnel engaged in developmental and professional activities in the fields of agriculture, animal husbandry, horticulture, home science and other allied areas through its well planned, skill-oriented and need based programmes. The Directorate acts as bridge between the research scientists and the farmers and other stakeholders to provide feed back. Therefore, the role of the Directorate is two fold, i.e., transfer of technologies from scientists to the ultimate users i.e. farmers through field functionaries and to find out the problems of the field to be passed on to various research divisions of Faculty of Agriculture, Faculty of Veterinary sciences & A.H.

Farm Science Services (FAS) is the major wing and field arm of the Directorate of Extension Education covering the entire Jammu Division through Krishi Vigyan Kendras (KVKs) located in various districts of Jammu Division. The scientists working in these KVKs have a direct contact with farmers and render the necessary advice about the crops and livestock production and protection, soil and water management, child care, family and farm resource management etc at their door steps. The functional setup of the Directorate has been oriented to face the traditional and new challenges emerging on day to day basis so that the farmers and the field functionaries are benefited.



The main responsibilities/functions of the Directorate of Extension Education are:

- To Plan and execute Extension Education activities of the University.
- To coordinate extension education activities among Divisions of two Faculties, Research Stations, Sub-Stations, KVKs etc of the University.
- To act as a strong liaison between university scientists and allied developmental department, national & international institutes and farming community for developing demand driven technologies.
- To timely transfer the innovative /proven technologies through KVKs.
- To supplement and complement the efforts of state development departments through elite / frontline/limited extension work.
    - Organizing training programmes for officers, farmers and un-employed /rural youth.
    - Organizing skilled demonstrations, on farm trials, exhibitions, fairs etc.
    - Communicating / updated farm information through package of practices, books, booklets, leaflets, folders, posters, bulletins, pamphlets and through print and electronic media**.**
    - Farm Advisory services.

OBJECTIVES AND BRIEF ACCOMPLISHMENTS OF KRISHI VIGYAN KENDRAS **(Farm Science Centers)**

These innovative science based institutions have been established mainly to impart vocational skill training to farmers and field level extension workers not only in agriculture and allied sectors but also in other income generating activities that may supplement the income of farm families. The training programmes are designed to impart the latest knowledge to the farmers through work experience by applying the principles of "**Teaching by Doing**" and "**Learning by Doing**". The effectiveness of KVK has further been enhanced by adding the activities related to on-farm testing and front line demonstrations on major agricultural technologies in order to make the training programmes of farmers location specific, need based and resource oriented. Presently, six Krishi Vigyan Kendras are working under the administrative control of Directorate of Extension Education. With the objectives of having a KVK in each district, the Govt. of India / Indian Council of Agricultural Research, New Delhi has already approved the establishment of KVKs in four newly created districts of Samba, Kishtwar, Ramban and Reasi subject to provision of the land by the host state.

1. KRISHI VIGYAN KENDRA, JAMMU

This KVK is the oldest one, sanctioned by ICAR in 1992. KVK, Jammu has identified six thrust areas through participatory rural appraisal and has adopted 13 villages of 6 blocks of Jammu district to conduct training programmes for farmers on

1. Cultivation of mushroom
2. Bee Keeping
3. Fruit preservation & canning
4. Milk preservation
5. Women & child development
6. Dairy farming

The KVK Jammu during the year 2008-09 has organized following on-campus / off-campus and sponsored training programmes and extension activities for farmers/farm women, rural youth and field functionaries:

FARMERS/FARM WOMEN

Thematic Area	No. of Courses	General participants			SC/ST participants			Grand Total
		M	F	Total	M	F	Total	
Agril. Extension	3	42	05	47	12	12	24	71
LPM	6	114	07	121	08	-	08	129
Crop Production	5	51	-	51	49	-	49	100
Home Science	4	3	43	46	02	33	35	81
Plant Protection	6	51	-	51	56	-	56	107
Soil fertility	5	50	14	64	36	-	36	100
Total	**29**	**311**	**69**	**380**	**163**	**45**	**208**	**588**


Farmers training programmes

RURAL YOUTHS (ON CAMPUS)

Thematic Areas	No. of Courses	General participants			SC/ST participants			Grand Total
		M	F	Total	M	F	Total	
Home science	6	4	113	117	-	55	55	172
Animal science	1	15	-	15	-	-	-	15
Plant Protection	1	9	-	9	7	-	7	16
Total→	8	28	113	141	7	55	62	203


Animal clinical Camp organized

Vocational training programmes

EXTENSION FUNCTIONARIES (ON CAMPUS)

Thematic Areas	No. of Courses	General participants			SC/ST participants			Grand Total
		M	F	Total	M	F	Total	
Soil Fertility	1	12	-	12	2	-	2	14
Agril. Extension	1	11	-	11	3	-	3	14
Plant Protection	1	12	-	12	-	-	-	12
Total→	3	35	-	35	5	-	5	40

Demonstrations given by scientists

Frontline demonstrations

EXTENSION ACTIVITIES UNDERTAKEN

S.No	Activities	No. of activities	No. of participants
1	Field days	2	367
2	Kissan Ghosthi	2	157
3	Film show	20	252
4	News paper coverage	8	-
5	Radio/TV talks	05	-
6	Celebration of Important days; World Water Day	1	158
	Total	**38**	**934**

Field days/Special days

SCIENTIFIC ADVISORY COMMITTEE MEETING OF KVK, JAMMU.

The 7th SAC meeting of KVK, Jammu was held on 29th January, 2009in the conference hall of KVK, Jammu at R.S. Pura under the chairmanship of Dr. B. Mishra, Hon'ble Vice Chancellor, SKUAST-J and was attended by Dr. A.K. Mehta, ADG(A.E) ICAR and Dr. K.S. Risam, Director Extension Education. The Hon'ble vice chancellor suggested for introduction of good/new varieties from the neighbouring states for testing them under local conditions and if found promising then may be disseminated among farmers to replace order varieties. He also stressed upon the adoption of farming system concept and training on clean milk production. The KVK, Jammu was complemented on the revenue generated by it and hoped that staff of KVK, Jammu will work with more vigor and Zeal to become a self sustainable unit in near future.

SAC meeting of KVK Jammu

4.3 (2) KRISHI VIGYAN KENDRA, RAJOURI

The Krishi Vigyan Kendra Rajouri was established in the year 2002 at Village Tandwal (about 2.5 km away from main town) on Jammu-Poonch National Highway with the objectives of assessing the agricultural and allied technologies, their refinement to suit the local conditions and their dissemination for enhancing the agricultural production and socio economic status of the farmers of the intermediate zone. The KVK during the period under report has organized on and off campus extension activities with the detail as under:

Farmers/ Farm women
On Campus:

Thematic Area	No. of Courses	Number of Participants						Grand Total
		General			SC/ST			
		M	F	Total	M	F	Total	
Agronomy	01	16	1	17	5	0	3	20
Home Science	01	0	15	15	0	03	3	18
LPM	01	8	1	9	2	0	2	11
Agril. Extension	01	7	6	13	7	0	7	20
Agroforestry	03	42	9	51	22	0	22	73
Plant Protection	02	25	9	25	25	0	25	50
Agril. Engineering	03	55	12	67	13	1	14	81
Total	11	153	53	197	74	4	76	273

Demonstrations being provided by the scientists/to the farmers/farm women

Off Campus:

Thematic Areas	No. of Course	Number of Participants						Grand Total
		General			SC/ST			
		M	F	Total	M	F	Total	
Agronomy	04	111	1	112	62	0	62	174
Agril. Extension	03	24	5	29	37	5	42	71
Agroforestry	03	54	1	55	10	0	10	65
Plant Protection	04	57	1	58	60	7	67	125
Agril. Engineering	03	29	21	31	36	1	37	68
Total	17	275	29	285	205	13	218	503

In-service training programme

Sowing of OFT's at Farmers' Field

Rural Youths:

Thematic Area	No. of Courses	Number of Participants						Grand Total
		General			SC/ST			
		M	F	Total	M	F	Total	
Tie & Dye	1	0	20	20	0	2	2	22
Total	1			20			2	22

SCIENTIFIC ADVISORY COMMITTEE MEETING, KVK, RAJOURI.

The Second Scientific Advisory committee (SAC) meeting for Krishi Vigyan Kendra, Rajouri was held on 28th November, 2008 in Conference Hall of P.W.D Dak Bungalow, Rajouri. Due to pre-occupation of Hon'ble Vice Chancellor, Dr. K S Risam Director Extension Education, SKUAST-J chaired the meeting. The DEE emphasized that the expertise of the allied departments should be used for conducting the training programmes. He emphasized the importance of KVK Rajouri to cater to the needs of the various agro climatic conditions existing in the district Rajouri.

4.3 (3) KVK, UDHAMPUR, (REASI)

The KVK Udhampur has been established in the year 2005 at village Tanda (Reasi).The main aim of KVK is to reduce time lag between generation of location specific technology at the research institution and its dissemination at the doorstep of the farmers for enhancing productivity and income from the agriculture and allied sectors on a sustainable basis. The KVK during the year 2008-09 has conducted the following training programmes for the practicing Farmers/Farm women/rural youth and extension functionaries of the allied departments in the district.

FARMERS/ FARMWOMEN TRAINING PROGRAMME
ON-CAMPUS

Areas of practicing Farmers/Farm women	No. of Courses	Number of Participants						Grand total
		General			SC/ST			
		M	F	Total	M	F	Total	
Horticulture	1	18	-	18	12	-	12	30

OFF-CAMPUS

Areas of practicing Farmers/Farm women	No. of Courses	Number of Participants						Grand total
		General			SC/ST			
		M	F	Total	M	F	Total	
Agronomy/soilscience	2	26	-	26	17	-	17	43
Agroforestry	3	36	-	36	20	-	20	56
Extension Education	3	39	-	39	25	7	32	71
Horticulture	5	71	-	71	25	2	27	98
Home Science	2	5	27	32	-	3	3	35
Plant Protection	1	18	-	18	1	-	1	19
Plant Breeding & Genetics	6	115	1	116	33	-	33	149

Training programme for farm women

Scientist's visit to farmer's field

RURAL YOUTH (ON CAMPUS COURSES)

Areas of practicing Farmers/Farm women	No. of Courses	Number of Participants						Grand total
		General			SC/ST			
		M	F	Total	M	F	Total	
Home science	2	-	11	11	-	33	33	44
Horticulture	2	25	-	25	13		13	38
Total								

EXTENSION FUNCTIONARIES (ON CAMPUS COURSES)

Areas of practicing Farmers/Farm women	No. of Courses	Number of Participants						Grand total
		General			SC/ST			
		M	F	Total	M	F	Total	
Agroforestry	1	21	1	22				22
Extension Education	1	20	1	21				21
Horticulture	1	14	1	15				15
Total		**55**	**3**	**58**				**58**

Vocational training programme

In-service training programme

EXTENSION ACTIVITIES UNDERTAKEN:

Activities	No.	Number of Participants						Grand total	Sponsoring Agencies
		General			SC/ST				
		M	F	Total	M	F	Total		
Kisan Goshthies	2	24	-	24	24	-	24	48	
Field Days	3	43	-	43	50	-	50	93	

F.L.D. On Maize

Kisan Gosthi

SCIENTIFIC ADVISORY COMMITTEE MEETING OF KVK, REASI

The first scientific advisory committee (SAC) meeting of Krishi Vigyan Kendra, Udhampur (Reasi) was held on December 02, 2008. Dr. K. S. Risam, Director of Extension Education, SKUAST-J chaired the meeting due to pre-occupation of Hon'ble Vice Chancellor, SKUAST-J. The meeting was also attended by Dr. N. A. Sudan, Director of Research and other members of the advisory committee from various line departments like Agriculture, Horticulture, Forest, Soil Conservation, Social Forestry, Animal Husbandry, and other allied departments like Social Welfare, Small Scale Industries as well as progressive farmers from Udhampur and Reasi districts. The Director Ext. Education asked KVK to provide the methodology for formation of SHG's and help the farmers in registering their society with the cooperative department. They can also take the help of district administration for formation of such cooperatives.

SAC Meeting being chaired by Director Extension Education at KVK Reasi

4.3(4) KRISHI VIGYAN KENDRA, POONCH

The Krishi Vigyan Kendra for the district Poonch has been established at Maize Breeding Research Sub station, Poonch. The KVK is located in a border hilly district of Jammu. The KVK has organized various training programmes and other extension activities during the year 2008-09. The details are as under:

ON - CAMPUS/ OFF CAMPUS TRAININGS

Thematic area	No.	Number of Participants						
		General			SC/ST			Grand Total
		M	F	Total	M	F	Total	
Crop Production	04	42	00	42	67	00	67	109
Horticulture	06	40	05	45	52	04	56	101
Plant protection	04	41	02	43	46	00	46	89
Extension Education	05	25	01	26	80	05	85	111
Agroforestry	04	52	02	54	45	00	45	99
Economics	04	21	04	25	48	12	60	85
Total	**27**	**221**	**14**	**235**	**338**	**21**	**359**	**594**

RURAL YOUTHS: ON –CAMPUS

Thematic area	No.	Number of Participants						
		General			SC/ST			Grand Total
		M	F	Total	M	F	Total	
Seed production	03	20	00	20	12	00	12	32

Planting material production	03	21	00	21	22	00	22	43
Nursery Management of Horticulture crops	02	13	00	13	15	00	15	28
TOTAL	**08**	**54**	**00**	**54**	**49**	**00**	**49**	**103**

EXTENSION FUNCTIONARIES (ON-CAMPUS)

Thematic area	**No.**	**Number of Participants**						
		General			**SC/ST**			**Grand Total**
		M	**F**	**Total**	**M**	**F**	**Total**	
Integrated watershed management	01	08	00	08	05	00	05	13
Economics of Watershed	01	07	00	07	04	00	04	11
Important diseases and pests in vegetables and their management	01	08	00	08	04	00	04	12
Capacity building of extension personnel's	01	08	00	08	05	00	05	13
Crop production technology for cereals and pulses	01	07	00	07	04	00	04	11
Indian agriculture concerns under WTO	01	08	00	08	05	00	05	13
Potential of medicinal plants as a enterprise in Poonch	01	08	00	08	05	00	05	13
Insect pest & Disease management in Maize	01	08	00	08	05	00	05	13
Insect pest & Disease management in Paddy	01	09	00	09	06	00	06	15

EXTENSION ACTIVITIES UNDERTAKEN:

Activities	**No.**	**Number of Participants**						
		General		SC/ST		Extn. Functionaries		Total
		M	F	M	F	M	F	
Field Day	05	47	08	42	04	-	-	101
Kisan Ghosthi	04	54	05	78	06	06	-	149
Workshop	12	-	-	-	-	122	-	122
Group meetings	18	-	-	-	-	165	-	165
Lectures delivered as resource persons	32	157	13	215	17	-	-	402
Newspaper coverage	10	-	-	-	-	-	-	0
Radio talks	20	-	-	-	-	57	-	57
Scientific visit to farmers field	28	16	-	35	-	-	-	51
Farmers visit to KVK	22	28	-	32	-	-	-	60
Diagnostic visits	11	-	-	-	-	42	-	42

SCIENTIFIC ADVISORY COMMITTEE MEETING KVK, POONCH

The First Scientific Advisory Committee (SAC) meeting of Krishi Vigyan Kendra, Poonch was held on 27th November 2008, in the Conference Hall of Dak Bunglow Poonch. Due to preoccupation of

Hon'ble Vice Chancellor, SKUAST-J, Dr. K.S. Risam, the Director Extension Education chaired the meeting. In his address, Dr. Risam described the need for diversified farming including apiculture, horticulture, mushroom, animal husbandry in addition to cereal and pulse production for enhancing the income of the farmers. He informed that at present the policy planners lay more emphasis on bottom up approach in technology development and dissemination. He advised the KVK staff to identify training needs of the area. He also stressed for creating awareness about the superior varieties and following good package of practices for higher production/ productivity. He also requested for better coordination of the KVK Staff with the developmental departments. He informed that the KVK is quite young and needs support from the line departments for extending their activities for benefiting large number of farmers.

Farmers Training

4.3 (5) KRISHI VIGYAN KENDRA, KATHUA

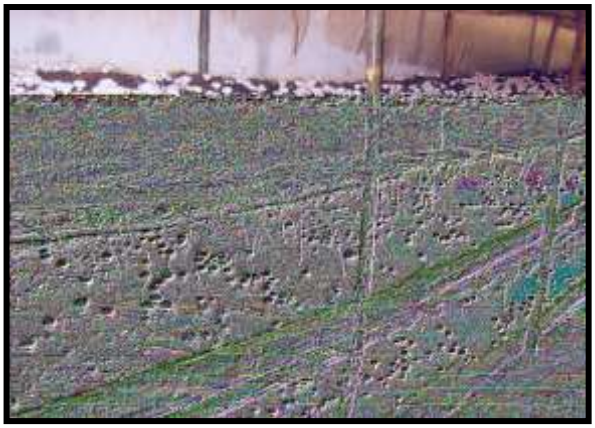
The Krishi Vigyan Kendra for the district Kathua was sanctioned by ICAR on 7th January 2008 and has been established at Seed Multiplication Farm, Rajhani Kathua with the aim to assess, refine and disseminate the technologies generated for enhancing the food production and farm income of the catchment area. The KVK during the year 2008-09 has conducted the following training programmes for the practicing Farmers/Farm women/rural youth and extension functionaries of the allied departments in the district.

FARMERS/FARM WOMEN TRAININGS

S. No.	Thematic area	No. of Courses	Number of Participants						Grand Total
			General			SC/ST			
			M	F	Total	M	F	Total	
1	Integrated Crop Management	5	78	14	92	8	1	9	101
2	Soil Health and Fertility management	4	61	15	76	3	3	6	82
3	Plant Protection	4	63	-	63	4	-	4	67
4	Extension Education	2	28	16	44	1	2	3	47
5	Vegetable crops	2	48	-	48	12	1	13	61
	Total	**17**	**278**	**45**	**323**	**28**	**7**	**35**	**358**

RURAL YOUTHS (ON CAMPUS)

S. No.	Thematic area	No. of Courses	Number of Participants						Grand Total
			General			SC/ST			
			M	F	Total	M	F	Total	
1.	Mushroom cultivation	2	11	-	11	3	-	3	14
	Total	**2**	**11**	**-**	**11**	**3**	**-**	**3**	**14**



Training on Compost Preparation for Mushroom

Flush of White Button Mushroom

EXTENSION FUNCTIONARIES (ON CAMPUS)

S.No.	Areas	No. of Courses	Participants (No.)						Grand Total
			General			SC/ST			
			M	F	Total	M	F	Total	
1.	Plant Protection	2	49	1	50	5	-	5	55
2.	Crop Production	1	12	1	13	1	-	1	14
3.	Participatory Rural appraisal	1	13	-	13	-	-	-	13
	Total	**4**	**74**	**2**	**76**	**6**	**-**	**6**	**82**

Sponsored and Collaborative Training

S.No.	Area	Clientele	No. of Courses	Participant		Total
				M	F	
1.	Scaling up of Water Productivity in Agriculture for Livelihood through teaching cum Demonstration	Extension Functionaries	01	35	3	38
2.	Scaling up of Water Productivity in Agriculture for Livelihood through teaching cum Demonstration	Farmer/ Farm women	02	116	40	156

Farmers sensitized on use of low cost material for Mushroom cultivation

EXTENSION ACTIVITIES UNDERTAKEN

S.No.	Activities	No. of activities	No. of participants
1.	Field days	1	68
2.	News paper coverage	10	-
3.	Radio-talks	3	-
4.	TV talks	9	-
5.	Film show	3	-
5.	Mushroom Day	1	50
6.	Popular articles	1	-
7.	Diagnostic visit	5	-
8.	Farmers visit to KVK		Regular
9.	Seed Treatment Campaign	1	50

Field day on wheat (RCT) at Chambe da bagh(Kathua)

SCIENTIFIC ADVISORY COMMITTEE MEETING KVK, KATHUA.

