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Production Technology of Gerbera under Protected Conditions

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Abstract

Protected cultivation has not only the potential to increase the production, but it also improves the quality of Gerbera flowers. Gerbera (*Gerbera jamesonii* Bolus.) is widely used as a cut flower. The awareness on the usage of cut flowers for various occasions has raised the demand for flowers in the market. This is due to improvement in the standard of living and quality of life which ultimately increased the growth of domestic and export markets. Production technology under protected condition deals with various kinds of practices that are being followed in the gerbera with objective to increase yield as well as quality of flowers. Plants have productive life up to 24-30 months. One plant yields 75-100 flowers in 30 months. To produce good quality flowers and higher profits, growers should have through knowledge on production technology of gerbera under protected conditions.

Introduction

Gerbera (*Gerbera jamesonii* Bolus.) commonly known as Transvaal Daisy, Barberton Daisy and African daisy. It is widely used as a cut flower besides for beds, pots, borders and rock gardens. Gerbera is native to South African and Asiatic regions and belongs to the family Compositae. The awareness on the usage of cut flowers for various occasions has raised the demand for flowers in the market. This is due to improvement in the standard of living and quality of life which ultimately increased the growth of domestic and export markets. India has been identified as one of the major forces in the world floriculture scenario. With liberalization of Indian economy, floriculture has become a new rising industry in agribusiness.

Plant Morphology

Gerbera plants are stem less and produce succulent leathery leaves directly from the soil level. The leaves and petioles are covered with number of fine bristles. The leaves are highly lobed and are arranged in a rosette at the base. The flowers are solitary and are produced on a long hollow stalk. The flowers are arranged either in single layer or double layer. The ray and disc florets assume different colours from variety to variety.

Soil Requirements

Gerbera cannot tolerate water logged conditions. Therefore, an ideal soil should have adequate drainage, light in texture and neutral to mildly acidic soil reaction. Real sandy loams with a pH of 5.5 – 7.0 suit very well for gerberas.

Climate Requirements

Gerberas thrive well under semi shade conditions and they don't prefer direct sunlight. In mild climate areas, however they can be grown in open as the temperatures are moderate under these climatic conditions. The quality of flowers however, will be better in semi shady conditions than the open cultivated flowers. Gerbera thrives well at temperatures of 25-30 °C during day and 16-12 °C during nights. At high or low temperature below the optimum range the growth and flowering gets reduced. It is necessary to keep the humidity level below 70% during the day and below 85% at night. Good internal air circular in the greenhouse at night and ventilation during the day is essential.

Preparation of Soil

The soil chosen for gerbera cultivation should be brought to a fine tilth by deep ploughing twice or thrice during summer months. The plants are normally planted on raised beds to facilitate good drainage. The beds are raised to height of 30 cm and the soil is enriched with generous quantity of organic manure. The beds have to be of 1 m width for ease of operation and length can be based on convenience. Recently soil based media comprising various proportions of soil + coco peat have become popular for gerbera cultivation. Incorporation of coco peat facilitates good drainage, aeration besides increasing the water holding capacity and nutritive value of the medium. Ideal coco peat should have a pH of < 7.0 and electrical conductivity of 0.5 ms/cm. The coco peat requires thorough washings before using as a medium to leach out excess salts.

Cultivation

Since, gerberas are shade loving plants they have to be grown in semi protected environments like shade net houses. For producing export quality blooms it is however required to grow them in low or medium cost green house with or without moderate climate control. Cultivation of gerbera in shade net houses with 50% shade on top has become a widely practiced commercial growing system.

Since, they grown in semi protected environment, the micro climate created is equally favourable for outbreak of the soil borne pathogens. To overcome, the outbreak, the soil or the medium chosen has to be thoroughly sterilized by solarization with black polythene mulching during summer is very essential. Alternatively the soil can also be fumigated by methyl bromide which is however very expensive. Cheaper alternatives like spraying 4% formaldehyde solution on the medium and covering them with polythene to prevent escape of formalin can also be tried.

Planting

Planting can be done round the year but preferably during September-October. While planting suckers or the tissue cultured plants, care should be taken not to plant the plants too deep. The crown portion should be just above the soil surface to prevent damage or disease incidence to the growing tip. The fragile roots have to be carefully spread while planting. Gerberas require an optimum spacing of 30-40 cm between rows and 25-30 cm between two plants. Nearly 6-7 plants/m² can be accommodated.

