Lilium

- Lilium hybrids.
- Liliaceae.
- Northern Asia, North America, and Europe.
- Number one cut flower produced in the United States.
- Major cut flower worldwide.
- Popular garden perennial and potted flowering plant.

Lilium Asiatic and Oriental hybrids

Species

Lilium longiflorum
Easter Lily

Intraspecific Hybrids

- LA, LO, and other hybrids.

Cultivars

- Hundreds of cultivars are available and introduced annually.
- Most cultivars specifically used as cuts, potted, or garden ornamentals.
Propagation

- Imbricated bulb
  - Scale propagation
  - In vitro
- Cut flower growers plant bulbs, never allow them to dry out.
- Seed, aerial bulblets, underground stem bulblets, division

Flowering Control

- Flower initiation patterns
  - Initiate in late summer and well developed by fall.
  - Initiate in late summer but not completed until following spring.
  - Initiate and develop in spring prior to shoot emergence.
  - Initiate and develop in spring after shoot emergence.
- Asiatic and oriental lily bulbs require cold storage required for shoot emergence and for flower initiation of some types.
- Long days hasten flower initiation.

Temperature

- Asiatic lilies
  - 36 to 41°F for 6-10 weeks.
- Oriental lilies
  - 36 to 39°F for at least 8, preferably 9-10 weeks.
- Bulbs can be frozen at 25°F to allow year-round forcing.
  - Bulbs harvested in the fall.
- Force at 63-65°F night.

Light

- High light required to prevent flower bud abortion and blasting.

Water

- Keep bulbs moist during delivery and storage.
  - Moisture required to perceive cold
  - Prevent desiccation.
- Keep plants moist but not saturated.

Carbon Dioxide, Nutrition, Media

- 1000 ppm can be used
  - Grow warmer at 68°F
  - Use supplemental lighting
- Use 200 ppm constant liquid fertilization
- Use well-drained media, pH 6.0.
Height Control

- None for cuts.
- DIF, chemicals used for pots.

Spacing

- Asiatic: 45-72/yd³.
- Plant 2-in. below surface to allow for stem roots.
- Grow in beds or crates.

Pinching/Disbudding/Support

- No pinching or disbudding needed.
- One or two layers needed for cuts.

Schedule/Timing - Oriental

<table>
<thead>
<tr>
<th></th>
<th>Plant bulbs</th>
<th>7-8 weeks</th>
<th>59°F night</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raise temperature</td>
<td></td>
<td>7-8 weeks</td>
<td>63-65°F</td>
</tr>
<tr>
<td>at visible bud</td>
<td></td>
<td></td>
<td>night</td>
</tr>
<tr>
<td>Flower/Total</td>
<td></td>
<td>14-16 weeks</td>
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</tbody>
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Insects/Diseases

- Aphids and fungus gnats biggest problem.
- Bulb mites and thrips also occur.
- Stem and root rot.
  - *Fusarium, Pythium, Rhizoctonia, Phytophthora*
- *Botrytis* flower blight.
- Other diseases outdoors.

Physiological Disorders

- Flower bud abortion/blasting.
  - Low light.
  - High temperatures.
  - Ethylene.
- Leaf tip burn.
  - Apply calcium chloride or calcium nitrate.
- Leaf scorch.
  - Eliminate floride.
Postharvest

- Harvest for wholesale and shipping when buds are well colored but not yet opened.
- Harvest with one flower open for retail sales.
- Store at 32-41°F.
- Prevent leaf yellowing by spraying 100 ppm Fascination (BA+GA) prior to or immediately after cold storage.
- Treat with STS and sugar.