The first Scientific Advisory Committee meeting of Krishi Vigyan Kendra, Kathua was held on December 01, 2008 at KVK, Kathua under the chairmanship of Dr. B. Mishra, Hon'ble Vice-Chancellor, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu. The meeting was also attended by Dr. K.S. Risam (Director Extension Education, SKUAST-Jammu), and other members of Scientific Advisory Committee including progressive farmers and farm women.

Dr. B. Mishra, Hon'ble Vice-Chancellor affirmed that agriculture continues to play a vital role in our economy and at present 68% of our population depends on agriculture for its sustenance. He also stressed on increasing production and productivity of rice and wheat in India so as to feed 17% of the world's population on meager 2.3 % of land resources. He emphasized on the role of KVK's in rural development and stressed for further increasing their activities for the overall benefit of rural people of Kathua district.

He advised the scientists of KVK to disseminate the latest technologies available through research on farmer's field for their speedy adoption. He also emphasized about scope of new vegetables, fruits, medicinal and aromatic plants and mushroom in Jammu.

4.3 (6) Krishi Vigyan Kendra Doda

KVK for district Doda has been established at Village Gwari, Bhaderwah. The main aim of KVK is to generate and assess location specific technologies for transfer to the farmers of temperate hilly regions of Jammu division.

FARMERS FARM WOMEN

Areas	No. of courses	Number of Participants						Grand Total
		General			SC/ST			
		M	F	Total	M	F	Total	
Agril. Extension	05	63	10	73	03	07	10	83

LPM	07	90	14	104	16	05	21	125
Crop Production	07	71	-	71	46	-	46	117
Home Science	06	-	66	66	-	27	27	93
Horticulture	04	44	-	44	20	-	20	64
Plant protection	03	60	-	60	30	-	30	90
Agro Forestry	09	112	-	112	49	-	49	161
Total	**41**	**440**	**90**	**530**	**164**	**39**	**203**	**733**

EXTENSION FUNCTIONARIES

Areas	**No. of Courses**	**Number of Participants**						**Grand Total**
		General			**SC/ST**			
		M	**F**	**Total**	**M**	**F**	**Total**	
Agril. Extension	01	16	-	16	03	-	03	19
LPM	02	23	-	23	-	-	-	23
Agro-forestry	03	30	-	30	05	-	05	35
Horticulture	01	15	-	15	02	-	02	17
Plant protection	03	46	-	46	02	-	02	48
Total	**10**	**130**	**-**	**130**	**12**	**-**	**12**	**142**

Extension Activities undertaken

S.No.	**Crop**	**No.**	**No. of Participants**
1	Field days	08	96
2	Environment Day	01	87
3	Kissan Gosthi	01	35
4	Forestry awareness day	01	72
5	Van Mahotsava	01	20
6	World Water Day	01	55
7	Veterinary Clinical camp	01	170
8	Ex-trainees Samelan	01	102
9	World Food day	01	200

Campaigns launched

S.No.	**Title**	**Duration (Days)**	**Participants**
1	Diseases and Pests Management in Vegetable Crops	05	77
2	Training and pruning of fruit trees	05	74
3	Cut worm management	05	87
4	Management of Diseases & Pests of apple.	05	77
5	Management of chilli wilt	05	92
6	Seed treatment	05	72

Training Programme **View of FLD on Moong**

MAJOR EXTENSION EDUCATION ACTIVITIES

A) FRONT LINE DEMONSTRATIONS UNDER KVKs

The KVKs have also been entrusted with the responsibility of laying out Front Line Demonstrations of different crops during both Kharif and Rabi seasons at farmers field to evoke the interest of the farming community for adoption of new innovative technologies and breaking the inhibition barriers. During the period the under report following cropwise Front Line Demonstrations were laid by respective KVKs in their districts.

Crop	**District wise Distribution of KVK FLD's** (in hactares)						
	Jammu	**Rajouri**	**Doda**	**Reasi**	**Poonch**	**Kathua**	**Total**
Maize	4.0 (20)	6.0 (30)	1.0 (5)	10.0 (35)	4.0 (16)	6.0 (15)	**31.0 (121)**
Paddy	4.0 (18)	0.2 (2)	-	-	4.0 (11)		**8.2 (31)**
Okra	-	-	-	-	-	0.5 (2)	**0.5 (2)**
Wheat	8.0 (21)	6.0 (30)	-	11.0 (55)	4.0 (10)	9.0 (15)	**34 .0 (131)**
Berseem	-	-	2.0 (10)	2.0 (21)	-	2.0 (4)	**6.0 (35)**
Oats	-	-	5.0 (25)	2.0 (17)	-	-	**7.0 (42)**
Mustard	-	5.0 (25)	5.0 (25)	4.0 (22)	-	-	**14.0 (72)**
Gobi sarson	10.0 (39)	5.0 (24)	2.0 (10)		4.0 (14)		**21.0 (87)**
Gram	4.0 (18)						**4.0 (18)**
Toria	8.0 (25)		-		2.0 (8)		**10.0 (33)**
Moong	-	2.0 (10)	1.0 (5)	10.0 (37)	-	-	**13.0 (52)**
Mash	2.0 (14)	2.0 (10)	2 .0 (6)	-	-	-	**6.0 (30)**
Rajmash	-	-	1.0 (5)	-	2.0 (6)	-	**3.0 (11)**
Soyabean	-	-	1.0	-	-	-	**1.0**

			(4)				**(4)**
Sun flower	-	-	2.0 (9)	-	-	-	**2.0 (9)**
Linseed	-	-	1.0 (5)	-	-	-	**1.0 (5)**
Fodder (Sorghur)	1 .0 (20)						**1.0 (20)**

(FIGURES IN PARENTHESIS INDICATE THE NUMBER OF BENEFECIARIES)

B) Activities undertaken by the Directorate of Extension Education

a) Model training course on Refinement and Promotion of year round cultivation of mushroom for self-employment

Eight days Model training course was organized at Faculty of Agriculture, main campus Chatha from 17th – 24th November 2008. The training programme was sponsored by Directorate of Extension, Ministry of Agriculture & Cooperation, Govt of India, New Delhi. Dr. B. Mishra Hon'ble Vice-chancellor, SKUAST –Jammu inaugurated the training programme in which 19 participants from different states were selected. During the training period, the resource persons of National and International repute imparted hands on training to all participants.

Dr. B. Mishra Hon'ble Vice chancellor's interaction with participants during Inaugural session of Model Training course

b) Demonstration and on Spot Training of System of Rice Intensification

Farmers training cum sensitization workshop on use of System of Rice intensification supported by ICRISAT under the World wide Fund Scheme was organized on 6th of November 2008 at Krishi Vigyan Kendra Jammu to promote SRI technique among the farmers of this region.

c) Training-cum-Workshop on Organic farmings for KVKs of Jammu division

Directorate of Extension Education in collaboration with division of Agronomy organized one day training cum workshop for the staff of all KVK's functioning under the administrative control of SKUAST-Jammu on 24th March209 at Division of Agronomy ,Faculty of Agriculture Chatha.

d) Training-cum-Workshop on Economic and statistical analysis of Front line Demonstrations

The Directorate of extension in collaboration with division of Agricultural Economics & Statistics organized one day orientation programme for Programme coordinators and Subject Matter Specialists of all KVK's on 29th March 2009 at Faculty of Agriculture Chatha. During the programme

special emphasis was laid on the statistical interpretation of the data of Front Line demonstrations being laid by the KVK's in their allocated district.

C) ORGANIZATION OF WORKSHOPS

i) ZONAL RESEARCH AND EXTENSION ADVISORYCOMMITTEE –RABI 2008

The zonal research and extension advisory committee meeting for Rabi 2008 for all districts of Jammu division was organized on15th of December 2008 at main campus of university ie.Chatha. Dr.B. Mishra Hon'ble Vice-chancellor SKUAST-Jammu chaired the meeting. The Directors of Developmental Departments, Directors and Deans from SKUAST-J, officers of line departments and scientist from university had day long deliberations on the agenda items.

Dr. B. Mishra Hon'ble Vice chancellor chairing the deliberations of ZREAC-Rabi 2008

ii) T&V MONTHLY WORKSHOPS

During the year 2008 (January— December) 54 workshops at the 6 district headquarters of Jammu Division were organized for the field functionaries of Agriculture & Horticulture Department. However for the month of June, July & August the scheduled meetings could not be conducted on account of disturbed conditions in Jammu region

iii) STATE LEVEL WORKSHOP OF KRISHI VIGYAN KENDRAS

The State level workshop for KVK's of Jammu Division was organized on 30th March 2009 at conference hall of SKUAST –J. Dr. K.S .Risam, Director Extension Education Chaired the workshop. During the workshop the action plan 2009 implemented by the KVK's was reviewed and future strategies keeping in view the resources and constraints were chalked out for each KVK**.**

Dr. K.S. Risam DEE, SKUAST-J chairing the state level workshop of KVK's with Deans from Faculty of Agriculture & Faculty of Veterinary Sciences& Animal Husbandry

4.4 SYMPOSIA/CONFERENCES/TRAININGS/WORKSHOPS ETC.

ORGANIZED BY THE UNIVERSITY (2008-09)

Division	Particulars of the Programme	Beneficiaries	Date/Period	Participants
Fruit Science	Growing of temperate fruits in Jammu sub- tropics	Farmers	17-02- 2009	65
	Fruit culture in Jammu region	Farmers	5-03-2009	66
	Fruit growing in Jammu region with special reference to peach and strawberry	Farmers	14-03-2009	130
	Fruit plant cultivation in Jammu sub- tropics on	Farmers	17-03-2009	25
Agroforestry	Farmer's Training Programme on Cultivation Practices of Kalazeera at Atholi (Paddar)	Farmers	5-11-2008	25
	Farmer's Training Programme on Cultivation Practices of Kalazeera at Karthai (Paddar)	Farmers	23-03- 2009	55
Agronomy	Training programme on "Farmers awareness Programme on Climate Change"	Farmers	05-11-2008	120
	Conservation farming through efficient use of resources to sustain livelihood of dryland farmers of North West Himalayas	Teachers	16-01-2009 to 05-02-2009	21
	Integrated weed management strategies for marigold and gladiolus crops	Farmers	2-02-2009	42
	Training programme for Basic Animal Health Workers in Collaboration with F.V.Sc, SKUAST-J under NAIP	Basic Health Workers	19-01-2009 to 2-02-2009	18
	Training on Integrated Weed Mgt. Vegetable and Flower under HTMM Project	Farmers	5-03-2009	74
	Training on Efficient management for Higher productivity of crops	Farmers	5-03-2009	40
	Vermicompost technique demonstrated at Chatha under HTMM scheme.	Farmers	18-03-2009	22
	Training on Organic Farming	Scientific staff of KVK'S	24-03-2009	15
Post Harvest Technology	Preservation and processing of papaya at Raya	Farm women, unemployed youth	20-03-2009	56

	Value addition of tomato at Rajpura camp, Jammu	Farm women, unemployed youth	24-03-2009	53
	Processing of mushroom, strawberry and citrus, Udheywalla	Farm women, unemployed youth and college students	25 -03-2009	81
Soil Science & Agricultural Chemistry	Soil and Plant diagnostics and Integrated nutrient management in vegetable crops.		15-01-2009	19
			26-03-2009	19
Water Management Research Centre	14 days trainers training programme on Scaling up of water productivity in Agriculture for livelihood through teaching cum demonstration	Farmers	16-02-2009 to 01-03-2009	38
		Farmers	08-03-2009 to 15-03-2009 19-03-2009 to 25-03-2009	76 80
Vegetable Science & Floriculture	Training on marigold cultivation organized at village Jagti Nagrota block	Women and farmers	30-4-2008	85
	Training on quality seed production of vegetables organized at Sauhanjana Marh block	Farmers	11-9-2008	60
	Training on quality seed production of vegetables organized at Gajansoo Marh block	Farmers	25-9-2008	85
	Winter school on technologies for quality seed production of vegetable crops organized at SKUAST-J, Chatha	Scientists	08-12-2008 to 28-12-2008	16
	Vegetable day cum awareness programme on quality seed production of vegetable organized at SKUAST-J, Chatha	Progressive farmers and entrepreneurs	2-3-2009	120
	Scientific cultivation and seed production of musk-melon organized at Makwal	Farmers	14-3-2009	20
Plant Pathology	Model training course on "Refinement and promotion of year round cultivation of mushroom for self-employment" in collaboration with Directorate of Extension, Deptt. of Agri. & Co-operation, Ministry of Agri,	Officers of State Ag./Hort. & alien departments of different states of country	17-11-08 to 24-11-08	19

	Govt. of India, New Delhi, and Directorate of Extension Education, SKUAST-J			
	Biological control of powdery mildew of ber	Farmers (District Samba)	24-03-09 to 30-03-09	57
	IDM in solanaceous vegetables	Farmers (District Doda)	22-03-09	60
	Promotion of year round cultivation of mushrooms	Farmers (District Doda)	18-3-09 to 20-3-09	55
	IP & NM in gladiolus	Farmers	19-03-09	24
	Organic cultivation of vegetables.	Farmers	20-03-09	25
	Spawn production of edible mushroom	Farmers	06-11-08 16-12-08 24-03-09	53
	Uses of bio-pesticides in Ag. & Hort. Crops	Farmers (District Kishtwar & Akhnoor)	21-03-09 to 24-03-09	105
	Mushroom cultivation for income generation in rural areas to uplift rural economy	Farmers of (District Udhampur)	22-03-09	30

Dr. B. Mishra, Vice-Chancellor, SKUAST-J enlighting the inaugural lamp and delivering the key address to the participants of winter school organized by Division of Agronomy.

Experts Intracting With Farmers during trainign on"Scaling up Of Water Productivity "at village Uttari (Barwal) Kathua

Practical demonstration on Income Generating Units being Given to Farmers and Farm women during Tr... "caling up Of Water Productivity "at village Chainpura (Rajbagh) Kathua.

Horticulture produce

Training Programme on value addition of

Demonstration of an IPM module in cole crops to the farmers field

Scientist Imparting Beekeeping training to farmers


Mushroom training programme

Faculty of Veterinary Sciences & Animal Husbandry

Division	Particulars of the Programme	Beneficiaries	Date/Period	Participants
Veterinary Microbiology and Immunology	Overview of equine infectious diseases in India" by Dr. Baldev Gulati Senior Scientist	National Research Centre on Equines, Hisar	21-01- 2009	
Veterinary Parasitology	"Empowerment of rural women through backyard poultry farming in Jammu region"	Women farmers	17-2-2009 to 18-02-2009	40
			19-03-2009 to 20-03-2009	20
	Training programme on ultrasonography and radiography for the veterinarians of Animal Husbandry Deptt.	Veterinarians of Animal Husbandry Deptt.	1-04-2008 to 7-04-2008	05
	Training programme for Dr. Suman Koul, C.P. Kathua	Dr. Suman Koul	28-01-2009 to 6-02-2009	01
	Ten days short term training course for five ITBP (Para Vet.) personnel	ITBP (Para Vet.) personnel	16-02-2009 to 25-02-2009	05

4.5 Awards and Recognition

S.No.	Name & Designation	Award
1	Dr. Anil Sharma, Jr. Scientist (Soil-Science) DLRSS, Dhiansar	National Team Leader of maize-based production system by the Project Coordinator, All India Coordinated Research Project for Dryland Agriculture, CRIDA, Hyderabad
2	Dr. Archana Pathak, Associate Prof. (Anatomy and Histology) FVSc, R.S. Pura	Certificate of Appreciation in Silver Jubilee Celebrations of XXIII Annual convention of IAVA held at CCSHAV, Hisar from Nov, 5-7, 2008
		Dr. Md. Hafeezuddin Silver Jubilee Medal for Gross Anatomy in XXIII Annual Convention of IAVA held at CCSHAV, Hisar from Nov, 5-7, 2008.
3	Dr. S. K. Gupta, Professor (Vety. Clinical Medicine) FVSc, R.S. Pura	Honoured by NAVS (National Academy of Veterinary Sciences), New Delhi by Membership during Annual Convocation of NAVS at R.S.Pura Campus of SKUAST-J on 16-05-2008
4	Dr. Vinod Gupta SMS KVK, Jammu	Best Extension Professional Award by Green Cross Society in an International Seminar on WTO held at Agra from February 13-14, 2009
5	Dr. Vinod Gupta SMS KVK, Jammu	Best Paper Presentation Award by Green Cross Society in an International Seminar on WTO held at Agra from February 13-14, 2009
6	Dr. Rakesh Nanda, Programme Coordinator KVK, Jammu	Best Paper Presentation Award by Society of Extension Education in 5th National Extension Education Congress held at Kanpur from March 05-07, 2009
7	Dr. Arvind Kumar Isher, SMS KVK, Poonch	Certificate of Appreciation for presenting paper entitled, "Impact of Global warming on the incidence and management of insect pest in agriculture" in National Conference on applied Entomology organized at MPUAT, Udaipur held from March 5-7, 2009

4.6 PUBLICATION ACTIVITIES

UNIVERSITY PUBLICATIONS

S. No.	Directorate	Publication
1	Research	Journal of Research, Vol-7 (1 & 2)
2.	Research	University's Research Highlights (2004-2008)
3.	Research	University Annual Report 2007-08
4.	Research	Farm Health Card

List of Research Publication (2008-09)

Abrol, D. P., Shankar, U. and Sharma, D. 2008. Discovery of lac insects (*Laccifer lacca*) opens new era of integrated rural development in Jammu. *Green Farming*, **1**: 49-50.

Agrawal, R., Yadav, A., Katoch, R., Singh, R. and Mohanty, T.R. 2008. Efficacy of livamisole against Ascaris suum infection in pigs. *Journal of Veterinary Parasitology*, **22**: 87-88.

Agarwal, S., Ahmed, F.A., Kumar, S. and Kumar, S. 2008. Estrous detection: Recent concepts and technologies. *The North-East Veterinarian*, **2**: 8-11.

Andrabi, M., Vaid, A. and Razdan, V.K. 2008. Occurrence of chickpea wilts complex and its causal agents in Jammu. *Journal of Research, SKUAST*-J **7**: 111-117.

Bakshi, P., Masoodi, F. A. and Kour, K. 2008. Effect of packaging and intermittent warming on post harvest disorders of peach. *Environment and Ecology*, **26**: 195-98.

Bali, R. K., Koul, A. and Ram, K. 2008. Evaluation of some low cost materials as silkworm bed disinfectant. *Journal of Research*, SKUAST-J **7**: 118-121.

Bali, R. K., Koul, A. and Ram, K. 2008. Feasibility of sericulture in subtropical and mid zones of J&K. *Environment and Ecology*, **26**:1132-1134.

Barman, K., Konwar, D., Sharma, R.K., Kumar, R. and Kumar, V. 2008. Scientific management- a road to profitable dairy farming. *Indian Dairyman*, **60**: 68-73.

Bhagat, R. M., Khajuria, M. K., Shankar, U., Monobrullah, Md. and Kaul, V. 2008. Efficacy of bio-pesticides and insecticides in controlling maize cutworm in Jammu. *Journal of Biological Control*, **22**: 99-106.

Bhardwaj, H.R. and Peshin, P.K. 2008. Blood and rumen fluid histamine status in water buffaloes *(Bubalus bubalis)* suffering from traumatic reticuloperitanictis and its clinical management. *Indian Journal of Veterinary Surgery*, **28**: 85-89.

Chauhan, V.B., Singh, V.B., Singh, P.N. and Singh, R.B. 2008. Effect of media and temperature on growth of *Aspergillus fischeri* a biocontrol agent. *Annual of Plant Protection Sciences*, **16**: 249-250.

Chesti, M.H and Ali, T. 2008. Integrated phosphorus management in green gram under temperate conditions of Kashmir. *Indian Journal of Agricultural Science,* **78**: 473-475.

Chhabra, R., Dutta, T.K., Bhat, M.A. and Taku, A.K. 2008. ELISA Based Detection of Antibody in Haemorrhagic Septicaemia Vaccinated Animals in Jammu Region. *India Journal of Immunopathology*, **10**: 124-126.

