

Production technology of Chrysanthemum under Jammu conditions



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Chrysanthemum (*Dendranthema x grandiflora*) also known as 'Guldaudi' is a very important cut flower as well as loose flower of high economic value. It belongs to family Asteraceae and is native of Japan. The flowers are used in bouquets, garland making and for hair adornment. Flowers are available in wide range of attractive colours, forms and sizes which make it a very popular flower among the growers

Types of inflorescence

Standard inflorescence: All flower buds except terminal ones are removed to allow one flower per stem to develop. The bloom of 10 -15 cm in diameter, is usually referred as standard. They are used as cut flower.

Spray inflorescence: The entire cyme is allowed to bloom but very often the central inflorescence (oldest) is removed when colour begins to show in the ray flowers. These groups are usually known as spray chrysanthemums and are mainly used as loose flower as well as cut flower.

Climate and soil:

Chrysanthemum requires long days during initial period of 2-3 months for its vegetative growth and 1-2 months of short day conditions and cool temperature (10-25°C) for flowering. Temperature below 10°C inhibits flower bud initiation and above 25°C affects flower bud development.

Soil should be well drained, sandy loam with a pH of 6.5-7.0. It is highly sensitive to water logging. The soil should be thoroughly ploughed 15-20 cm deep and leveled.

Commercial Varieties:

Standard: Purnima, Snow Ball, White Prolific, Yellow Star, Chandrama, Fiji Pink, Thai- Ching- Queen

Spray varieties: Baggi, Birbal Sahni, Maghi White, White Bouquet , Basanti, Ajay, Mayur, Kundan, Nanako , Ravi Kiran



Snow Ball



Star Pink



Yellow Star



Ajay



Ravi Kiran



Maghi White

Propagation

It is propagated through rooted cuttings. The terminal cuttings (5-6 cm length) are taken from healthy mother plants and dipped in 500 ppm Indole Butyric Acid (IBA) as quick dip and planted in sand beds in April-May under semi shade conditions and watered regularly. Rooting occurs in about one month.

Chrysanthemum can also be propagated through suckers. The optimum time of separation of the suckers from mother plant is when 5-6 green leaves appear at the tip (February - March). They are planted on raised beds at 30x30 cm spacing. Propagation by cutting is preferred over suckers because cutting produces neat

and sturdy plant whereas the plant raised through suckers are shaggy.



Cutting preparation

Planting:

The well rooted cuttings are planted in beds at a spacing of 30x30 cm (4500 plants/Kanal) Planting should be done in the month of July -August.

Manure and fertilizers:

Apply 1.5 tones of well rotten farm yard manure, 9 kg of Urea, 21.00 kg DAP and 17.00 kg MOP per Kanal . Full dose of DAP and MOP and 1/2 dose of urea should be applied as basal dose. Remaining 1/2 dose of urea can be applied by top dressing after one month of planting.

Weeding and hoeing:

Weeding should be carried out as and when required. Regular hoeing at fortnightly interval is required to loosen up the soil starting from one month after planting.

Irrigation:

Due to shallow root system crop require frequent irrigation in every 4-5 days in hot dry summer season and 10-15 days in winter. Avoid over watering as it damage the crop.

Staking

Staking is very necessary for providing support to the flowering stems which otherwise tend to bend with the weight of blooming flowers.

Pinching

Pinching involves removal of terminal shoot to break apical dominance and promotes axillary branches. This practice is done after 7-10 days of transplanting. When the plants are well established shoot tip is removed above the third node in both in standard as well as spray cultivars.

Disbudding and deshooting

Through disbudding, undesirable immature flower buds are removed so as to allow terminal bud to obtain large and quality blooms in case of standard cultivars. Whereas in spray cultivars, the terminal bud is removed to obtain uniform size in axillary buds.

Deshooting is done by removing the axillary shoots before they attain the size of 2.5 cm so as to obtain a single flower per stem in standard cultivars.

Harvesting:

It depends on the variety and time of planting. The crop start flowering after about 3-4 months of planting. In spray varieties, harvesting is done when when four to five flowers have opened and others have shown colour. The standard varieties are harvested when ray florets are fully opened and disc florets are visible. Spray varieties for loose flowers are harvested when flowers are at full bloom stage.

Yield

Standard cultivar: 20,000 cut flower stems/Kanal

Spray cultivar: 14,000 cut flower stems/Kanal, 1.0 t/ha of loose flowers.

Post harvest handling

After harvesting, the stem should be cut at equal length, bunched in five and packed in plastic sleeve and kept in buckets filled with water. Before shipment, the bunches are packed in boxes. Loose flowers are packed in gunny bags or bamboo baskets for shipment.

Insects - Pests

Aphid: Aphids suck sap from stem, leaves, flower buds and flowers. Damage results in loss of vigour, yellowing and premature leaf fall and stunted growth. These can be controlled by spraying Dimethoate 30EC @1ml/litre.

Bud borer: Larvae feed on growing flowers causing considerable flower loss. Spray Malathion 0.05% or methyl parathion 0.05% .

Spider mite: Mites are usually seen on upper surface of leaves. Affected leaves become discoloured, wilt and fall off. Two or three sprays of Dicofol or Dimethoate @ 0.05% at 15 days interval is recommended.

Diseases

Septoria leaf spot: Circular and greyish brown spots are formed on the leaves, which later become dark brown and black. Withering of leaves occur in severe infestation. Spray the crop with Bavistin (1g/l) or Diathane M-45 (2.0g/l) at the appearance of the disease. Repeat sprays at fortnightly interval.

Powdery mildew: The symptoms appear as powdery coating on the leaves often resulting in defoliation. Spraying with wettable

sulphur (3g/l) or Bavistin (1g/l) at 10-15 days interval helps in disease management.



PROJECT: Production and demonstration of quality planting material of commercially important cut and loose flowers in Jammu region under FTTF-NABARD