Propagation

Gerberas can be propagated through seed or by vegetative means mostly by suckers and divisions. Propagation through seed results in greater variability hence not preferred. For commercial plating, using suckers or divisions from a known variety is preferred. Gerberas are nowadays widely propagated through tissue culture. Large scale propagation is presently done using shoot tips, young flower buds (capitulum) leaves and petioles as source of generating plant lets in tissue culture.

Varieties

Commercially the following varieties are available which are either produced through tissue culture or vegetatively by suckers/ divisions. Goliath, Gold Spot-double petalled, Ibiza- double petalled, Rosabella – semi double, etc.

Irrigation

Gerberas require sufficient irrigation soon after planting and for further growth they require water constantly through drip irrigation system. Irrigation through drip lines delivers precise quantity of water required by the plant at root zone. An average gerbera requires 500-700 ml /day/ plant depending on the crop growth and season.

Manures and Fertilizers

Gerbera responds well to the application of manures and fertilizers. Incorporation of well decomposed compost at 6-8 kg/m² at the time of bed preparation helps in better growth and development of plants.

Gerbera require 10 g of nitrogen, 15 g of P and 20 g of K per square meter per month during early stages of plant growth. Once they start flowering, the quantity of NPK have to be increased to 15 g, 10 g and 30 g of NPK per square meter in a month. The requirement of micronutrients can be met by spraying 0.15% solution of Boron, Iron, Manganese, Zinc and Copper at monthly intervals.

Special Cultural Practices in Gerbera

Disbudding

Plants start to flower in 45 days after planting, initial flowers are poor in quality, Hence flower buds are to be removed regularly till the plant develops 6-8 good number of leaves or 60 days after planting.

Removal of Older leaves

The older leaves should be removed well in time. This practice allows the plant to produce new leaves. It also helps in keeping good sanitation in greenhouse.

Raking of Soil

The soil over the bed becomes hard because of daily irrigation, which becomes difficult for the roots to have sufficient aeration. Hence it is necessary to loose the top soil once in 15 days.

Harvesting

Gerberas produce flowers three months after planting. The flowers are harvested when they are fully open. Flowers are ready to harvest when 2-3 whorls of stamens are developed. Unopened flower buds if harvested fail to open. Harvesting is preferably done during cool parts of a day with sharp knife. Pulling out of the flowers manually, though practiced is not advisable as it tends to uplift the plants. The flower stalk has to be immersed immediately in water to prevent dehydration. Each flower is carefully packed in polythene sleeves and moist cotton at the cut ends of the stalk enhances the post harvest life of flowers. On an average gerbera produces 130-160 flowers per square meter per year under shade net conditions, whereas, nearly 200 flowers /m²/ year can be harvested when grown in the polyhouses.

Conclusion

Protected cultivation is one of the production technologies to increase the production, and also improves the quality of flowers. Although the initial investment on cultivation of Gerbera under protected conditions may be high as compared to open field cultivation, but it was highly profitable under greenhouse conditions. Gerbera plants produce flowers 7-8 weeks after planting. Plants have productive life up to 24-30 months. One plant yields 30-40 flowers per year and 75-100 flowers in 30 months and the production of Gerbera flowers in open field conditions are low. A bundle of 10 flowers costs in the range Rs. 15.00 to Rs. 40.00 depending on the seasonal demand. So, growing gerbera under protected conditions provides higher yields and quality flowers as compared to open to field conditions. Growers should have through information about the protected cultivation of Gerbera, before venturing into floriculture business.

References

- Akshatha, M.V., Raghavendra, N., Vasanth, K., Ambika, K., 2019. Integrated nutrient management on growth, yield and quality of gerbera (*Gerbera jamesonii* bolus.) cv.singapore yellow under protected condition, International Journal of Chemical Science, Online ISSN: 2523-2843. Volume 3 Issue 2; Page No. 36-37. Print ISSN: 2523-6075.
- Sundaram, V., "Text book on commercial flowers and ornamental gardening, 2016, Kalyani Publishers.