Chopra, S., Sharma, J.P. and Kumar, K. 2008. Influence of integrated nutrient management on growth, yield and quality of vegetable pea. *Journal of Plant Science Research,* **24**: 199-202.

Das, A.K. and Majumder, N.K. 2008. Heterogeneity of Glucose-6–Phosphate Dehydrogenase (G-6-PD) enzymes in Indian buffaloes. *Buffalo Bulletin,* **27**: 181-184.

Das, A.K. and Majumder, N.K. 2008. Status of reduced glutathione (GSH) in Indian breeds of buffaloes. *Buffalo Bulletin,* **27**: 212-214.

Das, A.K., Sharma, D. and Kumar, N. 2008. Buffalo genetic resources in India and their conservation. *Buffalo Bulletin,* **27**: 265-268.

Dhar, R. and Gupta, N.K. 2008. Contribution of organic material to nitrogen economy in rice production. *Environment and Ecology*, **26**: 1573-157.

Dhar, R., Gupta, N.K. and Samanta, A. 2008. Effect of irrigation scheduling on the performance of *kharif* rice grown under different establishment methods. *Journal of Research,* SKUAST-J, **7**: 277-280.

Dhar, R., Kotwal, S., Bhat, A.K. and Gupta, N.K. 2009. Effect of method of establishment, spacing and nutrient source on the growth and yield of rice. *Environment and Ecology*, **27**: 965-70.

Dhar, R., Khar, S. and. Bali, S.V. 2008. Effect of integrated nutrient management on energy use and cost of growing wheat under rice-wheat rotation. *Journal of Research,* SKUAST-J **7:** 238-242.

Kirmani, N.A., Sofi, J.A., Wani, M.A. and Chesti, M.H. 2008. Zinc-phosphorous relationship in some rice growing lacustrine soils of Kashmir valley. *Environment and Ecology*, **26:** 441-443.

Gahlod, B.M., Raut, B.M., Raghuwanshi, D.S., Dhakate M.S., Upadhye, S.V., Sharma, A. and Wankheded, P.R. 2008. Congenital umbilical defect in a kid with intestinal evisceration. *Veterinary World*, **1:** 147.

Ganai, M.A., Bali, A.S. and Sharma, N. 2008. Studies on the effect of residual and applied phosphorus on soil chemical properties and P- balance in wheat-sorghum cropping system. *Research on Crop* **9**: 437-440.

Guleria, S., Kumar, A. and Tiku, A.K. 2008. Chemical composition and fungitoxic activity of essential oil of *Thuja orientalis* L. grown in north-western Himalayas. *Zeipshcrift Fur Naturforschung* **63c**: 211-214.

Guleria, S., Kumar, A. and Tiku, A.K. 2008. Toxicity of *Solanum xanthocarpum* fruit extract against *Alternaria brassicae*, causal agent of Alternaria blight of Indian mustard (*Brassica juncea*). *Archives of Phytopathology and Plant Protection* doi: 10.1080/03235400701803937.

Gupta, M., Bali, A.S., Sharma, B.C., Kachroo, D. and Bharat, R. 2008. Productivity, nutrient uptake and economics of wheat (*Tritium aestivum*) under various tillage practices, fertility levels and N-splits. *Indian Journal of Agronomy* **52**: 127-130.

Gupta, R.K. 2008. Ginger-A wonder spice for North Western Himalayan region: An overview. *Vegetos* **11**: 1-14.

Gupta, S.K. and Pratap, A. 2008. Evaluation of wild crucifers under sub-tropical conditions of Jammu and Kashmir. *Cruciferae News letter*, France **28**: 77-79.

Gupta, S., Kaul, V. and Shankar, U. 2008. Progeny production and pathogenicity of local isolate of *Steinernema carpocapsae* against *Pieris brassicae* (L.). *Green Farming*, **1**: 27-30.

Gupta, S., Kaul, V., Srivastava, K and Monobrullah, M.D. 2008. Pathogenicity and *in vivo* culturing of a local isolate of *Steinernema carpocapsae* against *Spodoptera litura* (Fab.). *Indian Journal of Entomology*, **70**: 346-349.

Kachroo, J. and Kachroo, D. 2008. Need for technology transfer to women in India-An Overall Review. *Agricultural Extension Review*, XIX: 19-21.

Kachroo, J. and Sharma, M. 2008. Sunflower scenario in India. *Journal of Research*, SKUAST-J, **7:** 122-131.

Kant, V., Verma, P.K., Pankaj, N.K., Kumar, J., Kusum, Raina, R. and Srivastava, A.K. 2008. Haematological profile of subacure oral toxicity of fluoride and ameliorative efficacy of aluminium sulphate in goats. *Toxicology International*, **16***:* 31-35.

Katoch, R., Vohra, S., Yadav, A., Khajuria, J.K., Pandey, V. and Singh, Y. 2008. Prevalence of parasitic infection in pigs of Jammu region. *Vet. Practioner* **9**: 102-103.

Khan, A. 2008. Effects of organic feed supplements on live performance, biochemical profile and immune response of broiler chicks comparative performance of broilers chicks supplemented with lincomycin and herbiotic- fs. *Indian Journal of Poultry Sciences*, **43**: 45-48.

Khar, S., Tikoo, A. and Lidhoo, C.K. 2008. Energy audit of draught and milch animal production system in Jammu and Kashmir-A case study. *Draught Animal News*, University of Edinburgh, Scotland UK **46:** 48-50.

Khushu, M.K., Gupta, V., Rahman, N., Singh, M. and Tiku, A.K. 2008. Biomass partitioning of maize crop under different microclimatic conditions. *Journal of Research*, SKUAST-J, **7**: 232-237.

Khushu, M.K., Rahman, N., Gupta, V., Prakash, A., Bali, A.S. and Tiku, A.K. 2008. Prediction of yield of Maize Using Thermal Indicies. *Environment and Ecology*, **26**: 1772-1776.

Khushu, M.K., Rahman, N., Singh, M., Prakash, A., Tiku, A.K. and Bali, A.S. 2008. Thermal time indices for some mustard genotypes in the Jammu region. *Journal of Agrometeorology*, **10**: 224-227.

Kotwal, S. K. and Rashid, M. 2008. Incidence of brucellosis in Goat and Women. *Journal Vety. Public Health*, **6**: 115-116.

Koul, R.K., Gupta, N., Sharma, I. and Gupta, V. 2009. Dietary fibres: A Review. **36**: 36-37.

Kour, S. and Jalali, V.K. 2008. Forms of sulphur and their relationships in soils of different agro-climatic zones of Jammu region. *Journal of the Indian Society of Soil Science* **56**: 309-312.

Kour, S. 2009. Contribution of agriculture to greenhouse gases effect. *Rashtriya Krishi*, **3**: 126-127.

Kumar, A., Thakur, N.P., Gupta, M. and Gupta, V. 2008. Alternative organic sources in integrated nutrient management strategies for wheat (Triticum aestivum)-rice (Oryza sativa) system under sub-tropical condition. *Indian Agriculturist*, Golden Jublee Number: 183-191.

Kumar, B. and Gupta, B.B. 2009. Drought tolerance in wheat (*Triticum aestivum*) using half diallel analysis. *The Indian Journal of Agricultural Sciences* **63**: 394-398.

Kumar, P., Suri, S., and Gahlot, P.K. 2008. Comparative morphological and morphometrical study on the tongue of sheep and goat. *The Indian Journal of Field Veterinarians,* **4**: 33-35.

Kumar, R., Tiku, A.K., Singh, D. B. and Mir, M. M. 2008. Effect of GA3, NAA and CCC on growth, yield and quality of strawberry (Fragaria x ananassa Dutch.) Cultivar Sweet Charlie. *Environment and Ecology*, **26**: 1703-1705.

Kumar, S., Sharma, J.P., Rattan, P., Chopra, S. and Kumar, S. 2009. Evaluation of exotic introductions of cauliflower (*Brassica oleracea var. botrytis* L.) for yield and quality traits. *Environment and Ecology* **27**: 433-435.

Kumar, S., Sharma, J.P., and Kumar, S. 2008. Response of knolkhol (*Brassica oleracea L.var gongylodes*) cv.G-40 to various integrated nutrient management practices. *Journal of Research*, SKUAST-J **7**: 257-261.

Kumar, S., Sinha, A.K., Singh, S.K., Singh, B., Mahto D., and Verma, R.K. 2008. Effect of herbal drugs on survivability of piglets. *Veterinary World*, **I**: 205-206.

Khuswaha, R.B., Amarpal, Kinjavdekar. P.A., Aiphal, H.P., Pawde, A.M. and Pratap, K. 2008. Uroliphiasis in buffalo and calves-A Review of 91 cases. *Indian Journal of Veterinary Surgery*, **30**: 9-12.

Lidhoo, C.K. 2008. Appropriate Weeding Tools for Dryland Maize of Jammu Region. *Journal of Research*, SKUAST-J **7:** 56-61.

Lidhoo, C.K. 2008. Hot-air drying characteristics of tomato slices at optimum drying temperature. *Journal of Research*, SKUAST-J **7**: 62-67.

Lidhoo, C.K. 2008. Modeling thin-layer drying characteristics of tomato slices (*Pusa Rubi*). *Journal of the Institution of Engineers*, **89**.

Lidhoo, C.K. 2008. Thin-layer drying characteristics of brinjal Slices. *Journal of Food Science and Technology*, **45:** 423-425.

Lidhoo, C.K and Agarwal Y.C. 2008. Optimizing temperature in mushroom drying. *Journal of Food Processing and preservation*, **33**.

Mangal, M., Sharma, D., Sharma, M., Kher, R. and Singh, A.K. 2008. *In vitro* plantlet regeneration in guava from nodal segments. *Phytomorphology*, **58**: 103-108.

Mehandi, M., Saleem, T., Rai, H.K., Mir, M.S. and Rai, G.K. 2008. Effect of Nitrogen and FYM interaction on yield and yield traits of potato genotypes under ladakh conditions. *Potato Journal* **35:** 126-129.

Mir, S.A., Chesti, M.H., Sofi, J.A. and Kirmani, N.A. 2008. Influence of integrated nutrient management on soil microbial status of paddy. *SKUAST Journal of Research*, **10**: 20-24.

Monobrullah, Md. and Shankar, U. 2008. Sub-lethal effects of *Splt 36* MNPV infection on developmental stages of *Spodoptera litura* (Lepidoptera: Noctuidae). *Biocontrol Science and Technology*, **18**: 431-437.

Pandey, R. K., Dogra, S., Sharma, J. P. and Jamwal, S. 2008. Evaluation of Asiatic hybrid lily cultivars under sub tropical conditions of Jammu region. *Journal of Plant Science Research* **24**: 213-214.

Parihar, P. 2008. Impact of motivational factors and role stress on women entrepreneurs. *Indian Research Journal of Extension Education* **8**: 73.

Pathak, R., Kushwaha, R.B. and Kumar, S. 2009. Clinico-physiological effect of intraspinal and intramuscular Xylazine-Ketamine in uraemic buffalo calves. *The Indian Journal of Veterinary Research*, **18**: 42-45.

Pathak, V, Bhat, Z.F., Bukhari, S.A.A., Kotwal, S.K., and Kumar, R.R. 2008. Recent trends in meat packaging. *Processed Food Industry,* **11**: 20-21, 24, 60-61.

Pathak, V, Bukhari, S.A.A., Bhat, Z.F. 2008. Prospects of *Invitro* meat. *Indian Food Industry* **27**: 33-35.

Pathak, V., Bhat, Z.F., Bukhari, S.A.A., Kotwal, S.K. and Kumar, R.R. 2008. Recent trends in meat packaging. *Processed Food Industry*: 20-24, 60-62.

Rai, S. and Singh, N. N. 2008. Field efficacy of ecofriendly pesticides against mustard aphid, *Lipaphis erysimi* (Kalt.) on mustard. *Environment and Ecology*, **26**: 1831-1834.

Rai, S., Shankar, U., Bhagat, R.M. and Gupta, S.P. 2008. Population dynamics and succession of fruit fly on sub-tropical fruits under rainfed condition in Jammu region. *Indian Journal of Entomology*, **70**: 12-15.

Raina, R., Prawez, S., Dimitrova, D.J., Pankaj, N.K. and Verma, P.K. 2008. Disposition kinetics and urinary escretion of ciprofloxacin in goats following single intravenous administration. *Journal of Veterinary Sciences*, **9**: 241-245.

Rao, M. M., Umamahesh, Y., Venugopal, K., Naidu, B.K.R. and Misra, A.K. 2009. Ovarian superstimulation after ablation and steroid induced follicular wave synchronization in zebu cattle. *Indian Journal of Animal Science*, **79**: 247-250.

Razzaque, W.A.A., Husain, K., Agarwal, S. and Kumar, S. 2008. False Pregnancy in bitch. *Veterinary World*, **1**: 92-95.

Razzaque, W.A.A., Sahatpure, Pawshe, S.K.C.H. and Kuralkar, S.V. 2008. Biometry of ovaries and follicular count in cycling and noncycling Nagpuri buffaloes (*Bubalus bubalis*). *Buffalo Bulletin*, **27**: 150-153.

Reena and Basvana, G.K. 2008. Effect of insecticides on immature, *Cotesia plutellae* Kurdj. (*Hymeroptera:Braconidee*) on endo-larval patasitod of diamond black moth. *Journal of biological Control* **22**: 463-466.

Rizvi, S.E.H., Gupta, S.K. and Najeeb 2009. Genetic analysis in rapeseed (B. napus L.). *Cruciferae Newsletter* **28**: 16-19.

Sarma, K., Kalita, S.N. and Kumar, P. 2008. Anatomy of Humerus of Nilgai (*Boselaphus tragacamalus*). *Indian Journal of Animal Science*, **78**: 24-27.

Sehgal, S. and Thakur, P.S. 2008. Growth and production ability of medicinal herbs under agroforestry system and effect of organic manures. *Indian Journal of Plant Physiology,* 10: 525-532.

Shankar, U., Kaul, V. and Rai, S. 2008. New record of anar fruit borer, *Deudorix isocrates* (*Fabricius*) on aonla. *Journal of Research*, SKUAST-J, **7**: 292-295.

Shankar, U., Singh, R. and Gupta, S. 2008. Efficacy of certain insecticides molecules against chilli thrips (*scirtohrips dorsalis* hood) on chill. *Green Farming* **1**: 27-29.

Sharma, J.P., Singh, A.K., Kumar, S. and Chopra, S. 2008. Genetic divergence in tomato (*Lycopersicon esculentum*). *Journal of Research* SKUAST-J **7**: 105-110.

Sharma, N., Pandey, V., Gupta, S.K. and Upadhyay, S.R. 2008. Efficacy of Oxfendazole against Strongyles in migratory buffalo calves. *Buffalo Bulletin*, **27**: 253.

Sharma, A. and Kher, R. 2008. Diagnosis and recommendation integrated system for detection of nutritional deficiencies and excesses in fruit production-A Review. *The Asian Journal of Horticulture*, **3**: 193-202.

Sharma, B.C., Singh M., Sharma, N. and Gupta, N.K. 2008. Growth parameters and yield of maize cultivars as affected by transpiration rate at moisture sensitive stages. *Environment and Ecology* **26**: 437-440.

Sharma, D and Abrol, D.P. 2008. Laboratory and field toxicity of insecticides to honeybee foragers (Apis mellifera L.). *Green Farming* **2**: 167-170.

Sharma, G., Sharma, L., Singh, R., Bhat, M.A. and Taku, A. 2008. Rotavirus and stx positive E coli in a cattle farm in Rajouri. *Journal of Research,* SKUAST-J **7**: 11-16.

Sharma, H.K., Vohra, S., Yadav, A., Katoch, R., Sood, S. and Kumar, J. 2008. Prevalence of *Cysticercus tenuicollis* in sheep of Jammu region. *Vety. Practitioner*, **9**: 67-68.

Sharma, H., Vohra, S., Yadav, A., Katoch, R., Sood, S. and Kumar, J. 2008. Prevalence of *Cysticercus tenuicollis* in sheep of Jammu region. *Vet. Practioner* **9**: 67-68.

Sharma, J.P., Singh, A.K., Kumar, S. and Sharma, N. 2008. Genetic divergence in okra (*Abelmoschus esculentus* (L) Moench). *Journal of Research* SKUAST-J **7:** 99-104.

Sharma, N., Maiti, S.K. and Pandey, V. 2008. Sensitivity of Indirect Test in the detection of Sub-Clinical Mastitis in Buffaloes. *Veterinary Practitioner* **9**: 29-31.

Sharma, N., Pandey, V. and Upadhyaya, S.R. 2009. Recent trends in diagnosis of bovine mastitis in field conditions. *Indian Dairyman* **61:** 21-27.

Sharma, R.K., Barman, K., Kumar, R., Rastogi, A. and Kumar, V. 2009. Feeding manipulations of dairy animals for better human health: An update. *Indian Dairyman*, **61**: 55-58.

Sharma, R.K., Singh, B. and Sahoo, A 2008. Exploring feeding value of oak (*Quercus incana*) leaves: Nutrient intake and utilization in calves. *Livestock Science* **118**: 157-165.

Sharma, R.K., Gupta, B.B. and Bijral, J.S. 2008. Effectiveness of viable mutations in basmati rice (*Oryza sativa*). *Journal of Research,* SKUAST-J **7**: 145-149.

Sharma, R.K., Gupta, B.B. and Bijral, J.S. 2008. Frequency and spectrum of viable mutations induced by physical and chemical mutagens in basmati rice. *Journal of Research,* SKUAST-J **7:** 33-39.

Sharma, V. and Tiku, A.K. 2008. *In vitro* cytotoxic effect of chloroform soluble and n-butanol soluble fractions of Apium graveolens on human cancer cell lines. *The Asian Journal of Experimental Chemistry*, **3**: 41- 45.

Sharma, V. and Tiku, A.K. 2008. Physico-chemical and enzymatic studies conducted on river/riverine micro-organisms subjected to heavy metal stress. *National Journal of Life Sciences*, **5**: 165-168.

Sharma, P.K., Sharma, B.C. and Bali, A.S. 2008. Effect of tillage systems and cultivars on yield and yield attributes of wheat (*Triticum aestivum* L.) in basmati rice-wheat system. *Environment and Ecology* **26**: 2161-2164.

Sharma, S., Lall, A.M., Sharma, R.K., Jamwal, A. and Gupta, V. 2008. Response of neem cake and bio-fertilizer on physical parameters of grren gram (V*igna radiata* L. Wilczek). *Journal of Research,* SKUAST-J **7**: 163-166.

Sharma, A., Reena, Nandan, B., Kumar, J. and Jamwal, B.S. 2008. Effect of phosphorus and seed rate on growth and productivity of large seeded *kabuli* chickpea in sub-tropical *kandi* areas of Jammu and Kashmir. *Journal of food Legumes*, **21**; 231-233.

Sharma, N. 2008. Influence of pacto butrazol and nitrogen on quality, yield and economics of tomato (*Lycopersicum esculantum* Mill.). *Journal of Research*, SKUAST-J, **7**: 262-66.

Sharma, P. and Singh, M. 2008. Optimization of organic and inorganic nitrogen for rainfed maize (*Zea mays*) in dry sub-humid Inceptisols. *Indian Journal of Agronomy*, **53**: 178-183.

Singh, P**.** and Singh, A. K. 2008. Economics and yield potential of rice as influenced by different varieties and spacing. *Environment and Ecology*, **26**: 2019-2021

Singh, V.K., Koul, V., Kalha, C.S., Singh, P., Singh, V.B. and Verma, V.S. 2008. New record of root-knot nematode, *Melioidogyne incognita* infecting lentil in Jammu. *Journal of Research*, SKUAST-J **7**: 267-268.

Singh, A.K., Sharma, N., Sharma, J.P. and Kumar, S. 2008. Evaluation of biological gene pooled of cultivated okra for yield characteristics. *Journal of Research and Development* **7***: 7*-10.

