FarmLens Ltd

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Crop details

Coffee

Coffea arabica / Coffea canephora (robusta)

Family: Rubiaceae

Categories

Oil & Industrial | Beverages

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Quick stats

Family	Rubiaceae
Typical harvest	0.8 t/ha
Varieties	3
Pests and diseases	7
Seasons	3

Crop profile

Growth habit	perennial
Days to harvest	365
Main uses	Dried coffee beans (parchment or cherry) processed into beverage coffee; by-products used as mulch or compost.
Pollination	self
Origin and where it grows	Grown in tropical highlands and warm humid regions with distinct wet and dry seasons or reliable rainfall.

Weather, soil and spacing

Best temperature	18 - 24 °C
Rainfall	1200 - 2000 mm/yr
Altitude	800 - 2200 m
Best pH	5 - 6.5
Soil type	Deep, well-drained loams or volcanic soils with high organic matter; avoids heavy, compacted clays and saline soils.
Row spacing	200 cm
Plant spacing	200 cm
Planting depth	30 cm
Seed rate	kg/ha (check local recommendation)
Nursery days	240

Simple notes for farmers

About the crop: This crop is perennial; once planted it can keep producing for many years. Harvest typically starts about 365 days after planting.

Main use: Farmers mostly grow this crop for dried coffee beans (parchment or cherry) processed into beverage coffee; by-products used as mulch or compost..

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

Where it grows: Grown in tropical highlands and warm humid regions with distinct wet and dry seasons or reliable rainfall.. Grouped under: Oil & Industrial, Beverages.

Best climate: 18 - 24 °C; 1200 - 2000 mm/yr; up to about 2200 m a.s.l.

Soil: Best at pH 5 - 6.5; deep, well-drained loams or volcanic soils with high organic matter; avoids heavy, compacted clays and saline soils..

Farmer guide (Mwongozo wa Mkulima)

Planting	Dig deep planting pits (e.g. 60 x 60 x 60 cm), separate topsoil and subsoil and mix topsoil with manure/compost and any recommended basal fertilizer. Plant healthy, vigorous seedlings at onset of rains and mulch immediately.
Transplanting	Transplant when seedlings have a sturdy stem and well-developed roots. Plant at the same nursery depth, firm soil gently around the root ball, provide temporary shade if needed and water thoroughly.
Irrigation	Under rainfed conditions, conserve moisture with mulches and shade. Where irrigation is available, maintain regular moisture during flowering, fruit set and cherry filling; avoid severe drought stress.
Fertigation	With drip/sprinkler systems, split N and K into small, frequent doses through the season, with P mostly applied as basal. Adjust rates based on leaf and soil analysis and expected yields.
Pest scouting	Scout regularly for coffee berry borer, leaf rust, coffee berry disease (where present), scales, mealybugs and stem borers. Check both foliage and developing cherries.
Pruning and training	Train young coffee to one main stem then form primary branches; maintain a manageable tree height. Use regular sanitary pruning to remove dead, diseased and unproductive wood and maintain light inside the canopy.
Harvest	Hand-pick only fully ripe red cherries where possible for quality. In strip-harvesting systems, avoid too many green cherries. Harvest in several rounds as cherries ripen.
Postharvest	Process cherries promptly after harvest. For washed coffee, pulp, ferment, wash and dry to safe moisture on clean drying surfaces. For natural coffee, dry clean cherries evenly and avoid contamination or mould.

Nutrient schedule (Mbolea kwa Hatua)

#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
1	Basal at planting	0	NPK 17-17-17 + compost/manure	150 kg/ha (plus 5–10 t/ha compost/manure in pits)	N: 26, P?O?: 26, K?O: 26	Mix into topsoil and return to planting pits or planting strip; avoid direct contact with roots at planting.

#	Stage	DAP	Product	Rate	Targets (kg/ha)	Notes
2	Early rainy-season topdress	60	CAN 26% N or urea	100 kg/ha	N: 26, P?O?: 0, K?O: 0	Apply around the drip line of trees at the start of the rainy season and lightly incorporate or mulch over.
3	Flowering / fruit set N+K	150	NPK 20-10-10 or urea + MOP/SOP	150 kg/ha	N: 30, P?O?: 15, K?O: 15	Apply during or soon after flowering to support fruit set and cherry development.

