



Apples

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

Temperature	Frost tolerance	Water needs	Tolerance to waterlogging	Drought tolerance
Needs cool winters. -20°C causes freeze damage.	Flowers and young fruit killed at -2°C	Requires adequate moisture	Moderate, depends on rootstock	Moderate
Humidity tolerance	Wind tolerance	Soil needs	Nutrient requirements	
Moderate. Some diseases (e.g., scab worse with higher humidity)	Young trees (<3 m) benefit from shelter.	Tolerates wide range of soils. Avoid heavy soils if no drainage.	Best pH is 5.5-6.5, but can tolerate wider range. Avoid excessive nitrogen.	

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-intense orchards.		
Thinning	Hand thin at around 2 cm diameter		
Tillage and orchard care	Grassed alleyways. Surface around trees clean.		
Time to 1 st 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		Semi-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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Primary reference: Jackson, D.I. and Looney, N.E. 1999. Temperate and Subtropical Fruit Production. 2nd Ed. CABI Publishing. Wallingford (United Kingdom)

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