Singh, B. and Bhat, A.A. 2009. Combining behaviour of elite synthetic hexaploid wheat with stable wheat cultivar. *Journal of Research*, SKUAST-J **7**: 218-224.

Singh, N.K., Kinjavdekar, P.A. and Singh, G.R. 2009. Evaluation of xylazine-ketamine and buprenorphine for post traumatic pain management in goats. *Indian Journal of Veterinary Surgery,* **2**: 61-66.

Singh, S.B. and Gupta, B.B. 2008. Triple test cross analysis to detect epistasis for morpho-physiological traits related to drought tolerance and yield components in maize (*Zea mays* L.). *Journal of Research*, SKUAST-J **7:** 202-209.

Singh, S. B. and Gupta, B.B. 2008. Selection index and selection criteria for drought tolerance in maize (*Zea mays* L.) over environments. *Progressive Agriculture,* **8**: 132-136.

Singh, S.B. and Gupta, B.B. 2008. Combining ability analysis for some morpho-physiological and yield components related to drought tolerance in maize (*Zea mays* L.). *Progressive Research,* **3**: 181-186.

Singh, V.B., Singh, V.K., Chauhan, V.B. and Singh, S.K. 2008. Morphological and cultural variability in *Phytophthora drechsleri* f. sp. cajani causing blight of pigeonpea. *Annals of Plant Protection Science*, **16**: 168-171.

Singh, V. K. 2008. Plant parasitic nematodes associated with cucurbitaceous vegetables. *Indian Journal of Nematology*, **38**: 114-115.

Singh, V. K. 2008. New record of root-knot nematode *Meloidogyne incognita* infesting bean and pea in Jammu. *Indian Journal of Nematology*, **38**: 117-118.

Singh, V. K. 2008. Management of root-knot nematode *Meloidogyne incognita* infecting Pea. *Indian Journal of Nematology*, **38**: 112-113.

Singh, V.K., Singh, V.B., Singh, P., Verma, V.S., Kalha, C.S. and Koul, V. 2008. New record of root knot nematode (*Meloidogyne incognita*) infecting lentil in Jammu. *Journal of Research* SKUAST-J **7**: 267-268.

Sood, S., Vohra, S., Yadav, A., Bashir, A.D. and Srivastava, A.K. 2008. An overview of myiasis in domestic animals of India. *Veterinary Practioner*, **9**: 97-101.

Sudhan, N.S., Suri, S., Sarma, K., Azmi, S. and Kumar, P. 2008. Anatomical study on the kidney of musk deer (*moschus moschiferus*). *Indian Journal of Animal Sciences* **78:** 725-726.

Suri, S., Sudhakar, L.S. and Bhardwaj, R.L. 2008. Histomorpholgy of ampulla of vas deferens of Gaddi goat and sheep. *Indian Journal of Animal Sciences* **78**: 947-949.

Suri, S., Sudhakar, L.S and Bhardwaj, R.L. 2008. Seasonal variation in the Histomorpholgy and histochemistry of ampulla of vas deferens of Gaddi goat and sheep. *International Journal of Morphology*, **26**: 131.

Suri, S., Sudhakar, L.S. and Bhardwaj, R.L. 2008. Seasonal variation in the Histomorpholgy, micrometry and histochemistry of seminal vesicles of Gaddi goat and sheep. *Journal of Research*, SKUAST-J **7**: 167-174.

Suri, S., Sudhakar, L.S. and Bhardwaj, R.L. 2009. Anatomical studies of the Prostate gland of Gaddi goat and Gaddi sheep. *Indian Journal of Animal Sciences*, **79**: 294-296.

Suri, S., Sudhakar, L.S. and Bhardwaj, R.L. 2008. Histomorpholgy of seminal vesicles of Gaddi goat and sheep. *Indian Journal of Veterinary Anatomy*, **20**: 26-29.

Thirumurugan, P. 2008. Effect of feeding rice bran based diets to crossbred gilts on certain blood biochemical parameters in preweaned piglets. *Indian Veterinary Journal*, **85**: 1176-1178.

Thusoo, R.K., Khattra, P.S. and Khar, S. 2008. Structural changes in resource use in major Wheat growing states of India. *Environment and Ecology*, **26:** 1753-55.

Tirpathi, A.K., Rajora, V.S. and Singh, S.P. 2008. Effect of herbs as adjunct Therapy on haemto-biochemical profiles in diarrhoeic calves. *Indian Journal of Animal sciences*: 832-33.

Umar, I. and Sharma. A. 2008. Control of height through growth retardants in fruit trees-A Review. *The Asian Journal of Horticulture*, **3**: 473-478.

Umar, I., Wali, V.K., Kher, R. and Sharma, A. 2008. Impact of Integrated nutrient management on strawberry yield and soil nutrient status. *Applied biological Research*, **10**: 22-23.

Umar, I., Wali, V.K., Kher, R. and Jamwal, M. 2009. Effect of FYM, Urea and Azotobacter on growth, yield and quality of strawberry cv. Chandler. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, **37**: 139-143.

Upadhye, S.V., Dhakate, M.S., Fiske, G., Sharma, A., Dhoot, V.M., Dakshinkar, N.P., Panchbhai, V.S., Gahlod, B.M. and Kamble, M. 2008. Primary Extragenital Transmissible Tumor in dog- A report. *Royal Veterinary Journal*, **4**: 54.

Upadhye, S.V., Pillai, S., Panchbhai, V.S., Dhakate, M.S., Gahlod, B.M., Patil, S.N., Raghuwanshi, D.S. and Sharma, A. 2008. Ventro lateral abdominal hernia of gravid uterus in a goat. *Royal Veterinary Journal*, **4**: 15.

Varshney, M., Taku, A., Kumar, D., Kumar, T. and Chhabra, R. 2009. Molecular detection of *Pasteurella multocida* by species and capsular type B specified PCR-assay. *Indian Journal of Veterinary Research*, 18: 48-54.

Verma, V.S. 2008. Seasonal occurrence and chemical management of post-harvest fungal rot pathogens of mandarin orange (*Citrus reticulata* Blanco.). *Indian Phytopathology*, **61**: 317-322.

Books Edited/Chapters

Abrol, D.P. 2008. Plant-Insect Interaction. ***In***: *Biology of breeding crucifers* (Gupta S.K Ed.) CRC Press, Taylor and Franci: 129-149.

Gupta, S.K. and Pratap, A. 2008. Recent trends in oilseed brassicas ***In:*** *Crop Improvement: Challenges and Strategies* (Ed.) Nayyar, H. I.K. International, New Delhi: 302-317.

Gupta, S.K. and Pratap, A. 2009. Breeding methods. ***In***: *Biology and Breeding of Crucifers* (Ed.) Gupta, S.K., CRC Press, Boca Raton, New York, USA: 79-98.

Gupta, S., Kalha, C.S., Razdan, V.K. and Gupta, V. 2009. Bean Anthracnose: A dreaded disease of French bean and its management. ***In***: *Plant Diseases Management for Sustainable Agriculture (*Ed. S. Ahamad) Daya Publishing House: 243-250.

Kotwal, S.K. and Bakshi, S.B. 2008. Environmental pollutants global impacts and remedies with special reference to Indian scenario. ***In***: *Food safety Quality Assurance and Global trade*. S.P. Singh, J. Funk, S.C. Tripathi and N. Joshi (Eds): 239-257.

Kotwal, S.K., Bakshi, S.B., Rashid, M. and Sharma, H.K. 2008. Understanding wild life ecobiology: A key for rabies control strategies. ***In***: *Food safety Quality Assurance and Global trade*. S.P. Singh, J. Funk, S.C. Tripathi and N. Joshi (Eds): 353-363.

Pratap, A and Gupta, S.K. 2009. Biology and Ecology of wild crucifers. ***In:*** *Biology and Breeding of Crucifers* (Ed.) Gupta, S.K., CRC Press, Boca Raton, New York, USA: 37-68.

Pratap, A. and Gupta, S.K. 2009. Biotechnological interventions in host plant resistance. ***In:*** *Integrated pest management: Innovation-Development process* (Ed.) Peshin, R. and Dhawan, H.K. Vol. II Springer Science Business: 183-206.

Pratap, A., Gupta, S.K. and Takahata, Y 2009. Microsporogenesis and haploidy breeding. ***In:*** *Biology and Breeding of Crucifers* (Ed.) Gupta, S.K., CRC Press, Boca Raton, New York, USA: 293-308.

Folders/leaflets/bulletins

(In Hindi)

Avinash, Kumar, R. and Nanda, R. 2008. Murgi palan, utpadan avam prabandh main dhyan rakhane yogya batein.

Avinash, Rajinder, K. and Nanda, R. 2008. Swach Dugdh utpadhan: kyon aur kaise.

Avinash, Sharma, R.K. and Ankur R. 2008. Pashuon main poshan dwara utpadhan badhayen.

Avinash, Kumar, R. and Nanda R. 2008. Murgi palan utpadhan praband-dhyan rakhney yogya batain.

Avinash, Kumar, R. and Nanda, R. 2008. Thnaila: dudharu pashuon main hone wala ek sankramak rog.

Avinash, Kumar, R. And Nanda, R. 2008. Swach Dugdh utpadhan: kyon aur kaise.

Badyal, S., Neelima, G. and Nanda, R. 2008. Jevik Shakti ke liye Mausmi Phalon aur sabjion ke upay.

Badyal, S, Parihar, P. and Neelima, G. 2008. Tamatar Ke Utpaad Bannana.

Khajuria, S. 2008. Kaun se ped kab aur kaise lagaye.

Koul, R.K., Bhat, A., Sood, M. and Singh, J. 2009. Mushroom mulyavardan tatha prasansadhan.

Koul, R.K., Bhat, A., Sood, M. and Singh, J. 2009. Strawberry ke pariiakshi padarth (chutney, jam and squash).

Koul, R.K., Bhat, A., Sood, M. and Singh, J. 2009. Tamatar ke parirakshit padarth.

Koul, R.K., Bhat, A., Sood, M. and Singh, J. 2009. Papite ke parirakshit padarth.

Koul, R.K., Bhat, A., Sood, M. and Singh, J. 2009. Phalon avam sabziyon ki chutney.

Rai, P.K., Bandral, R. and Nanda, R. 2009. Azatobacter: Ek upyogi jaiv urvarak.

Sharma, A.K., Rai, P.K. and Avinash 2009. Rabi mein ugaye jane vale charey ki kheti.

Vaid, A., Jamwal, A. and Ajrawat, B. Khumb Ki Kheti-Labhkaari Vavsayay.

(In English)

Kumar, R., Kumar, A., Rai, S.K., Upadhayay, L. and Lal, B. 2008. Remedies for fruit drop.

Kumar, R., Kumar, A., Rai, S.K., Upadhayay, L. and Lal, B. 2008. Contingent plan for *kharif*.

Kumar, A., Kumar, R., Rai, S.K., Upadhayay, L. and Lal, B. 2008. Parthenium management strategies in *kandi* areas.

Lal, B., Tandon, V., Kumar, R., Rai, S.K. and Upadhayay, L. 2008. Role of IT in Agriculture**.**

Neelima, G. and Gupta, V. 2008. Nutritional value of organic foods.

Neelima, G. and Badyal, S. 2008. Nutrition facts and health benefits of strawberry.

Neelima, G. and Badyal, S. 2008. Strawberry preserve.

Neelima, G. and Badyal, S. 2008. Ragi malt-a health drink.

Neelima, G. and Badyal S. 2008. Techniques of Tie and Dye.

Rai, P.K., Gupta V. and Arora, S. 2008. Fertilizer requirement per kanal for different crops.

Rai, P.K., Bandral, S. and Sharma, V. 2008. Fertilizer requirement per kanal for vegetable crops.

Rai, S.K., Kumar, A., Kumar, R., Upadhayay, L. and Lal, B. 2008. Successful IPM approaches in vegetables.

Rai, S.K., Kumar, A., Kumar, R., Upadhayay, L. and Lal, B. 2008. Raising of healthy nursery of vegetable crops.

Rai, S.K., Tandon, V., Kumar, R., Upadhayay, L. and Lal, B. 2008. Successful Module in some important vegetable crops.

Upadhayay, L., Rai, S.K., Kumar, A., Kumar, R. and Lal, B. 2008. Use of bamboo and cultivation strategies.

Verma, V.S., Sharma, A., Gupta, V. and Singh, B. 2009. Grow aonla trees for assured returns in rainfed areas.

Verma, V.S., Sharma, A., Gupta, V. and Singh, B. 2009. Success story of line sowing of maize crop.

Verma, V.S., Gupta, V., Sharma, A., Singh, B. and Singh, V.K. 2009. Agro techniques for *rabi* crops.

Popular Articles

(In Hindi)

Avinash and Kumar, R. 2008. Pashu rogon ka grelu ilaaz kaise karein. *Dehat Sandesh.*

Avinash and Kumar, R. 2008. Dudharu pashuon ke liye grah vaibastha. *Dehat Sandesh*, February 21, 2008.

Avinash, Kumar, R. and Nanda, R. 2008. Pashu prajnan main badotri kaise Karen. *Dehat Sandesh*, June 24, 2008.

Avinash. 2009. Apne pashuon ko savasth kese rakhen. *Kisssan Vikas Patrika*, KVK, R.S. Pura, SKUAST-J.

Bandral, J.D. 2008. Phalon avem sabziyo ka parirakshan kaise kare. *Dehaat Sandesh*, September 11, 2008.

Bandral, J.D. 2008. Posahn suraksha ke liye quality protein maaka**.** *Dehaat Sandesh*, November 15,2008.

Bandral, J.D. 2008. Kuch davayian jinhe ghar ki bagiya mein ugaye. *Dehaat Sandesh*, December 12, 2008.

Charak, A.S. 2009. Vermicompost: Carbonic kheti ki adhari avishakta. *Kheti Duniya*, March 21, 2009.

Charak, A.S. 2009. Krishi Utpadan main jav urvarsho kimahatata avm upyogh. *Kheti Duniya*, March 14, 2009.

Gupta, V., Rai, P.K. and Nanda, R. 2008. Swayam sahayta samooh ki adarsh niyamavali. *Dehat Sandesh*, **155** June 30, 2008.

Kumar, J., Hegde, V., Singh, A.K. and Chauhan, S.K. 2008. Uttari Bharat mein kabuli chane ki unnat kheti. *Prasardoot* : 10-11.

Khajuria, S. 2009. Makoi ki kheti. *Dehaat Sendesh*, February 22, 2009.

Khajuria, S. 2009. Vanya pashu bi karte hai van aonshdyon ka prayog. *Dehaat Sendesh*, February 27, 2009.

Khajuria, S. 2009. Guno ki khan hai gazar. *Dehaat Sendesh*, March 01, 2009.

Khajuria, S. and Raina, V. 2009. Khurasani aizowan ki unnat kheti. *Dehaat Sendesh*, March 08, 2009.

Khajuria, S. and Baru, P. 2009. Tulsi ki bigyanik kheti. *Dehaat Sendesh*, March 15, 2009.

Khajuria, S., Gupta, R. and Sharma, R. 2008. Kali Mirch-ek Gunkari Aoushdi. *Dehat sandesh*, February 28, 2008.

Khajuria, S., Lehria, S.K., Singh, A.K. and Srivastva, J.N. 2008. Geraninum ki kheti. *Dehat sandesh*, October 07, 2008.

Khajuria, S., Charak, A.S. and Kotwal, N. 2008. Ashwagandha:Doda ke kisano ke liye labh dyam uphaar. *Dehat* Sandesh, October 11, 2008.

Khajuria, S., Lehria, S.K. and Srivastva, J.N. 2008. Setvia Prakaiti ka ek vardhan. *Dehat Sandesh*, October 19, 2008.

Khajuria, S. Lehria, S.K., Charak, A.S. and Kotwal, N. 2008. Posta- Asthma ke liye ek labh dayak buti. *Dehat Sandesh*, October 21, 2008.

Rai, P.K. and Gupta, V. 2008. Prashichhan karyakram ko prabhavshali banana ke upay. *Dehat Sandesh*, **169** July 15, 2008.

Rai, P.K., Gupta, V. and Sharma, V. 2008. Jal grahan vikas me jan bhagidhari ka mahatav. *Dehat Sandesh*, September 30, 2008.

Rai, P. K. 2009. Mitti se namuna lena mrida parichhan ka pehla avam mahatvapurn charan. *Krishi Vigyan Patrika*, KVK, R.S.Pura, SKUAST-J.

Rai, P.K. and Sharma, V. 2008. Mitti re mitti tera haal kaisa. *Dehat Sandesh*, **278** November 18, 2008.

Rai, P.K. and Sharma, V. 2008. Jal ka fasal utpadan main mahatva. *Dehat Sandesh,* **299** December 11, 2008.

(In English)

Bakshi, P. and Bhushan, B. 2008. Horticulture-Role in controlling environment pollution. *Daily Excelsior*, June 08, 2008.

Bhushan, B. and Bakshi, P. 2008. Saffron: An exotic spice. *Daily Excelsior*, April 20, 2008.

Bhushan, B. and Srivastava, J.N. 2008. Kala Zeera: A beneficial spice. *Daily Excelsior,* April 20, 2008.

Kour, R. 2009. High density planting in apple. *The Latest*, March 03, 2009.

Kour, R 2009. Off season vegetable cultivation. *Daily Excelsior,* March 03, 2009.

Kour, R. 2008. Gladiolus: A matchless beauty. *The Latest*, December 02, 2008.

Kour, R. 2008. House plants. *The Latest*, December 02, 2008.

Kour, R. 2008. Horticulture- a way of life. *The Early Times,* November 03, 2008.

Kour, R. 2008. Neem- A tree of 21st century. *The Early Times,* November 03, 2008.

Sharma, P.K., Rai, P.K. and Tandon, V. 2008. Saffron: The golden condiment. *Indian Farming*, ICAR, September: 7-8.

5. Infrastructure Development

INAUGURAL CEREMONY

Conference Hall, FOA

The conference hall at Faculty of Agriculture, Main Campus, Chatha was inaugurated by Sh. Montek Singh Ahluwalia, Deputy Chairman, Planning Commission, Govt. of India on 27th May, 2008 in the presence of then Hon'ble Vice-Chancellor and other dignitaries.

Seed Processing Centre

The seed processing centre at Main Campus, Chatha was inaugurated by Jenab Abdul Aziz Zargar, then Hon'ble Minister of Agriculture and Cooperative, J&K State on 16-04-2008.

Main Entrance Gate, FVSc & AH

Main Entrance gate of faculty of veterinary sciences & animal husbandry R.S.Pura campus was inaugurated on 07-04-2008 by then Hon'ble Vice-Chancellor, SKUAST-Jammu.

Cattle Instructional Farm

Cattle instructional farm at faculty of veterinary sciences & animal husbandry R.S. Pura campus was inaugurated by Dr. Nagendra Sharma then Hon'ble Vice-Chancellor on 07-04-2008.

Details of works completed, in progress during 2008-09 and proposed for 2009-10

1. Works Completed during 2008-09

A) <u>FOA Main Campus, Chatha</u>

i) Conference Hall
ii) Administrative Building (G+1)
iii) Premixing (Part) of Internal Service Roads

B) <u>FVSc & AH R.S.Pura</u>

Library Building

C) <u>KVK Bhaderwah</u>

Four sets Residential Quarters

D) <u>KVK Tanda Reasi</u>

i) Administrative Building
ii) Farmers' Hostel
iii) Residential Quarters Six sets

2 Work in Progress during 2008-09

A) FOA Main Campus Chatha

i) Boys Hostel
ii) Farmers Hostel building
iii) Main Gate and 2nd Entrance Gate
iv) Drainage system and Cross drainage works
v) Sewerage system and treatment plant.
vi) Footpaths, Central Verges, Kerbstones etc. on internal service roads.
vii) External electrification.

