

FarmLens Ltd

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Crop details

Apple (tufaha)

Malus domestica

Family: Rosaceae

Categories

Fruits & Nuts

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Quick stats

<u>Family</u>	Rosaceae
<u>Typical harvest</u>	22.7 t/ha
<u>Varieties</u>	3
<u>Pests and diseases</u>	6
<u>Seasons</u>	0

Crop profile

<u>Growth habit</u>	tree
<u>Days to harvest</u>	365
<u>Main uses</u>	Fresh fruit eaten as a snack, in salads, juices and desserts; also used for drying and processing.
<u>Pollination</u>	insect
<u>Origin and where it grows</u>	Apple (tufaha) is grown in cool highland and upper mid-altitude areas in East Africa where nights are cool and days are mild.

Weather, soil and spacing

<u>Best temperature</u>	12 - 24 °C
<u>Rainfall</u>	800 - 1200 mm/yr
<u>Altitude</u>	1500 - 2800 m
<u>Best pH</u>	6 - 6.8
<u>Soil type</u>	Deep, well-drained loam or sandy loam with plenty of organic matter. Apple (tufaha) prefers cool, moist but well-aerated soils.
<u>Row spacing</u>	400 cm
<u>Plant spacing</u>	400 cm
<u>Seed rate</u>	kg/ha (check local recommendation)
<u>Nursery days</u>	365

Simple notes for farmers

About the crop: This crop has a growth habit described as "tree". Harvest typically starts about 365 days after planting.

Main use: Farmers mostly grow this crop for fresh fruit eaten as a snack, in salads, juices and desserts; also used for drying and processing..

Pollination: Mainly insect; healthy flowers and pollinators improve fruit set.

Where it grows: Apple (tufaha) is grown in cool highland and upper mid-altitude areas in East Africa where nights are cool and days are mild.. Grouped under: Fruits & Nuts.

Best climate: 12 - 24 °C; 800 - 1200 mm/yr; up to about 2800 m a.s.l.

Soil: Best at pH 6 - 6.8; deep, well-drained loam or sandy loam with plenty of organic matter. apple (tufaha) prefers cool, moist but well-aerated soils..

Farmer guide (Mwongozo wa Mkulima)

<u>Planting</u>	Plant Apple (tufaha) at the start of the rains while trees are still resting. Dig wide, deep holes, mix topsoil with manure and some P fertilizer, and plant the grafted tree at the same depth as in the nursery bag. Keep the graft union above the soil.
<u>Transplanting</u>	Use healthy, well-grafted trees. Remove the polythene carefully, spread roots in the hole and water thoroughly after planting.
<u>Irrigation</u>	Young apple trees need regular watering in dry spells. For bearing trees, avoid stress at flowering and during fruit swelling; but do not over-irrigate heavy soils.
<u>Fertigation</u>	Under drip, feed small amounts of nitrogen early in the season, and more potassium as fruits develop. Avoid very heavy nitrogen close to harvest to keep fruits firm.
<u>Pest scouting</u>	Inspect trees often for aphids, caterpillars, fruit borers and leaf spots. Check young shoots, the underside of leaves and developing fruits.
<u>Pruning and training</u>	Train Apple (tufaha) to a strong central leader or open-centre with 3–4 main branches. Prune each year to remove crossing, dead or diseased wood and to open the canopy for light and air.
<u>Harvest</u>	Harvest when fruits have reached full size and colour for the variety, and seeds inside have turned brown. Fruits should detach easily when lifted and twisted.
<u>Postharvest</u>	Pick carefully into padded crates, do not drop fruits. Keep in shade, cool them if possible and avoid rough handling during transport to maintain shelf life.

