About Apples

Apples are a fruit that normally grow as trees from 1.5-7m high. Flower buds form on spurs formed on 2 year old or older wood. Cross pollination generally helps fruit set. Bud burst is in early spring with fruit ripening generally after stonefruit.

Climate and soil

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Frost tolerance</th>
<th>Water needs</th>
<th>Tolerance to waterlogging</th>
<th>Drought tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needs cool winters. -20°C causes freeze damage.</td>
<td>Flowers and young fruit killed at -2°C</td>
<td>Requires adequate moisture</td>
<td>Moderate, depends on rootstock</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Humidity tolerance</th>
<th>Wind tolerance</th>
<th>Soil needs</th>
<th>Nutrient requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate. Some diseases (e.g., scab worse with higher humidity)</td>
<td>Young trees (&lt;3 m) benefit from shelter.</td>
<td>Tolerates wide range of soils. Avoid heavy soils if no drainage.</td>
<td>Best pH is 5.5-6.5, but can tolerate wider range. Avoid excessive nitrogen.</td>
</tr>
</tbody>
</table>

Cultural practices

- **Propagation**: Bud or graft on a range of rootstock
- **Rootstocks**: A wide range of rootstock is used
- **Spacing**: Semi-intensive orchard: 4.5-5.0 m between rows and 2.8-4.3 m between trees.
- **Training and Pruning**: Central leader system for semi-intensive orchards.
- **Thinning**: Hand thin at around 2 cm diameter
- **Tillage and orchard care**: Grassed alleyways. Surface around trees clean.
- **Time to 1st harvest**: Intensive: 1-2 years; Semi-intensive: 2-3 years
- **Time to full production**: Intensive: 5-8 years; Semi-intensive: 8-10 years
- **Normal productive life**: Up to 40 years
- **Expected yields**: Intensive 3 years: 20 t/ha, 4 years: 10 t/ha, 6 years: 30 t/ha, 8 years: 50-70 t/ha
- **Harvest**: Hand harvest in bulk bins. Mechanical harvest for processed fruit.
- **Storage**: Varies with cultivar, but generally keep well in cool and controlled-atmosphere storage
- **Pests and diseases**: Apple scab, Powdery mildew, Codling moth, Red spider mites.

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