B) KVK Rajouri

Administrative Building (FF)

C) KVK Poonch

i) Administrative Building
ii) Farmers' Hostel Building
iii) Residential Quarters 04 Sets
iv) Sr. Scientist Quarter 01 set
v) Ministerial staff Quarter 01 set
v) Demonstration Shed

3. New Works Proposed during 2009-10

A) Main Campus Chatha

i) Directorate of Extension Education
ii) Estates Division
iii) Vice-Chancellor's Residence
iv) Residence for Teaching and Non-Teaching Staff
v) General Facilities
   a) Health Care Centre
   b) Bank, Post Office & Shopping Complex
vi) Providing & Laying 6.30 MVA independent uninterrupted Power supply line to the Campus including 33/11 KV Receiving Station
vii) Development and modernization of Agricultural University Farm
   a) Storage shed 90'x30'x16' = 01 unit
   b) Stores for Agri. Produce 35'x25'x16 = 02 blocks
   c) Implements storage & parking shed 126'x41'x14' = 1 unit
   d) Storage/Drying shed 90'x30'x16' One unit alongwith threshing platform 150'x50' open

e) Thrashing platform open 70'x40' (02 units)

B) FVSc & AH R.S.Pura

Poultry Unit (Experiential Learning setting up facilities for hands on training

C) KVK Tanda Reasi

i) Protection work/ Chain link fencing
ii) Poly House (Demonstration Unit) = 1 No.

D) KVK Poonch

i) Poultry (Demonstration Unit) = 01 No
ii) Poly House (Demonstration Unit) = 01 No
iii) Retaining Wall/ Chain Link fencing

LIBRARY UPDATE

Annexure-1

1. Working hours : 9.00 AM to 5.00 PM

2. Library membership

		Teachers	Students	Total
Agricultural Faculty	:	157	224	381
Veterinary Faculty	:	86	360	446

3. Loan privileges : Loan facility is available to Faculty Members, Employees & Students as per library rules.

4. Inter Library loan facilities : Facility available on demand.

5. Acquisition programme

Books

Library	Number of Books		
	In Stock	Added in 2008-09	Total
Central Library	17901	771	18672
Veterinary Library	4966	34	5000
Total	22867	805	23672

Journals / Serials

Library	Number of Journals/Serials Subscribed		
	Indian	Foreign	Total
Central Library	71	46	117
Veterinary Library	26	31	57
Total	97	77	174

6. Documentation Activities : –
   Document Processing

7. Resources Management : Work of books entry in SOUL database is in process. & books are being classified and catalogued including assigning subject headings.

   Reference : Day to day reference service given to readers.

Circulation

Library	Number of Books			
	Issued	Returned	Consulted	Total
Central Library, Chatha	2393	2071	1680	6144

Stack Maintenance : Open shelve arrangement according to DDC is being maintained.

Reprography services : Photostat service on concessional rate of Rs. 0.75/page is available.

8. CD-ROM workstation : Facility available free of cost and CAB CD, VET CD & FSTA are being used extensively.

9. Library participation in Post Graduate teaching programmes

LIB-601 "Library Science & Technical Writing" 1+0 credit hour course is being taught to the PG students.

10. Library automation activity : Job of creating database of library holdings on SOUL software.

11. Digitalization:

Rare Books & Print on Demand : Print on Demand service is available on concessional rate of Rs. 1.50/page.

Post Graduate Theses : Database of theses' covering Abstracts is complete.

12. Training of Librarians / Library professionals

S.No	Name of Professional	Title	Date	Place
01.	Smt. Shashi Prabha, Assistant Librarian	Participated in winter school entitled "Impact of IT on Library services in present scenario"	29-01-2009 to 18-02-2009	Department of Library Science, University of Jammu, Jammu
02.	Sh. Leela Dhar Mangi, Assistant Librarian	Lecuture delievered in UGC refresher course on ***Wi-Max technology – A Boon for modern libraries***.	29-01-2009 to 18-02-2009	Department of Library Science, University of Jammu, Jammu

13. Any other information :

Shifting of Veterinary Library, R.S.Pura to its exclusive building which is unique, modular and functional two storey glazed library building.

Linkages and Collaboration

Given the national leadership in almost all major agricultural research areas, the university has close linkages with following other institutes of the country.

Institute	Web Site
State Agriculture Universities	
Assam Agricultural University	www.aau.ac.in
Acharya NG Ranga Agricultural University, Hyderabad	www.angrau.net
Ch.Sarwan Kumar Himachal Pradesh Krishi Vishvavidyalaya, Palampur	www.hillagric.ernet.in
Gujarat Agricultural University	www.gau.guj.nic.in
Jawaharlal Nehru Krishi Vishvavidyalaya, Jabalpur	www.jnkvvjabalpur.org
Kerala Agricultural University	www.kau.edu
Orissa Univ. of Agriculture & Technology	www.ouat.ac.in
Punjab Agricultural University	www.pau.edu
Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Krishinagar, Akola, Maharashtra	www.pdkv.mah.nic.in
Sher-e-Kashmir University of Agric. Sc. & Tech, Kashmir	www.skuastkashmir.ac.in
Tamil Nadu Agricultural University, Tamil Nadu	www.tnauniv.org
University of Agricultural Sc. GKVK, Karnataka	www.uasbng.kar.nic.in
Dr. Yashwant Singh Parmar Univ. of Horticulture & Forestry, Solan (H.P)	www.ysparmeruniversity.org
Deemed University & Institutes	
Indian Council of Agriculture Research	www.icar.org.in
Indian Agriculture Research Institute	www.iari.res.in
Indian Veterinary Research Institute	www.ivri.nic.in
National Dairy Research Institute	www.ndri.hry.nic.in
CIFE	www.fisheries.university.org
Allahbad Agriculture Institute and Deemed University	www.aaidu.org

Annexure-III

Participation of scientists in Conference/workshops/Symposia /Training *etc* in the State/India/Abroad (2008-09)

Faculty of Agriculture

S. No.	Name of Scientist with Designation	Training Attended	Training Agency	Period		Duration (Days)
				From	To	
1	Dr. Mahital Jamwal, Asstt. Prof. (Pomology)	National seminar on Protected Cultivation	SKUAST-Jammu	21-02-2009	22-02-2009	2
2	Dr. S. K. Gupta, Assoc. Prof. (Agroforestry)	Conservation farming through efficient use of resources to sustain livelihood of dryland farmers of north-western Himalayas	SKUAST-Jammu	16-01-2009	05-02-2009	21
3	Dr. K K. Sood, Assoc. Prof. (Agroforestry)	Agro forestry to meet the challenge for sustainable natural resource productivity live hood security and mitigation of climate change	NRC, Jhansi	04-02-2009	24-02-2009	21
4	Dr. L. M. Gupta, Asstt. Prof. (Agroforestry)	Advance training on non timber forest produce	Dr.YSPUHF, Solan	16.02.2009	08.03.2009	21
5	Dr. Sandeep Sehgal, Asstt. Prof. (Agroforestry)	Agro forestry for farm diversification and carbon sequestration	PAU, Ludhiana	28-01-2009	17-02-2009	21
6	Ms. Meenakshi Gupta, Asstt. Prof. (Agroforestry)	Conservation farming through efficient use of resources to sustain livelihood of dryland farmers of north-western Himalayas	SKUAST-Jammu	16-01-2009	05-02-2009	21
7	Dr. R.K. Salgotra, Asstt. Prof. (Plant Breeding)	Bioinformatics for agricultural sciences	CCSHAU, Hisar	19-02-2009	11-03-2009	21
		Marker assisted selection in rice	DRR, Hyderabad	07-07-2008	11-07-2008	5
		Annual Rice Group Meeting	IGKVV, Raipur	10-04-2008	14-04-2008	5
8	Mr. Satish Sharma,	Trends in	University	16-03-2009	19-03-2009	21

	Asstt. Prof. (PBG)	Bioinformatics	of Jammu			
9	Dr. S.K. Mondal, Assoc. Prof. (PBG)	Wheat field day	NBPGR, New Delhi and DWR, Karnal	25-03-2009	26-03-2009	2
		Training cum workshop on IP and Technology Management	CCSHAU, Hisar	19-05-2008	21-05-2008	3
10	Dr. A.K. Razdan, Professor (PBG)	Monitoring and selection of germplasm for maize single cross hybrid development	DMR, Hyderabad	14-03-2009	17-03-2009	4
11	Dr. B.S. Jamwal, Assoc. Prof. (PBG)	International Conference on Grain legume	IIPR, Kanpur	14-02-2009	16-02-2009	3
12	Dr. S.K. Sudan, Asstt. Prof. (PBG)	Technologies for quality seed production of vegetable crops	SKUAST-Jammu	08-12-2008	28-12-2008	21
13	Dr. B.B. Gupta, Professor (PBG)	Annual Rice Group Meeting	IGKVV, Raipur	10-04-2008	14-04-2008	5
14	Dr. Anil Gupta, Assoc. Prof. (Plant Pathology)	Annual Rice Group Meeting	IGKVV, Raipur	10-04-2008	14-04-2008	5
15	Mr. Rajan Salalia, Asstt. Prof. (Entomology)	Annual Rice Group Meeting	IGKVV, Raipur	10-04-2008	14-04-2008	5
16	Dr. M.K. Khushu, Professor (Agrometeorology)	Review meeting of AICRPAM along with the training programme on Impact of Climate Change	CRIDA, Hyderabad	24-06-2008	26-06-2008	3
		District Agromet Services Meeting under the project Integrated Agromet Advisory Services for farmers of J&K State	SKUAST-Kashmir	04-06-2008	04-06-2008	1
		Biennial Workshop of AICRP on Agromet	BCKV, Nadia	03-12-2008	05-12-2008	3

17	Dr. Mahender Singh, Technical Officer (AAS)	Annual Review Meeting of Integrated Agromet Advisory Services	AAU, Anand	10-11-2008	13-11-2008	4
		Alternate land use systems for resource conservation, emerging market needs and mitigation of climate change in rainfed regions	CRIDA, Hyderabad	16-01-2009	05-02-2009	21
18	Dr. Amarjit S. Bali, Professor (Agronomy)	Review Meeting of Nationa Director, NAIP and World Bank consultant	VPKAS, Almora	23-07-2008	27-07-2008	5
		Review Workshop of NAIP	CSKHPKV, Palampur	26-11-2008	27-11-2008	2
19	Dr. Meenakshi Gupta, Asstt. Prof. (Agronomy)	Conservation farming through efficient use of resources to sustain livelihood of dryland farmers of north west Himalayas	SKUAST-Jammu	16-01-2009	05-02-2009	21
20	Mrs. Neetu Sharma, Asstt. Prof. (Agronomy)	Conservation farming through efficient use of resources to sustain livelihood of dryland farmers of north west Himalayas	SKUAST-Jammu	16-01-2009	05-02-2009	21
21	Dr. Anil Kumar, Assoc. Prof. (Agronomy)	Annual Group Meeting of AICRP-WC (ICAR)	RAU, Bikaner	26-02-2009	01-03-2009	4
22	Dr. M.S. Nain, Assoc. Prof. (Agril. Extn. Edu.)	Advances in educational technology	CCSHAU, Hisar	17-11-08	07-12-08	21
23	Dr. P.S. Slathia, Asstt. Prof. (Agril. Extn. Edu.)	Training cum workshop on extension methods	EEI, Nilokheri	28-05-08	02-06-08	05
24	Dr. Nafees Ahmad, Asstt. Prof. (Agril. Extn. Edu.)	Training cum workshop on extension methods	EEI, Nilokheri	28-05-08	02-06-08	05
25	Dr. Poonam Parihar, Asstt. Prof. (Agril. Extn. Edu.)	Training cum workshop on extension methods	EEI, Nilokheri	28-05-08	02-06-08	05
26	Dr. Monica Sood, Asstt. Prof. (PHT)	Designer and functional foods through extrusion	CIPHET, Ludhiana	29-11-2008	19-12-2008	21

		cooking technology				
27	Dr. Jagmohan Singh, Asstt. Prof. (PHT)	Conservation farming through efficient use of resources livelihood of dry land farmers of north-eastern Himalayas	SKUAST-Jammu	16-01-2009	05-02-2009	21
28	Dr. Sanjay Swami, Asstt. Prof. (Soil Science)	Recent advances in diagnostic technologies and management of poor quality water/soils	CSSRI, Karnal	18-11-2008.	08-12-2008	21
		Developing winning research proposals in agricultural research	NAARM, Hyderabad	14-10-2008	20-10-2008	07
29	Dr. Renu Gupta, Asstt. Prof. (Soil Science)	Integrated plant nutrient supply system for enhancing soil quality, input use efficiency and crop productivity	IARI, New Delhi	15-12-2008	05-01-2009	21
30	Er. N. K. Gupta, Sr. Scientist (Agril. Engineering)	Consultation meeting on Impact Assessment of watershed	NIRD, Hyderabad	01-12-08	01-12-2008	1
31	Dr. Vijay Bharti, Jr. Scientist (Agronomy)	National Symposium on SRI	TNAU, Coimbatore	1-12-2008	03-12-2008	3
32	Dr. Sanjay Khar, Asstt. Prof. (Agril. Engineering)	Post harvest management	IARI Regional Station, Karnal	06-12-2008	26-12-2008	21
33	Dr. J.P. Sharma, Professor (Vegetables)	Advances in microbial diversity and disease management for sustainable crop production	GBPUA&T, Ranichauri	13-10-2008	15-10-2008	3
		Seminar on maintenance of pure stock of genotypes held	PPVFRA, New Delhi	12-2-2009	12-2-2009	1
34	Dr. Sandeep Chopra, Asstt. Prof. (Vegetables)	IP and technology management in the ICAR system	CCSHAU, Hisar	19-5-2008	21-5-2008	3
		Technologies for quality seed production of vegetable crops	SKUAST-Jammu	8-12-2008	28-12-2008	21
35	Dr. Sanjeev Kumar, Asstt. Prof. (Vegetables)	Group meeting of all Indian Coordinated Research Project (Vegetable Crops)	TNAU, Coimbatore	12-2-2009	15-02-2009	3
36	Dr. Sheetal Dogra,	Technologies for	SKUAST-	8-12-2008	28-12-2008	21

	Asstt. Prof. (Vegetables)	quality seed production of vegetable crops	Jammu			
37	Mr. Balbir Dhotra, Asstt. Prof. (Vegetables)	Technologies for quality seed production of vegetable crops	SKUAST-Jammu	8-12-2008	28-12-2008	21
38	Dr. Sudhakar Dwivedi, Asstt. Prof. (Agril. Econ.)	Geo-spatial Knowledge Management in sustainable rural livelihood security	NAARAM, Hyderabad	04-06-2008	13-06-2008	10
		Evolving rural marketing strategies for north west Himalayas	VPKAS, Almora	20-01-2009	24-01-2009	05
39	Dr. Manish Kumar, Asstt. Prof. (Statistics)	Advanced Quantitative Techniques in Agricultural Research	IASRI, New Delhi	02-12-2008	22-12-2008	21
40	Dr. S.P. Singh, Asstt. Prof. (Agril. Econ.)	Sustainable agricultural development for food security	IARI, New Delhi	08-01-2009	28-01-2009	21
41	Dr. D.P. Abrol, Professor (Entomology)	Visited Deptt. of Behavioral Ecology, Institute of Environmental Sciences, Jagiellonian University, Krakow, Poland in connection with the ALARM	ALARM Project	10-07-2008	26-07-2008	17
		DBT Project meeting	Baramati, Pune	4-08-2008	04-08-2008	1
		Visited ETH laboratory Zurich Switzerland as apart of collaborative project on *Crithidia* parasites of bumble bees, analyzing genotypic variability in bumblebee populations and their immunity to parasites	ETH Zurich	31-10-2008	20-11-2008	21
		National symposium on IPM Strategies combat emerging pests in the current scenario of climatic change	CHF, CAU, Pasighat, A.P	27-01-2009	29-01-2009	3
		Biennial Group Meeting of AICRP on honeybees and pollinators	RAU, Pusa, Bihar	19-02-2009	20-02-2009	2

		DBT Project Group Meeting	University of Calicut, Calicut	24-03-2009	25-03-2009	2
42	Dr. Hafeez Ahmad, Assoc. Prof. (Entomology)	Annual Workshop on monitoring of pesticides residues	KAU, Vellayani, Kerala	28-11-2008	28-11-2008	1
43	Dr. Devinder Sharma, Asstt. Prof. (Entomology)	Ecological based IPM in fragile hill agro-ecosystem	SKUAST-Jammu	14-07-2008	03-08-2008	21

Faculty of Veterinary Sciences & Animal Husbandry

S. No.	Name of Scientist with Designation	Training Attended	Training Agency	Period		Duration (Days)
				From	To	
1	Dr. A.K. Das, Assoc. Prof. (Animal Genetics & Breeding)	Genetic improvement of farm animals using advanced breeding and biotechnological strategies	NDRI, Karnal	03-12-2008	23-12-2008	21
2	Dr. Deepak Sharma, Assoc. Prof. (Animal Genetics & Breeding)	Advances in breeding and management technologies for improvement in livestock productivity	NDRI, Karnal	25-03-2009	14-04-2009	21
3	Dr. S.K. Kotwal, Professor (Vety. Public Health & Hygiene)	International Symposium on food safety, quality assurance and global trade: concerns and strategies	GBPUA&T, Pant Nagar	07-11-2008	09-11-2009	3
4	Dr. H.K. Sharma, Asstt. Prof. (Vety. Public Health & Hygiene)	Conference on New horizons in food security with special reference to Veterinary Public Health and Hygiene-Evolving strategies with global perspective	Association of Public Health Veterinarians, Lucknow	19-11-08	21-11-08	3
5	Dr. R.N. Choudhary, Asstt. Prof. (Surgery & Radiology)	Ultrasonography and other ancillary diagnostic techniques in veterinary patients	GADVASU, Ludhiana	04-09-2008	24-09-2008	21
6	Dr. Vijay Pandey, Asstt. Prof. (Vety. Biochemistry)	National Training Programme on Application of bioinformatics tools in animal genome analysis	NDRI, Karnal	27-01-2009	16-02-2009	21
7	Dr. Sharad Kumar, Asstt. Prof. (Vety. Clinic & Teaching Hospital)	Achieving dairy heard fertility objective through integrated therapeutic and management practices	GADVASU, Ludhiana	09-01-2009	29-01-2009	21
8	Dr. A. K. Tripathi, Asstt. Prof. (Vety. Clinic &	Advance in management procedure for emergency and critical; care in farm and pet	TANVASU, Chennai	11-11-2008	01-12-2008	21

	Teaching Hospital)	animal				
9	Dr. R. B. Kushwaha, Asstt. Prof. (Vety. Clinic & Teaching Hospital)	Ultrasonography and ancillary diagnostic procedure for veterinary patients	GADVASU, Ludhiana	04-09-2008	24-09-2008	21
10	Dr. Seema, Asstt. Prof. (Vety. Clinic & Teaching Hospital)	Update in Clinical Medicines	MVC, TANVASU, Chennai	05-11-2008	25-11-2008	21
11	Dr. Bablu Kumar, Asstt. Prof. (Vety. Microbiology & Immunology)	Role of ICT-bridging the knowledge deficit gap	IMPA and MANAGE, Hyderabad	10-05-2008	14-05-2008	05
		Annual Conference of Indian Association of Veterinary Microbiologists Immunologists and specialist in infectious diseases	IVRI, Izatnagar	25-11-2008	26-11-2008	2
12	Dr. Rajesh, Asstt. Prof. (Vety. Microbiology & Immunology)	National Conference of Indian Virological Society	PGI, Chandigarh	11-12- 2008	12-12-2008	2
13	Dr. Sanjay Agrawal, Asstt. Prof. (Animal Reproduction, Gynecology & Obstetrics)	Genetic Improvement of farm animals using advanced breeding and biotechnological strategies	NDRI, Karnal	3-12-2008	23-12-2008	21
14	Dr. Nishi Pande, Asstt. Prof. (Animal Reproduction, Gynecology & Obstetrics)	Ultrasonography and ancillary diagnostic procedures for veterinary patients	GADVASU, Ludhiana	4-09-2008	24-09-2008	21
15	Dr. Vikas Pathak, Assoc. Prof. (Livestock Products Technology)	International symposium on Food safety, quality assurance and global trade: Concerns and strategies and VII annual conference of Indian association of veterinary public health specialists	GBPUAT, Pantnagar	07-11-2008	09-11-2008	2
16	Dr. R.K. Sharma, Assoc. Prof. (Animal Nutrition)	World Animal Nutrition Confererence-2009	Animal Nutrition Association, India	14-02-2009	17-02-2009	4
17	Dr. Ravindra Kumar, Asstt. Prof. (Animal Nutrition)	World Animal Nutrition Confererence-2009	Animal Nutrition Association, India	14-02-2009	17-02-2009	4

