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# Center for Smart Agriculture

## Floriculturist



**Module 3: Cultivation practices of important flower crops**

**Session 8: Cultivation practices of gerbera**



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- ✓ Commonly known as Transvaal Daisy, Barberton Daisy or African Daisy.
- ✓ It is an important commercial flower crop grown throughout the world in a wide range of climatic conditions.
- ✓ It is ideal for beds, borders, pots and rock gardens.
- ✓ The flowers available in a wide range of colours and lend themselves beautifully to different floral arrangements.
- ✓ Used as cut flowers and the cut blooms have long vase life.





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## Important cultivars

- ✓ Stanza
- ✓ Jaffa
- ✓ Rosetta
- ✓ Balance
- ✓ Rosaline
- ✓ Dusty
- ✓ Flemingo
- ✓ Valentine
- ✓ Sunset
- ✓ Cocktail





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## **Propagation**

- ✓ Gerbera is propagated by cuttings of side shoots and divisions/suckers.

## **Climate**

- ✓ The optimum day and night temperature is 27°C and 14°C respectively
- ✓ Sunny or semi-shady locations are good for gerbera cultivation.

## **Soil**

- ✓ The soil should be highly porous and well drained to have better root growth and better penetration of roots
- ✓ Gerbera are deep rooted plants and the roots go as deep as 50 to 70cm.
- ✓ Soil pH should be between 5.5 to 6.5



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## **Disinfection of soil**

### **Steam**

- ✓ Not economically feasible for Indian conditions.

### **Sun**

- ✓ Cover the soil with plastic for 6-8 weeks. Sunrays will heat up the soil, which will kill most fungi.

### **Chemical sterilization**

- ✓ Use of formalin @ 7.5-10 lit/100sqm.
- ✓ Cover the beds with plastic sheets for 7 days.
- ✓ Then flush the soil approximately with 100 liters of water per sqm to drain the traces.
- ✓ Methyl Bromide : @ 25 – 30g/sqm
- ✓ Basamid (Dazomet) : @ 30 – 40g/sqm



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## Bed preparation

- ✓ Bed height : 1.5 ft (45cm)
- ✓ Bed Width : 2 ft (60 cm)
- ✓ Pathways between beds : 1 ft (30 cm)
- ✓ Gravel/sand can be added at the bottom for better drainage.
- ✓ While bed preparation, add Single Super Phosphate (0:16:0) @ 2.5 kg per 100 sq ft for better root establishment
- ✓ Magnesium Sulphate @ 0.5 kg per 100 sqft to take care of deficiency of Mg.





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## Planting

- ✓ The crown of plants should be 1-2 cm above soil level as the root system establishes the plants are pulled down.
- ✓ Plant the seedlings without disturbing the root-ball.
- ✓ Row -Row = 37.5- 40 cm. Plant- Plant = 30.0cm.
- ✓ Rake the soil surrounding the plant every fortnight for aeration.
- ✓ After plantation, maintain the humidity at 80 - 90% for 4- 6 weeks to avoid desiccation of plants.
- ✓ Gerbera can also be cultivated in pots as bench system of planting





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## **Fertilization**

- ✓ 25-75 t/ha of well decomposed organic manure is required.
- ✓ For the first three months after planting, application of 20:20:20:N:P:K @ 1.5 g/l of water every two days during the vegetative stage encourages better foliage.

*Once flowering commences*

- ✓ N:P:K 15:8:35 at the rate of 1.5 g/l water/day.

## **Weed management**

- ✓ It should be carried out once in 2 weeks for first 3 months of planting.
- ✓ After 3 months, subsequent weeding should be done at 30 days interval.
- ✓ Use of oxidiazon and oxyflourfen herbicides found beneficial to control weed population





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## **Irrigation**

- ✓ Water quality should be as follows pH: 6.5-7.0, EC: 0.5-1 ms/cm.
- ✓ Generally, one dripper per plant with approximately 700 ml per plant/day is required.
- ✓ In hot summer foggers can be utilized to maintain the humidity of the air.

## **Growth regulators**

- ✓ Foliar spray of 10-100ppm GA3 induce early flowering by 10days.
- ✓ CCC @ 500ppm promotes flowering while @ 750ppm fewer number of heavy flowers were produced.
- ✓ Application of B-nine at 2500ppm after 10-14 days of transplanting produces more flower heads.



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## Harvesting and yield

- ✓ Gerbera is a 24-30 months crop.
- ✓ Harvesting is done when the two outer rows of the disc florets are fully expanded and perpendicular to the stalk.
- ✓ The average yield is 200-240 flower stems per sqm (6-7 plants/sqm).
- ✓ Pluck the flowers in the morning or late in the evening or during the day when temperature is low.
- ✓ Pluck the flower from the plant rather than cutting them.





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## Pests

- ✓ Whitefly
- ✓ Leaf Miner
- ✓ Thrips
- ✓ Red mites
- ✓ Cyclamen Mites
- ✓ Catterpillar

## Diseases

- ✓ Root rot
- ✓ Crown rot
- ✓ Fusarium
- ✓ Alternaria Leaf Spot
- ✓ Powdary Mildew
- ✓ Nematodes





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## **Physiological disorders**

### **Flower Bent**

- ✓ It occurs due loss of cell turgidity and calcium.
- ✓ Application of adequate irrigation and Ca based fertilizers.

### **Premature wilting of flower**

- ✓ It occurs due to cloudy weather followed by bright sun
- ✓ It also occurs due to carbohydrate depletion.

### **Pre-harvest stem break**

- ✓ It occurs due to high root pressure and high humidity in the air.
- ✓ Keeping the soil moist during heat of the day or reducing air temperatures can minimize pre harvest stem break.



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## **Double-faced flowers**

- ✓ It is caused due to imbalance of nutrients.
- ✓ Sufficient amount of nutrient application during flower initiation stage

## **Non uniform flower blooming**

- ✓ It occurs due to physical injury to flower stem/ pest damage/ phytotoxicity.
- ✓ Avoid physical injuries and control pest damage.

## **Short Stem Length**

- ✓ It occurs due to high salinity level, moisture stress, and low soil temperature.
- ✓ Frequent irrigations are to be given to avoid water stress



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