



Gerbera Cultivation in Polyhouse: Techniques and Economics

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INTRODUCTION

Gerbera (*Gerbera jamesonii*) is one of the most commercially important cut flowers globally, widely used in bouquets, floral arrangements, and decorations. Cultivation of gerbera under polyhouse conditions ensures year-round production, high-quality blooms, and better economic returns. Polyhouse cultivation protects plants from adverse weather, maintains optimum microclimate, and enhances productivity significantly compared to open-field cultivation. Gerbera is a very popular flower used in decorations and flower arrangements all over the world. To get good quality flowers throughout the year, it is cultivated in a *polyhouse*, where temperature, humidity, and light can be controlled. Growing gerbera in polyhouse gives better yield, uniform flowers, and higher income compared to open-field farming. Since the polyhouse protects crops from rain, wind, insects, and extreme climate, it helps maintain a suitable growing environment — resulting in healthier plants and more profit for farmers.

Climate and Polyhouse Requirements

Gerbera thrives well in moderate climatic conditions. The ideal temperature range is 18–24°C with relative humidity of 70–80%. Under a polyhouse, a controlled environment can be achieved using shading nets, foggers, drip irrigation, and proper ventilation systems. A well-designed naturally ventilated polyhouse is commonly used, but fan and pad systems provide higher yield through better humidity and temperature management. Light intensity is crucial; shading of 30–40% is recommended during peak summer.

Variety Selection

Commercially popular varieties include Stanza, Rosalin, Savannah, Dana Ellen, Marleen, Carambole, and Red Explosion. Both standard (single bloom) and double-flowered types are cultivated depending on market demand. High-yielding F1 hybrid varieties with long stalks and vibrant colors are preferred for polyhouse cultivation.

Soil and Growing Media

Gerbera requires well-drained, porous, and fertile soil with a pH of 5.5–6.5. Raised beds are prepared with cocopeat, perlite, and well-decomposed FYM/vermicompost in the ratio of 50:30:20. Soil solarization using black polyethylene sheet for 4–6 weeks helps eliminate soil-borne pathogens. The bed width is generally 1 meter with 30–40 cm height, and spacing of 30 × 30 cm or 40 × 40 cm is maintained.

Planting Material and Method

Healthy and disease-free tissue culture seedlings or suckers are used for planting. The crown of the plant should remain slightly above the soil surface to prevent rotting. Planting is mostly done during September–October for best establishment and flowering. About 8–10 plants per m² are maintained inside the polyhouse.

Nutrient Management & Fertiligation

Gerbera is a heavy feeder and responds well to fertiligation. A balanced nutrient schedule is followed:

- Basal Application: 1–2 kg of neem cake + 5 kg vermicompost per bed.
- Fertiligation: 200 ppm N, 150 ppm P, and 250 ppm K weekly through drip irrigation.
- Use of micronutrients (Zn, Fe, B, Mn) improves flower size and color.
- Biofertilizers such as *Trichoderma*, *Azospirillum*, and *VAM* are added for better root health.

Irrigation Management

Drip irrigation is essential to maintain optimum soil moisture (60–70% field capacity). Over-watering causes root rot, while water stress results in poor flower quality. In peak summer, foggers/misters maintain humidity and temperature within the polyhouse.

Pest and Disease Management

Common pests include thrips, aphids, mites, whiteflies, and nematodes. IPM techniques like yellow sticky traps, neem-based biopesticides, and predator insects (e.g., *Chrysoperla*) are effective. Diseases like powdery mildew, root rot, fusarium wilt, and botrytis are controlled through soil sterilization, *Trichoderma* application, and limited fungicide sprays.

Flower Harvesting and Post-Harvest Handling

Gerbera flowers are harvested when two outer rows of disc florets are open. Stalks are cut early morning and immediately kept in water containing 8-HQC (anti-bacterial solution). Grading is done based on stem length, freshness, size, and color. Flowers are packed in corrugated boxes with 40–50 stems each for transport.

Yield and Economics

Under polyhouse conditions, 250,000–300,000 flowers per hectare per year are obtained. Cost of polyhouse establishment: ₹25–30 lakhs/ha. Total annual cost of cultivation: ₹10–12 lakhs including maintenance, fertiligation, labor, and inputs. Net profit: ₹15–18 lakhs per year. Break-even is achieved in 2–3 years, making gerbera production highly profitable. Government subsidies of 40–60% are available through MIDH, NHB, and state horticulture departments, which reduce initial investment cost.

CONCLUSION

Polyhouse cultivation of gerbera offers a sustainable and profitable opportunity for commercial flower growers. With controlled environment conditions, proper fertiligation, and scientific management practices, high-quality flowers can be produced throughout the year. The demand for gerbera is increasing in national and international markets, making it a high-return crop under protected cultivation. Hence, gerbera cultivation in polyhouse is a commercially viable and futuristic venture for floriculture entrepreneurs.

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