Stations/Sub-Stations/Scheme/Centers

S. No	Name of Scientist with Designation	Training Attended	Training Agency	Period		Duration (Days)
				From	To	
1	Dr. V. S. Verma, Sr. Scientist (Plant Pathology)	Annual Group Meeting of AICRPDA	OUAT, Bhubaneshwar	02-06-2008	04-06-2008	03
		Group Meeting of Maize based cropping system of AICRPDA Centres	DFRS, Arjia,Bhilwara	19-01-2009	22-01-2009	04
2	Dr. Peeyush Sharma, Jr. Scientist (Soil Science)	Conservation farming through efficient use of resources to sustain livelihood of dryland farmers of north-western Himalayas	SKUAST-Jammu	16-01-2009	05-02-2009	21
		Current Trends in Biotechnology and Implications in Agriculture	SVBUAT, Meerut	19-02-2009	21-02-2009	03
3	Dr. Reena, Jr. Scientist (Entomology)	Annual Rabi Group Meet of Chickpea andMULLaRP	MPUAT, Udaipur	07-09-2008	09-09-2008	03
		Conservation farming through efficient use of resources to sustain livelihood of dryland farmers of north-western Himalayas	SKUAST-Jammu	16-01-2009	05-02-2009	21
		Awareness training programme on beekeeping	SKUAST-Jammu	02-03-2009	04-03-2009	03
4	Dr. Sonika Jamwal, Jr. Scientist (Plant Pathology)	Recent Advances in Biological control of Plant Diseases 'CAS'	GBPUAT, Pantnagar	18-03-2009	09-04-2009	21
5	Dr. Anil Sharma, Jr. Scientist (Soil Science)	Group Meeting of Maize based cropping system of AICRPDA Centres	DFRS, Arjia, Bhilwara	19-01-2009	22-01-2009	04
		Emerging concepts of soil and water management in drylands	CRIDA, Hyderabad	10-02-2009	02-03-2009	21
6	Sh. Vikas Gupta, Jr. Scientist (Agronomy)	Group Meeting of Maize based cropping system of AICRPDA Centres	DFRS, Arjia, Bhilwara	19-01-2009	22-01-2009	04
		Emerging Concepts of Soil and Water Management in Drylands	CRIDA, Hyderabad	10-02-2009	02-03-2009	21
7	Dr. V. K. Singh Jr. Scientist	Emerging Trends in Plant Physiological and	BHU, Banaras	02-02-2009	22-02-2009	21

	(Plant Pathology)	Biotechnological Paradigms for Sustainable Agriculture				
8	Sh. Permendra Singh Jr. Scientist (Agronomy)	International Conference on Grain Legumes: Quality Improvement, Value Addition and Trade	IIPR, Kanpur	14-2- 2009	16-2-2009	3
9	Dr. N. K. Pankaj, Asstt. Prof. (Pharmacology & Toxicology)	Pesticide and Veterinary Drug Residues in Foods of Animal Origin	GBPUAT, Pantnagar			21
10	Dr. Prabhakar Kumar, Asstt. Prof. (Anatomy &Histology)	Recent Development in Animal Production and Reproduction	IVRI, Izatnagar	03-12- 2008	23-12-2008	21
11	Dr. R. M. Sharma, Sr. Scientist (Pomology)	3rd Indian Horticultural Congress	OUAT, Bhubneshwar			04
12	Dr. A. K. Singh, Jr. Scientist (PBG)	7th Refresher course in Agricultural Sciences	BHU, Varanasi			21
		National Symposium on Scenario of Agriculture in Changing Climatic Conditions	SVBPAU, Meerut	18-10-2008	19-10-2008	2
13	Dr. Vishal Raina, Jr. Scientist (PBG)	Technology for quality seed production of vegetable crops	SKUAST-Jammu			21
14	Dr. A. K. Sharma, Assoc. Director Research (Agronomy)	National group meeting of AICRP on Forage crops	MPKV, Rahuri	18-04-2008	20-04-2008	3
		District Agromet Advisory Services Meeting	SKUAST-Srinagar	04-06-2008	--	1
15	Dr. S. B. Singh, Sr. Scientist (PBG)	Breeding for Quality-Conventional and Genomic approaches	CAS, PAU, Ludhiana	07-01-2009	27-01-2009	21
		4th National Symposium on Scenario of agriculture in changing climatic conditions	SVBPAU, Meerut	18-10-2008	19-10-2009	2
		International Conference on Current trends in biotechnology	SVBPAU, Meerut	19-02-2009	21-02-2009	3
16	Dr M. H. Chesti, Jr. Scientist (Soil-Science)	Integrated plant nutrient supply and management system for enhancing soil quality, input use	IARI, New Delhi	15-12-2008	05-01-2009	21

		efficiency and crop productivity				
17	Sh. S. K. Mishra, Jr. Scientist (Agronomy)	Advances in Commercial Agriculture	GBPUAS&T, Pantnagar	18-04-2009	06-04-2009	21
18	Dr. A. Kohli, Jr. Scientist (Soil-Science)	Annual review meeting of Integrated Agromet Advisory Services and 3rd National Seminar on Agrometerological Services for farmers	Anand University, Anand	10-11-2008	13-11-2008	4
19	Dr. Dileep Kachroo, Chief Scientist (CSR)	Chief Scientist and Agronomist meeting	PDCSR, Modipuram	7-06-2008	8-06-2008	2
		Biannual Workshop of AICRP on Cropping System	Vivekananda Centre, Kanyakumari	03-10-2008	05-10-2008	3
20	Dr. Vijay Khajuria, Jr. Scientist (CSR)	Chief Scientist and Agronomist meeting	PDCSR, Modipuram	7-06-2008	8-06-2008	2
		Developing new options in Integrated Nutrient Management for Sustainable Crop Production and Soil Health	PDCSR, Modipuram	8-12-2008	28-12-2008	21
21	Dr. N. P. Thakur, Sr. Scientist (CSR)	Biannual Workshop of AICRP on Cropping System.	Vivekananda Centre, Kanyakumari	03-10-2008	05-10-2008	3
		Recent Advances in Diagnostic Technologies and Management of Poor Quality Water and Soil	CSSR, Karnal	18-11-2008	08-12-2008	21
22	Dr. Harinder Singh, Sr. Scientist (CSR)	Biannual Workshop of AICRP on Cropping System	Vivekananda Centre, Kanyakumari	03-10-2008	05-10-2008	3
23	Dr. Rohit Sharma, Jr. Scientist (CSR)	Developing new options in Integrated Nutrient Management for Sustainable Crop Production and Soil Health	PDCSR, Modipuram	8-12-2008	28-12-2008	21

KVKs

S. No	Name of Scientist with Designation	Training Attended	Training Agency	Period		Duration (Days)
				From	To	
1	Dr. Vinod Gupta SMS (Extension Education)	National seminar on Current Agrarian Issues: Response of Agricultural Information System	IARI, New Delhi	07.01.2009	08.01.2009	2
		International Seminar on World Trade Organization	Green Cross Society, Agra	13.02.2009	14.02.2009	2
		Website Designing	PAU, Ludhiana			10
		Extension methods	SKUAST-Jammu	28.05.2008	02.06.2008	6
		Support to extension reforms	Directorate of Ag., Jammu	03.10.2008	08.10.2008	6
2	Dr. R.S. Bandral, SMS (Entomology)	Website Designing	PAU, Ludhiana			10
3	Dr. P.K. Rai, SMS (Soil Science)	Website Designing	PAU, Ludhiana	28.07.2008	08.08.2008	10
4	Dr. Avinash, SMS (Animal Sciences)	Website Designing	PAU, Ludhiana			10
5	Dr. Rakesh Nanda, Programme Coordinator (Extension Education)	5th National Extension Education Congress	CSAUAT, Kanpur	05.03.2009	07.03. 2009	03
6	Dr. Brajesh Ajrawat, SMS (Extension Education)	Participatory research for Main streaming gender concerns in Agriculture	NRCWA, Bhuvaneswar	04-12-2008	24-12-2008	21
		Support to extension reforms	Directorate of Ag., Jammu	03.10.2008	08.10.2008	6
7	Dr. Anamika Jamwal, SMS (Plant Protection)	Recent advances in biological control of plant diseases	GBPUA&T, Pantnagar	20.03.2009	09.04.2009	21
8	Dr. Bharat Bhushan, SMS, (Extension Education)	Extension methods	SKUAST-Jammu	28.05.2008	02.06.2008	6
		Support to extension reforms	Directorate of Ag., Jammu	03.10.2008	08.10.2008	6
		Entrepreneurship Development in Agriculture	IARI, New Delhi	05.01.2009	25.01. 2009	21
9	Dr. Banarsi Lal, SMS	Support to extension reforms	Directorate of Ag., Jammu	03.10.2008	08.10.2008	6

	(Extension Education)					
10	Dr. B. Brahma, SMS (LPM)	Bridging the knowledge deficit : Role of ICT	IMPA, Jammu	10.05.2008	14.05.2008	5
11	Ms. Ravneet Kour, SMS (Pomology)	Techniques for quality seed production in vegetable crops	SKUAST-Jammu	08.12.2008	28.12.2008	21
12	Dr. S.K. Lehria, Programme Coordinator (Agronomy)	Conservation farming system through efficient use of resources to sustain livelihood of dry land farmers of N-W Himalayas	SKUAST-Jammu	16.01.2009	05.02.2009	21
13	Dr. Julie D. Bandral, SMS (Home Science)	Orientation Programme for Home Scientists in KVKs	SVBPUAT, Meerut	19.03.2009	20.03.2009	2
14	Dr. Sheetal Badyal, SMS (Home Science)					
15	Dr. A.S. Charak, SMS (Agronomy)	Advances in commercial agriculture	CAS, GBPUAT, Pantnagar	18.03.2009	07.04.2009	21
16	Dr. Neerja Sharma, SMS (Horticulture)	Technologies for quality seed production of vegetable crops	SKUAST-Jammu	08.12.2008	28.12.2008	21
17	Dr. Sanjeev Kumar, SMS (Plant Breeding)	Breeding for quality-conventional and genomic approaches	PAU, Ludhiana	07.01.2009	27.01.2009	21
18	Sh. Pawan Kumar Sharma SMS (Economics)	Sustainable agriculture development for food security	IARI, New Delhi	08.01.2009	28.01.2009	21
19	Sh. Vishal Mahajan, SMS (Agroforestry)	Agro forestry for farm diversification and carbon sequestration	PAU. Ludhiana	28.01.2009	17.02.2009	21
20	Scientific Staff of all KVKs	Organic Farming	SKUAST-Jammu	24.01.2009	-	1
21	Scientific Staff of all KVKs	Economics and statistical analysis of Front Line Demonstration	SKUAST-Jammu	25.01.2009	-	1

Annexure-IV

Externally Funded Research Projects (2008-09)

Horticulture Technology Mini-Mission-1 (ICAR)

S.No	Title of the Project	Principal Investigator
1.	Production of quality planting material for ornamental crops in Jammu.	Dr. R. K. Pandey (Vegetables)
2.	Seed production for hybrid and open pollinated varieties of vegetables under mid hill conditions of Jammu.	Dr. J. P. Sharma (Vegetables)
3.	Development and transfer of mass production and delivery technology of Trichoderma under farmer's field.	Dr. Vishal Gupta (Plant Pathology)
4.	Development of demonstration of integrated multiple disease management modules for solanacious vegetables under Himalayan agro eco system.	Dr. V. K. Razdan (Plant Pathology)
5.	Biological Control of powdery mildew of ber under rainfed Agro-eco system of Jammu subtropics.	Dr. V. K. Razdan (Plant Pathology)
6.	Refinement and demonstration of production and protection technology for the cultivation of organic vegetables.	Dr. S K Singh (Plant Pathology)
7.	Integrated insect pest and disease, nutrient and water management of gladiolus.	Dr. S K Singh (Plant Pathology)
8.	Development and demonstration of integrated pest management modules in cucumber.	Dr. C. S. Kalha (Plant Pathology)
9.	Development of weather based forecasting model for commercially important diseases of off season vegetables in mid hills of Jammu.	Dr. V. K. Razdan (Plant Pathology)
10.	Spawn production of edible mushrooms from Himalayan Eco system.	Dr. P. K. Raina (Plant Pathology)
11.	Agro technique refinement and biological suppression of annar butterfly for wild pomegranate (Anardana) in J&K.	Dr. R. K. Gupta (Entomology)
12.	Management of emerging pest problems on olive orchards of J&K hills: Development and validation of location specific.	Dr. R. K. Gupta (Entomology)
13.	Planned honeybee pollination for improvement in Horticultural crops production.	Dr. D. P. Abrol (Entomology)
14.	On farm trainings on recent trends in integrated insect pest and disease management for sub tropical fruits.	Dr. R. K. Arora (Entomology)
15.	Development and promotion of IPM modules in temperate vegetable crops of Jammu.	Dr. Uma Shankar Singh (Entomology)
16.	On farm trainings on integrated nutrient management for sub tropical fruit crops of Jammu division.	Dr. Vikas Sharma (Soil Science)
17.	Diagnosis and recommendation of integrated nutrient management in vegetable crops of river bed areas of Jammu region.	Dr. Vikas Sharma (Soil Science)
18.	Integrated nutrient management for major fruit crops of kandi region of Jammu.	Dr. Vikas Sharma (Soil Science)
19.	Technology refinement and demonstration of integrated weed management in commercially important vegetable and ornamental crops.	Dr. Anil Kumar (Agronomy)

20.	Technology refinement in micro irrigation and fertigation for improving quality and productivity of important horticultural crops in rainfed areas of Jammu.	Dr. Dileep Kachroo (Agronomy)
21.	Identification and production of seed and planting material of kala zeera (*Bunium persicum*) (Boiss) fedr. in Jammu region.	Dr. S. K. Gupta (Agro forestry)
22.	Collection, evaluation and mass multiplication of under utilized medicinal tree species.	Dr. K. K. Sood (Agro forestry)
23.	Production of quality planting material for sub tropical fruits.	Dr. Ravi Kher (Pomology)
24	Promotion of year round mushroom cultivation for self employment in Jammu Division	Dr. C.S. Kalha (Plant Pathology)
25	Trench cultivation of vegetables as livelihood security in perennial river beds of Jammu	Dr. R.K. Samnotra (Vegetables)
26	Value addition and post harvest handling of perishable agrohorticulture produce for women empowerment in J&K	Dr. Raj Kumari (PHT)
27	Promotion of biological control, key component of management of soil boron pathogens for sustainable horticulture in Jammu province of J&K State	Dr. Vishal Gupta (Plant Pathology)
28	Investigation into honeybee disease and their management for agri-horticulture crop production and sustainable bee keeping	Dr. D.P. Abrol (Entomology)
29	Factors effecting the olive oil quality and characterization of olive oil using standard protocols for technology transfer for effective marketing of the oil.	Dr. A.K. Tiku (Plant Physiology)

Indian Council of Agricultural Research (ICAR)

1	Seed Production in Agricultural crops and Fisheries.	Director Research
2	Experiential learning- setting up of facilities for hands on training on Hi tech nursery for horticultural crops.	Dr. V. K. Wali (Pomology)
3	Enhancement of livelihood security through farming systems and related farm enterprises in north-west Himalayas.	Dr. Amarjit S. Bali (Agronomy)

National Oilseeds and Vegetable Oils Development Board (NOVOD)

1.	National Network on Integrated Development of Jatropha.	Dr. Md. Saleem (Agro forestry)

Department of Science & Technology (DST)

1	Development of scented basmati hybrids using cytoplasmic male sterile system in rice in Jammu region.	Dr. R. K. Salgotra (PBG)
2	Introduction of white rust resistance into *B. napus* and its rapid fixation through doubled haploidy breeding following anther/microscope culture.	Dr. S.K. Gupta (PBG)

3	Free radical scavenger and antioxidant activities of selected north-western Himalayan medicinal plants	Dr. Sanjay Guleria (Biochemistry)
4	On-farm Training on recent trends in silk worm rearing technology.	Dr. Ajay Koul (Sericulture)

Ministry of Earth Science (MES)

1.	All India Co ordinated Research Project on Agro Advisory Services.	Dr. M. K Khushu (Agrometeorology)

Department of Bio-Technology (DBT)

1	Training on mushroom cultivation for income generation in rural areas to uplift rural economy.	Dr. Deepak Kumar (Plant Pathology)
2	Morphometry and phylogeography of honeybees and stingless bees in India.	Dr. D. P. Abrol (Entomology)
3	Isolation and characterization of equine myogenic satellite cells.	Dr. N. K. Singh (Vety. Surgery)
4	Empowering of Rural Women through backyard Farming in Jammu	Dr. Rajesh Katoch (Vety. Parasitology)

Ministry of Food Processing, Govt. of India

1.	Quality control laboratory.	PHT

National Medicinal Plants Board (NMPB)

1	Establishment of herbal Garden at SKUAST-J Main Campus Chatha.	Dr. Md. Saleem (Agro forestry)
2	Germplasm collection and mass propagation of *Rauvolfia Serpentina* Benth. Ex Kurz and *Gloriosa superba* L.	Dr. Lalit Mohan Gupta (Agro forestry)

Department of Agriculture & Cooperative., Ministry of Agriculture, Govt. of India

1.	Monitoring of Pesticide Residues at National Level.	Dr. Mohd. Hafez (Entomology)

Ministry of Water Resources

1	Farmers' Participatory Action Research Programme	Dr Rajinder Dhar (WMRC)

Ministry of Agriculture Sciences, Govt. of India

1	Scaling-up of Water Productivity for livelihood in Agriculture through Training and Demonstration	Er. N.K.Gupta (WMRC)

ALL INDIA CO-ORDINATED RESEARCH PROJECTS

S.No	Title of the project	Directorate/ Division	Funding Agency
1	All India Coordinated rice improvement project, Chatha	Genetics & Plant Breeding	ICAR
2	Cropping System Research, Chatha	Directorate of Research	ICAR
3	All India Coordinated project on wheat and barley, Chatha	Genetics & Plant Breeding	ICAR
4	Water Management Research, Chatha	Directorate of Research	ICAR
5	All India Co- ordinated Research Project on Chickpea, Samba	Directorate of Research	ICAR
6	All India Co- ordinated Research Project on Agrometeorology, Chatha	Directorate of Research	ICAR
7	All India Co-ordinated Research Project on Dry land Research, Dhiansar	Directorate of Research	ICAR
8	All India Co ordinated Research Project on Maize, Udhampur	Directorate of Research	ICAR

ANNEXURE-V

MEETINGS OF THE UNIVERSITY AUTHORITIES

UNIVERSITY COUNCIL MEETING

3rd University Council Meeting of Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu was held on March 28, 2009 under the chairmanship of His Excellency Sh. N.N. Vohra, Governor of Jammu and Kashmir and Chancellor of SKUAST-Jammu. The meeting was also attended by Jenab Omar Abdullah, Chief Minister of J&K and Pro-Chancellor of SKUAST-Jammu, Dr. B. Mishra Hon'ble Vice-Chancellor, SKUAST-Jammu, Dr. Anwar Alam, Hon'ble Vice-Chancellor, SKUAST-Kashmir and Smt. Sonali Kumar, Principal Secretary, Agriculture Production Department, J&K Govt. and Sh. B.B. Vyas, Principal Secretary to His Excellency, Governor of Jammu & Kashmir

BOARD OF MANAGEMENT MEETINGS

12th Board of Management of Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu was held on 27th Feb, 2009 under the Chairmanship of Dr. B. Mishra, Hon'ble Vice-Chancellor, SKUAST-Jammu

RESEARCH COUNCIL MEETING

The 10th Research Council Meeting of Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu was held in the Conference Hall at Main Campus, Chatha, Jammu on 24 - 25th February, 2009 under the chairmanship of Dr. B. Mishra, Hon'ble Vice-Chancellor of SKUAST-Jammu. Dr. H.S. Gupta, Director, Vivekananda Parvatiya Krishi Anusandhan Sansthan, Almora (ICAR) and Dr. B.K. Joshi, Director, National Bureau of Animal Genetic Resources, Karnal (ICAR) participated as the experts of eminence from agriculture and veterinary fields, respectively. Dr. N. A. Sudhan, Director Research, Dr. K.S. Risam, Director Extension Education, Dr. R.M. Bhagat, DRI cum Dean PG Studies/Dean, FOA, , Dr. A.R. Nazki, Dean F.V.Sc. & A.H., Associate Directors of Research and Extension Education, Associate Dean FOA, and Heads of the Divisions participated in the meeting. Representatives from the development Departments viz., Mrs. Vinod Bala Sharma, Director Agriculture, Jammu, Mr. J.L. Sharma,

Director Horticulture, Jammu, Mrs. Nirmal Sharma, Director, CAD, Jammu also participated in the meeting. Dr. N. A. Sudhan, Director Research welcomed and thanked them for their participation in the meeting. He specially thanked the experts of eminence for accepting the invitation and being present in the meeting. Dr. Deepak Kher, Associate Director Research,

highlighted the achievements in various research projects including 60 externally funded projects and informed the house that during 2008-09, 12 new externally funded projects had been sanctioned for the University. He informed the house that the suggestions given in the previous RCM had been incorporate and the new research projects were formulated accordingly. Dr. B. Mishra, Hon'ble Vice Chancellor, in his key note address, emphasized the importance of seed replacement programme, maintenance of seed quality for increasing the production and the need of identifying Seed Villages for quality seed production. Similarly, the need was to identify different agro-climatic zones. He also advocated the importance of production of fruits and vegetable crops particularly seed production in vegetables. He desired that the University should refine the available technologies, develop new varieties suited to different ecologies and strengthen work on farming system mode involving dairy, poultry and fishery. Dr. Mishra further stressed upon the importance of live stock improvement and Animal Husbandry in the hill agriculture. He alarmed that the scarcity of water, managing rainfed agriculture and effect of climate change with respect to the State of J & K in general and that of Jammu in particular.