Nutrient schedule (Mbolea kwa Hatua)

#	<u>Stage</u>	<u>DAP</u>	<u>Product</u>	<u>Rate</u>	<u>Targets (kg/ha)</u>	<u>Notes</u>
1	Basal at planting	0	Well-rotted manure + P fertilizer (e.g., DAP or TSP)	15 kg/tree manure	N: 0, P?O?: 0, K?O: 0	Thoroughly mix manure and P with topsoil in the planting hole for Apple (tufaha).
2	Early growth topdress	120	CAN 26% N	150 g/tree	N: 0, P?O?: 0, K?O: 0	Apply in a ring under the canopy edge and lightly incorporate.
3	Pre-flowering feed	365	Balanced NPK (e.g., 17-17-17)	250 g/tree	N: 0, P?O?: 0, K?O: 0	Applied at the start of rainy season before flowering.
4	Fruit development high K	420	High-K fertilizer (e.g., SOP or 12-12-24)	250 g/tree	N: 0, P?O?: 0, K?O: 0	Improves Apple (tufaha) fruit size, colour and storage life.

Nutrient requirements

<u>Nutrient</u>	<u>Stage</u>	<u>Amount</u>	<u>Unit</u>
N	Establishment	30	kg/ha

<u>Nutrient</u>	<u>Stage</u>	<u>Amount</u>	<u>Unit</u>
P?O?	Establishment	30	kg/ha
K?O	Establishment	30	kg/ha
N	Vegetative	50	kg/ha
P?O?	Vegetative	20	kg/ha
K?O	Vegetative	40	kg/ha
N	Bearing_maintenance	60	kg/ha
P?O?	Bearing_maintenance	25	kg/ha
K?O	Bearing_maintenance	80	kg/ha

Field images



Varieties

<u>Name</u>	<u>Country</u>	<u>Maturity (days)</u>	<u>Traits</u>
Anna	KE	150	Low-chill variety suited to warmer highlands; early bearing with crisp fruit.
Top Red / Red Delicious–type	KE	170	Red-skinned apples for fresh eating; needs cooler sites.
Golden Dorset / similar	TZ	150	Yellow-skinned, sweet dessert apple suitable for some warmer highland zones.

Fertilizer recommendations

<u>Stage</u>	<u>Product</u>	<u>Rate</u>	<u>Notes</u>
Basal (at planting)	Well-rotted farmyard manure	10000	Incorporated in planting holes and along future root zone.
Young trees	CAN 26% N	60	Split into 2–3 small applications per year to encourage early growth.
Bearing trees base feed	NPK 17-17-17 or similar	200	Applied annually, often at start of rains.

<u>Stage</u>	<u>Product</u>	<u>Rate</u>	<u>Notes</u>
Fruit quality	High-K fertilizer (e.g., SOP or 12-12-24)	80	Supports good colour and firm fruits.

Pests and diseases

<u>Name</u>	<u>Type</u>	<u>Symptoms</u>	<u>Management</u>
Aphids	pest		Encourage natural enemies, prune heavily infested shoots and use selective insecticides or soaps when numbers are high.
Fruit borers / codling moth-type caterpillars	pest		Collect and destroy infested fruits, maintain orchard hygiene and use recommended control products and traps where available.
Mites	pest		Avoid dusty conditions, keep trees healthy and use specific miticides or biopesticides when needed.
Apple scab-like leaf and fruit spots	disease		Prune for airflow, remove infected leaves and fruit, and apply fungicides/biopesticides during wet periods when disease risk is high.
Powdery mildew	disease		Prune out infected shoots, avoid excessive nitrogen and spray with suitable fungicides or sulphur where needed.
Cankers and dieback	disease		Cut out cankers in dry weather, disinfect tools and avoid wounding the bark.

Yields

<u>System</u>	<u>Typical</u>	<u>Min</u>	<u>Max</u>	<u>Notes</u>
Scattered homestead Apple (tufaha) trees	8	5	12	Few trees with limited pruning and fertilizer.
Managed smallholder apple orchard	20	10	30	Regular pruning, manuring/fertilizer and basic pest and disease control.
Intensive high-density apple orchard	40	25	50	Improved rootstocks, drip irrigation, fertigation and strong canopy management.

Region suitability

<u>Country</u>	<u>Region</u>	<u>Suitability</u>
KE	Central and upper Rift Valley highlands (cool apple zones)	N/A
TZ	Northern and southern highlands above about 1500 m	N/A
UG	High altitude areas with cool temperatures	N/A

Source: **FarmLens Ltd** - farmlens.africa and app.farmlens.africa. Headquarters: Nairobi, Kenya. This guide was generated from the FarmLens database.