



## JAMMU AND KASHMIR

### Improved package improves income of maize-wheat system

#### GPS Location

Latitude	Longitude	Altitude (m)
32°42'051'' N	075°09'344'' E	621.6

Maize and wheat are two major crops grown in the Samba district of Jammu and Kashmir. The annual rainfall received is 1142mm. The major constraint of the area for low yielding surfaced was the application of imbalanced nutrients (urea and DAP only). Shri Prem Singh having 1.2 ha located in village Kuralta, Samba district was adopted for the addressing the constrains on experimental basis. Nutrient application used by the farmer before intervention per hectare in maize – wheat crops was 28.98, 27.27 kg N and P<sub>2</sub>O<sub>5</sub> with FYM @ 1.5 t/ha. Yield of crops obtained by the farmer before intervention is given below.

Season	Crop	Variety	Grain yield (kg/ha)	Price (Rs/kg)	Straw yield (kg/ha)	Price (Rs/kg)	Total net returns (Rs/ha)
<i>Kharif</i>	Maize	Local	2690	14	5480	2	28140
<i>Rabi</i>	Wheat	Local	2680	14.80	4180	3	33204
Total	-	-	5370	-	9660	-	61344

On-Farm Research Centre of AICRP on IFS located in Samba district under the Sher-e-Kashmir University of Agricultural Sciences & Technology, Jammu conducted the on-farm experiment on response of crops to applied nutrients in farmers participatory mode. Recommended dose of N, P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O and ZnSO<sub>4</sub> @ 90:60:30:20 kg/ha to mazie and 100:50:25:20 kg/ha to wheat was tested in improved variety along with farmers package. The results are given below.



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Season	Crop	Variety	Grain yield (kg/ha)	Price (Rs/kg)	Straw yield (kg/ha)	Price (Rs/kg)	Total net returns (Rs/ha)
<i>Kharif</i>	Maize	Kanchan	3380	14.00	6740	2	40800
<i>Rabi</i>	Wheat	PBW 175	3620	14.80	5770	3	51886
Total	-	-	7000	-	12510	-	92686
Difference	-	-	+1630	-	+2850	-	+31342



Response of maize and wheat to applied nutrients and improved package in Samba district of Jammu and Kashmir. Due to improved variety of maize and wheat with balanced application of nutrients, farmer received Rs. 31342/ha as additional net returns with investment of only Rs. 4400/ha on account of seed and additional fertilizer cost.

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## IFS interventions improves income of small farm household

### GPS Location

Latitude	Longitude	Altitude (m)
32°37'692" N	074°54'269" E	314.5

Shri Ramesh Kumar s/o Basant Ram in Tanda village of Vijaypur block is a small farmer having holding of size 1.6 ha was selected under AICRP on for on-farm research during 2011-12. The farmer was traditionally having crop+dairy farming system cultivating rice-wheat system, berseem and fodder with cow. The lower crop and livestock yield was identified as constraints due to use of local/own seed, use of imbalanced nutrients (N and P only), lack of technical knowledge about crop cultivation and imbalanced feeding of livestock. After getting in contact with OFR team the farmer was taught to use balanced fertilizers and improved seeds for crops and supplement of mineral mixture to dairy animals. Diversification of crops was also under taken with early rice, vegetable pea and summer blackgram. The farmer was also supported by providing vanaraja poultry chicks for background poultry and mushroom



Berseem



Vanaraja poultry

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**Dhingri mushroom for higher income**



**Improved package of wheat**

(Dhingri) for enhancing the income from farm. Due to the IFS interventions, farmer is getting round the year income The income obtained is given below.

Particular	Traditional method (Rs)	IFS interventions (Rs)	Additional (Rs)	% income over traditional method
Cost (Rs)	7683	75620	+3937	5.5
Net income (Rs)	190377	240350	+49973	26.2



**Capacity building on mushroom production**



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## Improved package of rice–wheat system improves income

### GPS Location

Latitude	Longitude	Altitude (m)
32°33'490" N	074°59'235" E	312.8

Shri Khazan Singh having holding of 0.6 ha in Badali village of Samba district of Jammu and Kashmir grows rice-wheat and maize-wheat systems. OFR Centre of AICRP on IFS under Sher-e-Kashmir University of Agricultural Sciences and



**On-farm nutrient response of rice-wheat system in Samba district of Jammu and Kashmir**

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Technology, Jammu conducted the on-farm nutrient response in rice-wheat system. The results of expenditure and income are given below.

Particulars	Farmers package	Improved package with balanced nutrients	Additional	%
Cost (Rs/ha)	44410	47540	3130	7.0
Net Income (Rs/ha)	67710	87867	20157	29.7



**Visit of monitoring team on-fam experiments**

Farmers package: Basmati 370 variety with 40:40 kg N and  $P_2O_5$  and 1.5 t/ha of FYM to rice and local/own seed of wheat with 40:50 kg N and  $P_2O_5$ .

Improved package: Basmati 370 variety with 30:20:10:20 kg N,  $P_2O_5$ ,  $K_2O$  and  $ZnSO_4$ /ha and PBW 550 wheat with 100:50:20 kg N,  $P_2O_5$ ,  $K_2O$ /ha.

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## Improved farming system enhances income of marginal farm household

### GPS Location

Latitude	Longitude	Altitude (m)
32°38'026" N	074°53'521" E	310.3

Shri Saudagar Mal a resident of Bassikhurd, Block Vijaypur, Samba having 0.8 ha area came into contact with scientists of OFR centre, Samba of AICRP on IFS under Sher-e-Kashmir University of Agricultural Sciences and Technology, Jammu of during survey. It has been found that the farmer was cultivating only rice during *kharif* and wheat during *rabi*. The main constraints identified were: use of local seed, low crop yield, use of imbalanced fertilizer, lack of technical knowledge about crop cultivation, imbalance feeding/rearing of livestock and conventional method of crop cultivation.