Academic Council Meeting

8th Meeting of Academic Council of Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu was held on 12th May, 2008 at R.S. Pura under the Chairmanship of then Hon'ble Vice-Chancellor Dr. Nagendra Sharma

FINANCE COMMITTEE MEETING

The Finance Committee Meeting of Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu was held on 20th May, 2008 under the Chairmanship of then Hon'ble Vice-Chancellor Dr. Nagendra Sharma.

ANNEXURE-VI

MEMBERS OF UNIVERSITY COUNCIL (As on 31/03/2009)

His Excellency **Sh. N.N. Vohra** Governor J&K State (Hon'ble Chancellor, SKUAST-Jammu)	**Chairman**
Jenab Omar Abdullah Hon'ble Chief Minister, J&K State (Hon'ble Pro-Chancellor, SKUAST-Jammu)	**Member**
Hon'ble Minister for Agriculture, Co-operatives & fisheries, J&K State	**Member**
Dr. Mangala Rai Secretary (DARE) & Director General (As specialist) Indian Council of Agriculture Research, Krishi Bhavan, New Delhi-110 001	**Member**
Dr. V. K. Taneja Hon'ble Vice Chancellor, Guru Angad Dev University of Veterinary Sciences, Ludhiana	**Member**
Dr. B. Mishra Hon'ble Vice Chancellor, SKUAST-Jammu	**Member**
Dr. Anwar Alam Hon'ble Vice Chancellor, SKUAST-Kashmir	**Member**
Mrs. Sonali Kumar (IAS) Principal Secretary to Govt. Agriculture Production Department, J&K Govt., Jammu	**Member**
Sh. Sudhanshu Pandey, (IAS) Commissioner/Secretary to Govt., (Financial Advisor-SKUAST-Jammu)	**Member**
Dr. R. K. Sharma Registrar, SKUAST-Jammu	**Non-Member Secretary**

ANNEXURE-VII

Members of Board of Management (As on 31/03/2009)

Dr. B. Mishra Hon'ble Vice Chancellor, SKUAST of Jammu	**Ex-Officio Chairman**
Sh. S.L. Bhatt, IAS Principal Secretary, Planning & Development Department, J&K Govt	**Member**
Mrs. Sonali Kumar, IAS Principal Secretary to Govt., Agriculture Production Department, J&K Govt	**Member**
Sh. Sudhanshu Pandey, (IAS) Commissioner/Secretary, Finance Department, J&K Govt.	**Member**
Dr. R. M. Acharya, Ex-Dy. Director General (ICAR) Plot No-784, Sector-09, Faridabad (Haryana)	**Member**
Dr. K. A. Singh Director, Indian Grassland & Fodder Research Institute, Jhansi (U.P)	**Member**
Dr. A. K. Srivastava, Director, NDRI, Karnal, Haryana,	**Member**
Dr. K. S. Risam, Director Extension Education, SKUAST-Jammu	**Member**
Dr. R.M. Bhagat, DRI-cum-Dean, PGS SKUAST-Jammu	**Member**
Dr. N.A. Sudhan, Director Research SKUAST-Jammu	**Member**
S. Harinder Singh Benagarhia, Progressive Farmer, R/o Banagarh, R. S. Pura, Jammu	**Member**
Sh. Raj Kumar Gupta, M/S R. K. Rice & General Mills, Sarore Adda, Bari Brahmana, Jammu	**Member**
Dr. R. K. Sharma, Registrar, SKUAST-Jammu	**Non-Member Secretary**

ANNEXURE-VIII

MEMBERS OF RESEARCH COUNCIL

The Vice-Chancellor	Chairman
The Director, Agriculture Department	Member
The Director Horticulture Department	Member
The Director Sheep Husbandry	Member
The Director Animal Husbandry	Member
The Director of Fisheries	Member
All the Directors of the University	Member (Director Research Member Secretary)
All Deans of the Faculties	Member
All Heads of Divisions/Regional Stations/Colleges	Member
Two eminent scientists of eminence from outside to be nominated for particular meetings by the Vice-Chancellor for their specialized knowledge of subject or subjects on the agenda of the meeting	Member
Project & Planning & Monitoring Officer	Member

MEMBERS OF EXTENSION EDUCATION COUNCIL ANNEXURE-IX

The Vice-Chancellor	Ex-officio Chairman
Agriculture Production Commissioner	Member
Director, Agriculture	Member
Director Horticulture Department	Member
Director Sheep Husbandry	Member
Director Animal Husbandry	Member
Chief Conservator of the Forests	Member
Director of Fisheries	Member
All Directors of the University	Member (Director Extension Education Member Secretary)
Project Planning and Monitoring Officer All Deans of the Faculties	Member
All Heads of Divisions/Regional Stations/Colleges	Member
Two eminent persons in the field of Extension Education from outside nominated by the Vice-Chancellor for any particular meeting in accordance with the requirement of the agenda.	Member
Three farmers having specialization in general agriculture, horticulture, animal husbandry and other allied branches, to be nominated by the Vice-Chancellor for their specialized knowledge and experience.	Member
One representative each of under mentioned organizations as per the request of the Vice-Chancellor (a) Community Rural Development Department, (b) Co-operative Department, (c) State Agro-Industries Development Corporation, (d) Irrigation Department, (e) Fertilizer Corporation of India, (f) National Seeds Corporation *etc*	Member

MEMBERS OF ACADEMIC COUNCIL

ANNEXURE-X

The Vice-Chancellor	Ex-officio Chairman
Director Resident Instruction	Member
Director Research	Member
Director Extension Education	Member
Deans of faculties	Member
Heads of the Divisions/Regional Research Stations/Colleges/Institutes	Member
One Teacher from each faculty to be nominated by the Vice-Chancellor	Member
One Professor having special knowledge or practical experience in respect of the subjects basic to Agriculture, Veterinary Science and other allied Sciences from each of the Universities of the State	Member
University Librarian	Member
Registrar	Ex-officio Member Secretary
Project Planning & Monitoring Officer	Member
One post-graduate student (Ph.D) on the basis of academic merit to be nominated by the Vice-Chancellor on rotation	Member

Annexure-XI

Appointments and Superannuations (2008-09)

Appointments

The university in the recent past has witnessed a revolutionary change with the joining of new vice-chancellor, Dr. B. Mishra w.e.f. November 14, 2008. His rich experience farsighted vision and upright individuality make him a complete leader to set the right agenda in the right direction For an institution like that of an agricultural university which has resulted in a perceptible change in the overall mindset of the faculty and staff of the university. his personal interaction/intervention and motivation will go a long way in the transformation of this university into an institution of repute on national / international level.

Dr. Mishra – a famous rice and wheat breeder and distinguished and successful plant breeder and research manager, headed the Directorate of Rice Research (DRR), Hyderabad and Directorate of Wheat Research (DWR), Karnal - the two most important crops, rice and wheat, contributing more than 75 % to National Food basket. He was National rice and wheat research programme leader for more than eight years. He has co-ordinated several important national and international research projects (ICAR-UNDP, IRRI-ADB, Indo-UK, ICAR-IRRI, CSSRI-UoS- IRRI, DFID, World Bank/EEU aided CSSRI-UPLDC, ACIAR-ICAR, Indo-Swiss (ISCB), ICAR- CIMMYT, ICAR-ICARDA) etc. His pioneering work on genetics of salinity tolerance and ion uptake in rice is well recognized worldwide. Of the several salt tolerant and high yielding rice varieties (CSR 10, CSR 13, CSR 23, CSR 27, CSR 30, CSR 36 and Jarava) and one early rice hybrid (DRRH 2) were developed by him. CSR-10 and CSR-30 have revolutionized rice production in the fragile saline / sodic soil areas. CSR 30 is the World's first Basmati variety possessing salt tolerance has now replaced the best quality Basmati type Taraori Basmati and also adapted to normal soil. It occupies more than 90 per cent of the traditional type basmati area in Haryana. Dr. Mishra has made outstanding contribution in developing low-cost biological amelioration technology for salt affected soils through development and popularization of CSR 10 variety which is substitute of chemical amendment for resource poor farmers. He has done pioneering work of introgressing 3 BLB genes (xa5, xa 13 & Xa21) in Sambha Mahsuri variety of rice which has now been released for commercial cultivation. Another most significant contribution made under his leadership was the development of rice hybrids in India which has now spread from an area of 0.1 mha to more than 1.2 mha. As Project Director, he has facilitated the development and release of 144 rice including hybrids, 21 wheat, 1 triticale and 3 barley varieties suited for different ecologies. He has coordinated the national gene pyramiding project of rice, wheat, maize, chickpea and tomato, functional genomics and many others. He was also involved in the development and release of wheat variety, DBW 17, a subsitute of PBW 343 and one malt barley variety DWRUB 52. Novel research initiatives like pyramiding of rust resistance genes (Yr5, Yr10, Yr15, Lr34, Lr37) in the background of popular wheat cultivars like PBW 343, HUW 234 and Lok 1 have been initiated during his leadership. He has played a key role in formulating strategies to tackle threat of a new stem rust race Ug99. He has visited many countries (USA, UK, Australia, China, Japan, Italy, Philippines, Mexico, France, Netherlands, Spain, Vietnam, Indonesia, Thailand, Pakistan, Egypt, Australia, Mexico etc.). To his credit he has 427 publications including 74 refereed research papers in international & national

journals of repute. He has guided 8 PhD and 3 MSc students and organized 315 training programmes and many national/international conferences. He has been Chairman / Member of many Board of Management / Academic Council / Management Committee / Research Advisory Committee and Selection Board of SAUs and ASRB, New Delhi. He is recipient of many prestigious international and national awards and honours- Rafi Ahmed Kidwai (ICAR), AK Richharia (Best Rice Scientist - International Year of Rice), Hari Om Ashram Trust (ICAR), Rao Bahadur Dr. Ram Dhan Singh Memorial Award (CCS HAU) and International Senadhira Award (IRRI, Philipines) and several other recognitions like Fellow of National Academy of Agricultural Sciences (NAAS) and Member of International Organizing Committee of 12th International Wheat Genetics Symposium.

During the year 2008-09, several posts were filled in governance, teaching, non-teaching.

B. Superannuation

C.

Governance			
	Name	**Designation**	**Date of Superannuation**
	Dr. Nagendra Sharma	Vice Chancellor	04-09-2008
	Sh. S.C. Uppal	University Librarian	01-03-2009
Scientific Staff			
	Name	**Designation**	**Date of Superannuation**
	Dr. J. Prabhakara	Chief Scientist (WMRC)	31-01-2009
Non-Teaching			
	Name	**Designation**	**Date of Superannuation**
	Sh. C.P. Sharma	STA	30-04-2008
	Sh. S.K. Chowdhary	Asstt. Manager	23-10-2008 (resigned from the services)
	Sh. Dayal Singh	FCLA	30-09/2008
	Sh. P.D. Sharma	Dy. Registrar (Est.)	31-10-2008
	Sh. Krishan Lal	Mali	01-11-2008 (Voluntary Retirement)
	Sh. Ram Lal Atri	Asstt. Registrar	31-03-2009

ANNEXURE-XII

PERSONNEL⇨ (AS ON 31/03/2009)

Governance:		
VICE-CHANCELLOR'S OFFICE		
S.No	Name	Designation
1	Dr. B. Mishra	Hon'ble Vice-Chancellor
2	Sh. V. B. Gupta+	SVC
3	Sh. Sanjay Sharma	PRO
DRI-Cum-DEAN POST GRADUATE STUDIES		
1	Dr. R.M. Bhagat	DRI-cum-Dean PGS
2	Dr. S. B. Bakshi	Dy. Director, Student Welfare
3	Dr. A. K. Gupta	Medical Officer
4	Dr.(Mrs.) Sushma Gupta	Medical Officer
5	Sh. Keemti Lal	Assistant Registrar
DIRECTORATE OF EXTENSION EDUCATION		
1	Dr. Kernel Singh Risam	Director Extension Education
2	Dr. Pramod Baru	Associate Director Extn. Education
3	Dr. R. K. Arora*	Associate Director Extn. Education
DIRECTORATE OF RESEARCH		
1	Dr. N.A. Sudhan	Director Research
2	Dr. R. K. Gupta	Associate Director Research
3	Dr. Deepak Kher*	Associate Director Research
4	Dr. R. R. Jat*	Associate Director Research
5	Dr. Pradeep Wali	Deputy Director Research
6	Dr. M. C. Dwivedi	Farm Manager
7	Dr. A. K. Singh	Farm Manager
8	Dr. Ajay Gupta	Assistant Director Research (Attached with MSP, Chatha)
REGISTRAR OFFICE		
1	Dr. R. K. Sharma	Registrar
2	Sh. A. K. Koul	Deputy Registrar (Academics)
3	Sh. Tarsem Raj	Assistant Registrar
4	Sh. Manohar Lal	Assistant Registrar
COMPTROLLER OFFICE		
1	Sh. V. K. Soi	Comptroller
2	Sh. Sohan Lal Sharma	Store Purchase Officer
3	Sh. R. K. Kapoor	Assistant Comptroller
4	Smt. Veena Gupta	Assistant Comptroller
5	Sh. Jitender Raina	Assistant Comptroller
6	Sh. Babu Ram	Assistant Comptroller
7	Sh. Vijay Sharma	Assistant Comptroller

PROJECT PLANNING &MONITORING OFFICE		
1	Sh. S.C. Bhasin	Project Planning & Monitoring Officer
ESTATES DIVISION OFFICE		
1	Sh. Deputy Lal Sharma	Estate Officer
2	S. Iqbal Singh Sudan	Executive Engineer
3	Sh. Kewal Kumar Raina	Assistant Executive Engineer
LIBRARY		
1	Dr. Sreenivasulu	University Librarian
2	Smt. Shashi Prabha Raina	Assistant Librarian
3	Sh. Leela Dhar Mangi	Assistant Librarian

FACULTY OF AGRICULTURE, CHATHA		
DEAN'S OFFICE		
1	Dr. R.M. Bhagat	Incharge Dean
2	Dr. C.S. Kalha	Associate Dean
3	Smt. Hansey Koul	Administrative Officer
4	Smt. Raj Kumari Aima	Assistant Registrar
5	Sh. Devinder Samotra	Account Officer
DIVISION OF AGRONOMY		
1	Dr. Amarjit S. Bali	Professor
2	Dr. B. C. Sharma	Associate Professor
3	Dr. Anil Kumar	Associate Professor
4	Dr. Ashok K. Gupta	Associate Professor
5	Mr. Bodu Ram Bazaya	Assistant Professor
6	Dr. Meenakshi Gupta	Assistant Professor
7	Mrs. Neetu Sharma	Assistant Professor
8	Dr. Sarabdeep Kour*	Assistant Professor
DIVISION OF AGRICULTURAL ECONOMICS & STATISTICS		
1	Dr. A. B. Khan*	Professor
2	Dr. Arshad Mahmood*	Professor
3	Dr. S.E.H. Rizvi*	Professor
4	Dr. Jyoti Punjabi	Professor
5	Dr. Manish Kumar	Assistant Professor
6	Dr. S. P. Singh	Assistant Professor
7	Dr. Sudhakar Dwivedi	Assistant Professor
DIVISION OF AGRICULTURE EXTENSION EDUCATION		
1	Dr. G. R. Bhagat	Professor
2	Dr. S. K. Kher *	Professor
3	Dr. Rajinder Peshin	Associate Professor
4	Dr. M. S. Nain	Associate Professor
5	Dr. P. S. Slathia	Assistant Professor
6	Dr. Nafees Ahmad	Assistant Professor
7	Dr. Poonam Parihar	Assistant Professor

DIVISION OF GENETICS AND PLANT BREEDING		
1	Dr. S. K. Gupta*	Professor
2	Dr. B. B. Gupta *	Professor
3	Dr. Bikram Singh*	Professor
4	Dr. A.K. Razdan	Professor
5	Dr. S. K. Mondal	Associate Professor
6	Dr. B. S. Jamwal	Associate Professor
7	Dr. S.K. Sudan	Assistant Professor
8	Dr. Tuhina Dey	Assistant Professor
9	Mr. Praveen Singh	Assistant Professor
10	Dr. A. K. Singh	Assistant Professor
11	Dr. G. K. Rai	Assistant Professor
DIVISION OF PLANT PATHOLOGY		
1	Dr. Vijay Razdan *	Professor
2	Dr. P. K. Raina	Associate Professor
3	Dr. S. K. Singh	Assistant professor
4	Dr. Deepak Kumar	Assistant Professor
5	Dr. Sachin Gupta	Assistant Professor
6	Dr. R. S. Sodhi	Assistant Professor
7	Dr. Vishal Gupta	Assistant Professor
DIVISION OF FRUIT SCIENCE & POST HARVEST TECHNOLOGY		
I)FRUIT SCIENCE SECTION		
1	Dr. Ravi Kher	Professor
2	Dr. V. K. Wali *	Professor
3	Dr. Parshant Bakshi	Assistant Professor
4	Dr. Mahital Jamwal	Assistant Professor
5	Dr. Arti Sharma	Assistant Professor
II) POST HARVEST TECHNOLOGY SECTION		
1	Dr. Raj Kumari Kaul *	Professor
2	Dr. Anju Bhat	Associate Professor
3	Dr. Jagmohan Singh*	Assistant Professor
4	Dr. Monica Sood	Assistant Professor
DIVISION OF SERICULTURE		
1	Dr. Ajay Koul	Professor
2	Dr. Kalu Ram*	Professor
3	Dr. S. P. Devi *	Associate Professor
4	Dr. R. K. Bali	Associate Professor
5	Sh. R. L. Bhagat	Assistant Professor
6	Sh. Darshan Singh	Assistant Professor