Nutrient requirements

Nutrient	Stage	Amount	Unit
N	Establishment	40	kg/ha
P?O?	Establishment	30	kg/ha
K?O	Establishment	40	kg/ha
N	Early_bearing	80	kg/ha
P?O?	Early_bearing	20	kg/ha
K?O	Early_bearing	80	kg/ha
N	Full_bearing	120	kg/ha
P?O?	Full_bearing	20	kg/ha
K?O	Full_bearing	120	kg/ha

Field images

Varieties

Name	Country	Maturity (days)	Traits
Arabica highland selection	KE	1095	Good cup quality and tolerance to major diseases; suited to high elevation coffee belts.

Name	Country	Maturity (days)	Traits
Robusta mid-altitude type	TZ	1095	High-yielding robusta type for warmer, lower-altitude zones with suitable rainfall.
Smallholder-adapted arabica/robusta selection	UG	1095	Adapted to local pests/diseases and mixed-crop systems in smallholder landscapes.

Fertilizer recommendations

Stage	Product	Rate	Notes
Basal (planting)	NPK 17-17-17 + organic manure	150	Apply in planting pits or bands before transplanting, combined with well-rotted manure or compost.
Early rainy season	CAN 26% N or urea	100	Apply at onset of rains around the drip line of trees, lightly incorporated or mulched in.
Fruit set / berry filling	NPK 20-10-10 or N+K blend	150	Apply during heavy flowering or early berry development for bearing trees.

Pests and diseases

Name	Type	Symptoms	Management
Coffee berry borer (CBB)	pest	Small entry holes at the blossom end of cherries, bored galleries inside beans, reduced quality and weight.	Field sanitation (strip-picking and removal of leftover cherries), timely harvest, monitoring with traps and integrated control measures.
Coffee leaf rust	disease	Yellow/orange powdery lesions on undersides of leaves, premature defoliation and yield decline.	Use tolerant/resistant varieties, maintain tree vigour through good nutrition and shade management, and remove severely infected lower branches.
Coffee berry disease (CBD) – high altitude arabica zones	disease	Dark sunken lesions on green cherries, shrivelled beans and cherry drop in cool, wet conditions.	Use tolerant varieties where available, prune to improve airflow, ensure timely picking and avoid long periods of wetness on cherries.
Root-knot nematodes and root rots	pest	Stunted bushes, yellowing and poor fruiting; galled or rotted roots on affected plants.	Use clean planting material, avoid infested nursery sites, maintain organic matter and avoid waterlogging.
Scales and mealybugs	pest	Clusters on stems and leaf undersides, honeydew and sooty mould; reduced vigour and branch dieback in severe cases.	Encourage natural enemies, prune out heavily infested twigs and manage ants that farm the scales.
Stem borers / twig borers	pest	Wilting or dieback of twigs, small holes in stems and galleries inside branches.	Prune and destroy infested branches early, maintain tree vigour and monitor susceptible blocks more frequently.
Nutrient deficiency (N, K, Mg, Zn, B)	disorder	Pale leaves, yellowing patterns, tip burn, small beans and dieback, depending on nutrient affected.	Use soil and leaf analysis to guide balanced fertilizer and lime applications and avoid chronic under-fertilization.

Yields

System	Typical	Min	Max	Notes
Smallholder rainfed (clean coffee, dry beans)	0.6	0.3	0.9	Often 1–2 t/ha clean coffee equivalent from 4–6 t/ha of dried cherry or parchment over biennial cycles; lower inputs and irregular management.
Managed coffee estate (clean coffee, dry beans)	1.5	0.8	2	Improved varieties, regular fertilizer and pruning, good shade/water management and well-managed picking and processing.
Intensive high-input / irrigated (clean coffee, dry beans)	2.5	1.8	3	High-yielding varieties, strong nutrition and moisture management with careful canopy/pruning control.
smallholder	0.7	0.4	1.2	Green bean eq.
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Season calendars

Country	Region	Planting	Harvest
KE	Highland coffee zones (arabica)	At onset of long or short rains so seedlings establish before dry periods; avoid planting near peak dry season.	Main harvest
TZ	Northern and southern arabica highlands; western robusta zones	Young coffee planted with start of rainy season for good establishment in both arabica and robusta areas.	Harvest seaso

Country	Region	Planting	Harvest
UG	Arabica highlands and robusta lowland belts	At onset of reliable rains on prepared fields with shade and mulching where needed.	Distinct harve

Region suitability

Country	Region	Suitability
KE	Central and some eastern/western highlands with deep, well-drained volcanic soils	High
TZ	Northern and southern highlands for arabica; western and lake zones for robusta	High
UG	Eastern and western highland arabica belts and central/western robusta zones	High