Improved packages of practical in integrated farming system approach

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With the consistent efforts and interactions of the scientists of AICRP on IFS, the farmer agreed to integrate more profitable components in farming system mode. The improved and high yielding variety of paddy (PB 370), wheat (PBW 550), technical knowledge about crop cultivation, use of balanced nutrients (potash and Zn), crop diversification of wheat with vegetable pea and black gram, mineral mixture for better nutrition of animal and mushroom cultivation for improving profitability and livelihood of farmer was undertaken. The income obtained through IFS interventions are given below.

Particular	Traditional method (Rs)	IFS interventions (Rs)	Additional (Rs)	% income over traditional method
Cost (Rs)	35740	40460	4720	13.2
Net income (Rs)	95766	135784	40018	41.7



**Mineral mixture to livestock and mushroom for income enhancement**

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## Fruits of crop diversification : Double income

### GPS Location

Latitude	Longitude	Altitude (m)
32°41'526" N	75°09'589" E	606

Shri Dhantar Singh of Mugwal village of Samba district having 0.8 ha of land was growing only maize-wheat with local variety and traditional practices. He came in to contact with OFR Centre, Samba of AICRP on IFS under Sher-e-Kashmir University of Agricultural Sciences and Technology, Jammu. After assessing the constraints, scientists suggested the crop diversification with pulses, vegetables for raising the



Diversification of maize-wheat system with maize, vegetables and pulses

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income. The farmer immediately agreed and practiced under the guidance of OFR scientists.

The income of the farmer doubled due to crop diversification with better B : C ratio.

Practices	Cropping system			Cost of cultivation (Rs/ha)	Net return (Rs/ha)	B : C ratio
	<i>Kharif</i>	<i>Rabi</i>	Summer			
Farmers' package	Maize	Wheat	-	45806	64969	1.4
Crop diversification/ intensification	Maize (kanchan) + okra	Potato (Kufri badshah)	Onion (N 53)	98510	167913	1.7
	Maize + blackgram	Vegetable pea	Okra	65000	120000	1.8



**Diversification of maize-wheat system with okra, vegetable pea and onion**

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## IFS interventions changes life style of marginal farmer

### GPS Location

Latitude	Longitude	Altitude (m)
32°37'210" N	074°55'760" E	329.5

Shri Sultan Mohamad resident of Sarore village in Samba district of Jammu and Kashmir came to contact with the scientists of AICRP-IFS during field visit. He told his problem that he along with his son having no source of earning during the off season. He was having 0.9 ha and conventional cultivation of crops and rearing of livestock which were less profitable. The farmer was growing local basmati, a tall variety susceptible to lodging in *kharif* and local variety (own sseed) of wheat during *rabi*.

Critical inputs and inspiring training programme were organised for achieving the objectives. The local basmati was replaced with high yielding variety of Pusa 1121 which increased the yield from 2500 to 3500 kg/ha which 40 % increase over the traditional variety without any additional cost of cultivation. In addition, early rice

**IFS Activities for Small & Marginal Farmers of Samba**

**On- Farm demonstration and adoption of IFS Modules**

Farming System Unit	Interventions and Incentives
Rice-Wheat	HYV, MOP, Zinc sulphate
Rice- V. Pea-Mash	Crop diversification(HyV)
Animal	Mineral mixture + Training
Mushroom	Spawns + Training
Poultry	3D vanraja birds + Trainings

**Glimpses of IFS interventions**



**Shri Sultan attending the training of mushroom cultivation at OFR office, Dhiansar**



variety IET-1410 during *kharif*, vegetable pea during *rabi* and blackgram during summer was introduced to make diversification more stronger.

Berseem local variety was replaced by Mascavi and the yield increased from 2500 to 3500 in 0.05 ha area. High yielding variety of wheat PBW-550 was grown in which yield increased from 2000 to 3390 kg/ha.

In case of dairy, the poor feeding constraint was addressed by providing the critical inputs of improved additional feed for Rs. 10/day/milch animal and Rs. 6/day for mineral mixture. The milk yield increased by 1.2 kg/day/animal. Additional income of Rs. 30/day/animal by investing Rs. 16/day/animal was realized with B : C ration of 1.88. Two additional new subsidiary enterprises of less capital were added for increasing the income and for the judicious utilization of family labour.

Backyard Poultry :- 20 nos. of Vanraja birds were provided to the farmer for livestock diversification along with the training on scientific poultry production. The farmer family could not get 1800 no's of eggs which was sold @ Rs. 5/egg and 64 kg of meat sold @ Rs. 150/kg. Net income of Rs. 10,150/- was obtained by investing Rs. 8450/- with B : C ratio of 2 : 2.

Oyster Mushroom :- 100 nos. of polythene bags having production capacity of 10 kg mushroom was prepared by the farmer under the guidance of mushroom expert with cost of Rs. 4760. Gross income of Rs. 10040/- was realized with B : C ratio of 2.11. The details of improvement in income from 0.9 ha is given below.

Particulars	Existing (Rice-wheat, berseem + dairy)	IFS interventions (Crop diversification + dairy + poultry + oyster mushroom)	% increase
Gross Income (Rs.)	75000	1,44000	92
Cost (Rs.)	45000	70000	56
Net income (Rs.)	30000	74000	147

The lifestyle of farmer has changed as he has constructed pacca cattle shed, good dwelling house, increased the number of livestock and enjoying the farming operations throughout the year.

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