FPI Online Academy | Species yield analysis | 2026

Moringa peregrina

Yield evidence, production logic and field validation

SPECIES BRIEF 07 / SEED ROUTE: LOCAL VALIDATION NEEDED



Moringa peregrina: living plant photograph. Tobias 67 / CC BY-SA 4.0. Full credit and source: page 5.

The production decision

A seed-oil candidate that needs an orchard and extraction analysis rather than a copied leaf-production forecast. Seed yield, kernel fraction, oil concentration and recoverable saleable oil are separate quantities.

Identity	Assessment basis
Native range	Red Sea region and Arabian Peninsula, extending into northeast Africa
Life form	Arid-region tree
Product route	Seed and seed-oil assessment, with conservation safeguards

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MORINGA PEREGRINA

What the evidence supports

Botanical identity comes before yield

Moringa peregrina (Forssk.) Fiori is treated as an accepted species in the Kew record. This is a species profile, not proof of a named commercial cultivar or a uniform genetic line. The native-range description is an ecological starting point, not a site recommendation. [S1]

Evidence interpretation

A primary population study in a hyper-arid environment found that seed size influenced germination and early seedling performance. It does not provide a plantation yield guarantee. A separate seed-characterisation experiment from Sudan reported approximately 59.9% kernel fraction and a 100-seed mass of 70.54 g for its sample. These sample properties cannot establish seed kg per tree, extraction recovery or annual oil output. [S2, S3]

Yield question	Evidence position
Annual saleable output	A local, product-specific time series is still required.
Density and cutting	Test the interaction with survival, recovery and resource use.
Processing recovery	Measure fresh input, dried mass and accepted output separately.
Financial use	Use measured accepted batches; do not treat a hypothetical case as a forecast.

The question this species must answer

What mature seed mass can a managed orchard supply, and how much buyer-accepted oil can the chosen extraction process recover?

How to read a yield claim

A useful figure identifies species or accession, plant age, location, net planted area, product organ, moisture basis, observation period and harvest count. If one of these is missing, keep the number as a research lead rather than a commitment to a buyer. A seed-oil percentage and a nutrient concentration are product attributes; neither is a field-yield measure.

MORINGA PEREGRINA

Turn measurements into usable yield

State the product and time basis

Mature clean seed kg per productive tree and per planted area; recovered oil kg per batch, with time and age stated.

Accepted oil kg = clean seed kg x measured recovered-oil fraction x acceptance fraction

This is an extraction sensitivity, not an orchard forecast. The recovery assumptions below are invented for arithmetic only; they are not measured performance of M. peregrina. Record oil by mass. Convert to litres only using a measured or specified density.

Illustrative input	Low recovery	Middle	High recovery
Clean whole seed / batch	100 kg	100 kg	100 kg
Recovered oil fraction	20%	25%	30%
Accepted fraction	95%	95%	95%
Accepted oil / batch	19.00 kg	23.75 kg	28.50 kg



Do not annualise an unobserved cycle

Add the accepted output from each completed harvest in the observation year. Do not multiply the best cut by an assumed number of cuts. If trial results are extrapolated from a plot, show the measured plot area and the calculation; report production roads, buffers and buildings separately from net planted land.

Keep these units separate	Why it matters
Per plant vs per hectare	Stand density, missing plants and non-producing plants change the area result.
Fresh vs dry vs saleable	Water removal, trimming and quality rejection change the quantity that can be sold.
One batch vs one year	Seasonality, establishment and recovery determine completed production cycles.

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Design a field test that answers the question

Recommended validation approach

Track age, flowering, fruit set, mature seeds, non-producing trees and collection losses. Run separate pilot extraction batches with weighed seed and recovered oil. Establish a genuine orchard before using per-hectare yield in finance.

Three decisions to make from the records

1. Report whole seed and kernel masses on explicit moisture bases.
2. Keep oil mass in kg until measured density supports a volume conversion.
3. Compare buyer specifications, storage stability and extraction cost before scaling.

Record in every trial	Minimum useful detail
Identity and layout	Accession or seed lot; propagation method; planted and measured area; original plant count.
Inputs and conditions	Water delivered; soil test; weather and stress events; labour; actual management changes.
Harvest and recovery	Date; plant age; organ collected; fresh mass; dry mass; rejection and reason.
Output and use	Accepted product mass; intended customer or research endpoint; batch identity; cost per accepted unit.

Species-specific risk controls

1. Treating laboratory oil concentration as press recovery.
2. Ignoring years to reproductive production and non-bearing trees.
3. Assuming natural drought survival allows large annual seed removal from wild populations.

Decision gate

Develop a seed-specific pilot and verified oil mass balance. Do not assign M. oleifera leaf yields or unmeasured annual oil volumes to this species.

FPI application: connect the production trial with the ABC cluster's actual water, handling, processing, logistics and customer capacity. A productive plant trial is only one part of a viable value chain.

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Evidence, image credit and next decision

Assessment conclusion
Develop a seed-specific pilot and verified oil mass balance. Do not assign M. oleifera leaf yields or unmeasured annual oil volumes to this species.

Sources and scope

[S1] Royal Botanic Gardens, Kew. Plants of the World Online: Moringa peregrina. