The World of Flowers

Cut Flowers* is a specialized branch of horticulture, whose production requires specific techniques due to relatively short field growing, marketing season, and shelf life of cut flowers.

Production Systems
Cut flowers can be produced under two systems, namely open field and protected production (high tunnels and greenhouses which can be used all year-round).

Coltivar Selection
Coltivar selection should consider post-harvest longevity, suitability for growing in tropical conditions, and resistance to pests and diseases.

Site Selection and Soil Preparation
Optimum growth and yield of cut flowers results from well-drained, fertile soil and raised beds that ensure proper drainage.

Cutting
Some seed-grown annuals can be “directly sown” into the beds, but most are best transplanted as seedlings which start in cell trays, called “plugs”. Vegetative propagated perennials are produced as rooted cuttings.

Irrigation
Growing top-quality flowers and foliage requires consistent moisture. Most growers utilize drip irrigation as a time and water-saving alternative.

Fertilization
Requirements differ among crops. The most preferred fertilizer application method is through drip irrigation systems (fertigation).

Pest Management
Integrated Pest Management (IPM) and scouting is highly recommended as a money-saving and environmentally acceptable pathogen control.

Crop Harvest and Handling
Flowers are best harvested when they are cooler. Wet flowers and foliage are more susceptible to pests and diseases.

Postharvest Handling
Proper post-harvest care of cuts is essential for maintaining high quality and a long vase life. The plant’s life cycle continues even after harvest; as harvested flowers remain vulnerable to damage and diseases.

Grading, Packaging, and Delivery
Flowers are graded to ensure uniformity and compliance with customer requirements. Packaging dry flowers close together for shipping prevents mold growth.

**Top-Selling Cut Flowers in Wholesale Markets**

<table>
<thead>
<tr>
<th>Turnover (Million USD)</th>
<th>Quantity (Million Units)</th>
<th>Roses</th>
<th>Tulips</th>
<th>Chrysanthemums</th>
<th>Gerbera</th>
<th>Carnations</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.9</td>
<td>43.3</td>
<td>10.9</td>
<td>5.6</td>
<td>2.8</td>
<td>2.6</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Source: International Association of Horticultural Producers (AIPH), 2018

Source: ITC, Compiled from International Trade Statistics, 2019
Sustainable Cut Flowers

**Ecosystem Conservation**
- Reduce chemical pollution
- Mitigate sources of direct and indirect greenhouse gas emissions
- Enhance monitoring of businesses’ adherence to sustainable production practices
- Promote landscape biodiversity and conservation practices
- Ensure safe handling of fertilizers to prevent and control risks to the health of people and the ecosystem
- Help develop sustainable agricultural systems in rural areas

**Water Conservation**
- Encourage efficient use of water by using water-saving irrigation techniques and systems
- Manage and protect water catchment practices

**Social and Labor Management**
- Contribute to rural development in producing countries
- Generate employment opportunities and sources of income in pre- and post-harvest activities, especially for women
- Promote commitment to comply with ratified labor and social standards
- Promote freedom of association, collective bargaining, and workplace health and safety

**Water Quality Management**
- Require carrying out risk assessment of the quality of water used in the cropping system
- Require monitoring of water used in post-harvesting processes to preserve quality

**Soil Conservation**
- Practice proper soil management - including substrates and fertilizers - to reduce production costs, conserve soil, and minimize contamination risks
- Implement strategies to prevent physical deterioration of soil and prevent erosion
- Promote application of fertilization based on crop needs and soil or substrate’s characteristics to prevent loss of nutrients or contamination
- Evaluate impact of substrate on the environment and take steps to minimize this impact

**Integrated Farm Management**
- Increase cut flowers production yields and efficient use of irrigation water, fertilizers, and pesticides
- Promote sustainably produced cut flowers at main international events, leading to fairer prices
- Encourage use of animal manure, green manure, and/or mulch as fertilizer to reduce greenhouse gas emissions
- Require implementation of preventative pest control methods and Integrated Pest Management (IPM) to reduce losses
- Reduce the use of farmland which could otherwise be used for food production
- Promote recycling of crop residues

**Pre-Planting**
- Promote the use of high quality irrigation water to fulfill market quality requirements
- Require carrying out risk assessment of the quality of water used in the cropping system
- Require monitoring of water used in post-harvesting processes to preserve quality

**Growth**
- Increase cut flowers production yields and efficient use of irrigation water, fertilizers, and pesticides
- Promote sustainably produced cut flowers at main international events, leading to fairer prices
- Encourage use of animal manure, green manure, and/or mulch as fertilizer to reduce greenhouse gas emissions
- Require implementation of preventative pest control methods and Integrated Pest Management (IPM) to reduce losses
- Reduce the use of farmland which could otherwise be used for food production
- Promote recycling of crop residues

**Post-Production**
- Promote the use of high quality irrigation water to fulfill market quality requirements
- Require carrying out risk assessment of the quality of water used in the cropping system
- Require monitoring of water used in post-harvesting processes to preserve quality

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