DIVISION OF AGRICULTURAL ENGINEERING		
1	Dr. C. K. Lidhoo	Professor
2	Er. A. K. Raina	Associate Professor
3	Er.Sushil Sharma	Associate Professor
4	Er. Sandeep Mann	Associate Professor
5	Dr. Sanjay Khar	Assistant Professor
6	Er. R. K. Srivastava	Assistant Professor
DIVISION OF AGRO-FORESTRY		
1	Dr. Mohd. Saleem	Professor
2	Dr. S. K. Gupta	Associate Professor
3	Dr. K. K. Sood	Associate Professor
4	Dr. N. S. Raina	Associate Professor
5	Dr. L.M. Gupta	Assistant Professor
6	Dr. Sandeep Sehgal	Assistant Professor
7	Ms. Meenakshi Gupta	Assistant Professor

DIVISION OF BIOCHEMISTRY & PLANT PHYSIOLOGY		
1	Dr. A. K. Tiku *	Professor
2	Dr. S. A. Mallick*	Professor
3	Dr. Sanjay Guleria	Associate Professor
4	Dr. Moni Gupta	Assistant Professor
5	Mr. Gurdev Chand	Assistant Professor
6	Dr. Vikas Sharma	Assistant Professor
7	Dr. B.K.Sinha	Assistant Professor
DIVISION OF ENTOMOLOGY		
1	Dr. D. P. Abrol*	Professor
2	Dr. Virender Kaul *	Professor
3	Dr. Hafeez Ahmad	Associate Professor
4	Dr. R. K. Gupta *	Associate Professor
5	Dr. Kuldeep Srivastava	Assistant Professor
6	Dr. Uma Shankar	Assistant Professor
7	Dr. Devinder Sharma	Assistant Professor
DIVISION OF VEGETABLE SCIENCE & FLORICULTURE		
1	Dr. Jag Paul Sharma	Professor
2	Dr. Arun Gupta*	Professor (Attached with FFPVRA, Chennani)
3	Dr. R. K. Samnotra	Associate Professor (Attached with FFPVRA, Chennani)
4	Dr. R. K. Pandey	Associate Professor
5	Dr. Sandeep Chopra	Assistant Professor
6	Dr. Satesh Kumar	Assistant Professor
7	Dr. Sanjeev Kumar	Assistant Professor
8	Dr. Deep Ji Bhat	Assistant Professor
9	Mr. Manoj Kumar	Assistant Professor
10	Dr. Sheetal Dogra	Assistant Professor
11	Mr. Balbir Dhotra*	Assistant Professor

DIVISION OF SOIL SCIENCES AND AGRIL. CHEMISTRY		
1	Dr. A. K. Bhat *	Professor
2	Dr. M. P Sharma *	Professor
3	Dr. K.R. Sharma	Professor
4	Dr. Asim K. Mondal	Associate Professor
5	Dr. Vikas Sharma	Assistant Professor
6	Dr. Sanjay Swami	Assistant Professor
7	Dr. A. P. Rai	Assistant Professor
8	Dr. Renu Gupta*	Assistant Professor

FACULTY OF VETERINARY SCIENCES AND ANIMAL HUSBANDRY, R.S. PURA		
DEAN'S OFFICE		
1	Dr. A.R. Nazki	Acting Dean
2	Mr. Raman Sharma	Accounts Officer
DIVISION OF VETERINARY PUBLIC HEALTH & HYGIENE		
1	Dr. S. K. Kotwal*	Professor
2	Dr. H. K. Sharma	Assistant Professor
3	Dr. M. R. Sheikh	Assistant Professor
DIVISION OF VETERINARY PATHOLOGY		
1	Dr. Shagufta Azmi	Associate Professor
2	Dr. Nawab Nashiruddullah	Associate Professor
3	Dr. D Basheer Ahamed	Assistant Professor
4	Dr. Shilpa Sood	Assistant Professor
DIVISION OF PARASITOLOGY		
1	Dr. Rajesh Katoch	Professor
2	Dr. J. K. Khajuria	Associate Professor
3	Dr. Anish Yadav	Assiociate Professor
4	Dr. Sanku Borkataki	Assistant Professor
DIVISION OF PHARMACOLOGY & TOXICOLOGY		
1	Dr. Rajinder Raina*	Professor
2	Dr. Mudasir Sultana	Professor
3	Dr. Shahid Prawez	Assistant Professor
4	Dr. Nrip K. Pankaj	Assistant Professor
5	Dr. Pawan K. Verma	Assistant Professor
DIVISION OF VETERINARY BIOCHEMISTRY		
1	Dr. Vijay Pandey	Assistant Professor
2	Dr. Aditi Koul	Assistant Professor
3	Dr. Pratiksha Raghuwanshi	Assistant Professor
DIVISION OF VETERINARY PHYSIOLOGY		
1	Dr. A. R. Nazki	Professor
2	Dr. P.S. Mahapatra	Associate Professor
2	Dr. Jonali Devi	Assistant Professor
3	Dr. Jafrin Ara Ahmed	Assistant Professor

Division of Vety. Surgery & Radiology		
1	Dr. M. M. S. Zama *	Professor
2	Dr. H. R. Bhardwaj	Associate Professor
3	Dr. N. K. Singh	Assistant Professor
4	Dr. Ankur Sharma	Assistant Professor
5	Dr. D.K. Dwivedi	Assistant Professor
Division of Veterinary Clinical Medicine & Jurisprudence		
1	Dr. S. K. Gupta	Professor
2	Dr. J. S. Soodan	Associate Professor
3	Dr. Rajiv Singh	Associate Professor
4	Dr. Kafil Hussain	Assistant Professor
5	Dr. Neelesh Sharma	Assistant Professor
6	Dr. S. R. Upadhayay	Assistant Professor
7	Dr. R. K. Bhardwaj	Assistant Professor
Division of Veterinary Epidemiology & Preventive Medicine		
1	Dr. A. K. Raina	Professor
2	Dr. V. S. Wazir	Associate Professor
3	Dr. M. A. Malik	Associate Professor
4	Dr. Rajeev Singh	Assistant Professor
5	Dr. Rajesh Agrawal	Assistant Professor
6	Dr. Abha Tikoo*	Assistant Professor
Division of Animal Genetics & Breeding		
1	Dr. A. K. Das	Associate Professor
2	Dr. R. K. Taggar	Associate Professor
3	Dr. Deepak Sharma	Assistant Professor
4	Dr. Vikas Vohra	Assistant Professor
5	Dr. Nishant Kumar	Assistant Professor
Division of Animal Nutrition		
1	Dr. R. K. Sharma	Associate Professor
2	Dr. Keshab Barman	Assistant Professor
3	Dr. Ankur Rastogi	Assistant Professor
4	Dr. Ravindra Kumar	Assistant Professor
Division of Vety. Microbiology& Immunology		
1	Dr. Anil Taku	Associate Professor
2	Dr. M. Altaf Bhat	Associate Professor
3	Dr. Bablu Kumar	Assistant Professor
4	Dr. Rajesh	Assistant Professor

DIVISION OF ANATOMY & HISTOLOGY		
1	Dr. Archana Pathak	Associate Professor
2	Dr. Shalini Suri	Associate Professor
3	Dr. Kamal Sarma	Assistant Professor
4	Dr. Prabhakar Kumar	Assistant Professor
5	Dr. Praveen Kumar Gahlot	Assistant Professor
6	Dr. Probal Jyoti Doley	Assistant Professor
DIVISION OF LIVESTOCK PRODUCTS TECHNOLOGY		
1	Dr. Vikas Pathak	Associate Professor
	Dr. Arvind Kumar	Assistant Professor
DIVISION OF VETERINARY CLINIC & TEACHING HOSPITAL		
1	Dr. M.S. Bhadwal*	Professor
2	Dr. Utsav Sharma	Associate Professor
3	Dr. Ajay Kumar Gupta	Associate Professor
4	Dr. Ashok Kumar	Assistant Professor
5	Dr. Sharad Kumar	Assistant Professor
6	Dr. Arvind Kumar Tripathi	Assistant Professor
7	Dr. Ram Bilash Kushwaha	Assistant Professor
8	Dr. Seema	Assistant Professor
DIVISION OF VETY. & AH EXTENSION		
1	Dr. Gautam	Assistant Professor
DIVISION OF LIVESTOCK PRODUCTION & MANAGEMENT		
1	Dr. Asma Khan	Assistant Professor
2	Ms. Sahar Masud	Assistant Professor
3	Dr.Thirumurugan	Assistant Professor
4	Dr. Depanjali Konwar	Assistant Professor
DIVISION OF ANIMAL REPRODUCTION, GYNECOLOGY & OBSTETRICS		
1	Dr. M. Mutha Rao	Associate Professor
2	Dr. Sudarshan Kumar	Associate Professor
3	Dr. Sanjay Agarwal	Assistant Professor
4	Dr. W.A.A. Razzaque	Assistant Professor
5	Dr. Anil Kumar Pandey	Assistant Professor
6	Dr. Sudhir Kumar	Assistant Professor
7	Dr. Nishi Pande	Assistant Professor

REGIONAL/SUB-RESEARCH STATIONS/CENTRES/SCHEMES		
Regional Agricultural Research Station, Rajouri		
1	Dr. A. K. Sharma	Associate Director Research
2	Dr. S. B. Singh*	Sr. Scientist (PBG)
3	Dr. Anshuman Kohli	Jr. Scientist (Soil Science)
4	Sh. Kamlesh Bali	Jr. Scientist (Entomology)
5	Sh. Manmohan Sharma	Jr. Scientist (PBG)
6	Sh. Vikas Sharma	Jr. Scientist (Agronomy)
7	Sh. Anil Bhushan	Jr. Scientist (Olericulture)
8	Dr. Ashok Kumar Singh	Jr. Scientist (Pl. Pathology)
9	Sh. Sunil Kumar Mishra	Jr. Scientist (Agronomy)
10	Dr. M. H. Chesti	Jr. Scientist (Soil Science)
11	Dr. Anjani Kumar Singh	Jr. Scientist (PBG)
12	Dr. J.S. Manhas	Jr. Scientist (Agril. Extension)
Maize Breeding Research Sub Station, Poonch		
1	Sh. Magdeshwar Sharma	Jr. Scientist (Entomology)
2	Dr. S. K. Pandey	Jr. Scientist (GPB)
3	Dr. A. K. Singh	Jr. Scientist (Entomology)
4	Dr. Bupesh Kumar	Jr. Scientist (PBG)
Regional Horticultural Research Sub Station, Bhaderwah		
1	Dr. R. M. Sharma	Sr Scientist (Pomology)
2	Mr. Amit Jasrotia	Jr. Scientist (Pomology)
3	Dr. J. N. Srivastava	Jr. Scientist (Plant Pathology)
4	Dr. M. K. Pandey	Jr. Scientist (Plant Pathology)
5	Dr. Vishal Raina	Jr. Scientist (PBG)
6	Mr. Brijeshwar Singh	Jr. Scientist (Plant Pathology)
7	Dr. A. K. Singh	Jr. Scientist (Agronomy)
8	Dr. Neeraj Kotwal	Jr. Scientist (Entomology)
9	Dr. A. C. Jha	Jr. Scientist (Plant Pathology)
10	Dr. Kiran Kour	Jr. Scientist (Pomology)
11	Mr. Manoj Kumar*	Jr. Scientist (Soil Science)
12	Dr. Rakesh Kumar	Jr. Scientist (Pomology)
13	Dr. Upma Dutta	Jr. Scientist (Plant Pathology)
Rain fed Horticultural Research Sub Station, Raya		
1	Dr. Sanjeev Rai	Jr. Scientist (Entomology)
2	Dr. Vijay Bahadur Singh	Jr. Scientist (Plant Pathology)
3	Dr. Neeraj Gupta	Jr. Scientist (PHT)
Dry land Research Sub Station, Dhiansar		
1	Dr. V. S. Verma *	Sr. Scientist (Plant Pathology)
2	Er. J. P. Singh	Jr. Scientist (Agril. Engg.)
3	Dr. Peeyush Sharma	Jr. Scientist (Soil Science)
4	Dr. V. K. Singh	Jr. Scientist (Plant Pathology)
5	Mr. Permendra Singh	Jr. Scientist (Agronomy)
6	Dr. Reena Kumari	Jr. Scientist (Entomology)
7	Dr. Sonika Jamwal	Jr. Scientist (Plant Pathology)
8	Dr. Anil Sharma	Jr. Scientist (Soil Science)

9	Dr. Brinder Singh*	Jr. Scientist (Soil Science)
10	Sh. Jai Kumar*	Jr. Scientist (Agronomy)
Pulse Research Sub-Station, Samba		
1	Dr. Bikram Singh *	Chief Scientist (GPB)
2	Dr. S. K. Singh	Jr. Scientist (Plant Pathology)
3	Sh. B. N. Singh	Jr. Scientist (Agronomy)
Cropping System Research Project, (ICAR), Chatha		
1	Dr. Dileep Kachroo	Chief Scientist
2	Dr. Narendera Pal Thakur	Jr. Scientist (Soil Science)
3	Dr. Vijay Khajuria	Jr. Scientist (Agronomy)
Water Management Research Centre,(ICAR) Chatha		
1	Dr. A.S. Bali	I/c Chief Scientist (Water Management)
2	Dr. Rajinder Dhar	Sr. Scientist (Agronomy)
3	Er. Narinder Kumar Gupta	Sr. Scientist (Ag. Engineering)
4	Dr. A. Samanta	Sr. Scientist (Soil Science)
5	Dr. Vijay Bharti	Jr. Scientist (Agronomy)
All India Co-ordinated Research Project on Rice (icar), Chatha		
1	Dr. Anil Gupta *	Sr. Scientist (Plant Pathology)
2	Sh. Rajan Salalia	Jr. Scientist (Entomology)
3	Dr. Ramesh Kumar Salgotra	Jr. Scientist (GPB)
4	Smt. Anuradha Saha	Jr. Scientist (Agronomy)
All India Co-ordinated Research Project on Maize, (ICAR) Udhampur		
1	Sh. Akhil Verma	Jr. Scientist (Agronomy)
2	Dr. Ravinder Singh Sudan	Jr. Scientist (GPB)
ALL INDIA CO-ORDINATED RESEARCH PROJECT ON AGROMETEOROLOGY (ICAR), CHATHA		
1	Dr. M. K. Khushu*	Chief Scientist (Agromet)
2	Dr. Mahender Singh	Technical Officer (AAS)
KRISHI VIGYAN KENDRAS		
KRISHI VIGYAN KENDRA, R.S. PURA		
1	Dr. Rakesh Nanda	Programme Coordinator
2	Dr. Vinod Gupta	SMS (Agriculture Extension)
3	Dr. Rakesh Bandral	SMS (Plant Protection)
4	Dr. Pradeep K. Rai	SMS (Soil)
5	Dr. Avinash	SMS (Animal Sciences)
6	Dr. Shyam Prasad Gupta	SMS (Horticulture) Attached with RHRSS, Raya
7	Dr. Anil Kumar Sharma	SMS (Agronomy)
KRISHI VIGYAN KENDRA, RAJOURI		
1	Dr. Shahid Ahmed	Programme Coordinator
2	Dr. A. P. Singh	SMS (Agronomy)
3	Sh. Manoj Kumar	SMS (Horticulture)
4	Dr. Abhay Kumar Sinha	SMS (Agriculture Engineering)
5	Sh. Rakesh Sharma	SMS (Agriculture Extension)
6	Sh. Puneet Choudhary	SMS (Agroforestry)

KRISHI VIGYAN KENDRA, BHADERWAH, DODA		
1	Dr. R. M. Sharma	Incharge
2	Dr. Bharat Bhushan	SMS (Extn. Education) attached with AICRP on maize, udhampur
3	Dr. B. Brahama	SMS (LPM)
4	Ms. Ravneet Kour	SMS (Horticulture)
5	Dr. Julie Dogra	SMS (Home Science)
6	Mr. Sanjay Khajuria	SMS (Agroforestry)
7	Dr. Amit Singh Charak	SMS (Agronomy)
KRISHI VIGYAN KENDRA, REASI, UDHAMPUR		
1	Dr. Vikas Tandon	Programme Coordinator
2	Dr. Banarsi Lal	SMS (Extn. Education)
3	Dr. Rajesh Kumar	SMS (Horticulture)
4	Dr. S. K. Rai	SMS (PBG)
5	Dr. Sheetal Badyal	SMS (Home Science)
6	Sh. Lalit Upadhaya	SMS (Agro-forestry)
	Sh. Vikas Abrol	SMS (Soils)
KRISHI VIGYAN KENDRA, POONCH		
1	Dr. Harsh Vardhan Singh	Programme Coordinator
2	Dr. Neerja Sharma	SMS (Horticulture)
3	Dr. Arvind Kumar Isher	SMS (Entomology)
4	Dr. Sanjeev Kumar	SMS (Plant Breeding)
5	Dr. Vishal Mahajan	SMS (Agroforestry)
6	Dr. Suraj Prakash	SMS (Agriculture Extension)
7	Sh. Pawan Kumar Sharma	SMS (Economics)
KRISHI VIGYAN KENDRA, KATHUA		
1	Dr. Amrish Vaid	Programme Coordinator
2	Dr. Berjesh Ajrawat	SMS ((Agriculture Extension)
3	Dr. Anamika Jamwal	SMS (Plant protection)
4	Dr. Vivak M. Arya	SMS (Soil Science)
5	Dr. Rajeev Bharat	SMS (Agronomy)

IMPORTANT DIGNITARIES VISITED THE UNIVERSITY (2008-09)

S. No	Name	Designation
	J&K State	
1	Smt. Pritiba Devi Singh Patil	Her Excellency, President of India
2	Sh. N.N.Vohra	Hon'ble Governor, J&K state
3	Gen. S. K. Sinha (Retd)	Ex. Hon'ble Governor, J&K state
4	Jenab Ghulam Nabi Azad	Ex. Hon'ble Chief Minister, J&K state
5	Dr. Montek S. Aluwallia	Dy. Chairman, Planning Commission, Govt of India
6	Dr. H.P. Singh	Dy. Director General (Horticulture), ICAR
7	Smt. Sonali Kumar	Secretary Agriculture Production, Govt of J&K
8	Sh. B. B. Vyas	Then Principal Secretary to His Excellency, Governor of J&K
9	Dr. S. N. Puri	Vice Chancellor, CAU, Manipur
10	Dr. M. S Kang	Vice Chancellor, PAU, Ludhiana
11	Dr. A. L. Choudhary	President, Veterinary Council of India
12	Dr. H. S. Gupta	Director, VPKAS, Almora
13	Dr. Nazeer Ahmad	Director, CITH, Srinagar
14	Dr. M.S.Aulakh,	Dean, College of Agriculture, PAU, Ludhina
15	Dr. U.C. Sharma	Vice President, ICWQ
16	Dr. P. K. Mishra	Project Coordinator, AICRPDA, CRIDA Hyderabad

17	Mr. M.S. Dhillon	Director, Central Water Commission, MoWR
18	Dr. S.K. Sharma	Consultant Ground Water
19	Dr. B. K. Joshi	Director, NBAGR Karnal

His Excellency Sh. N. N. Vohra Governor of J&K interacting with scientists of SKUAST-Jammu

Sh. Montek S. Ahluwalia, Dy. Chairman, Planning Commission, GOI interacting with scientists

Dr. H. P. Singh, DDG Horticulture interacting with scientists

Visit of Sh. S. L. Bhat, Acting Vice-Chancellor, SKUAST-J at R.S. Pura.

Dr. Nazeer, Director CITH interacting with Scientist at Main Campus, Chatha.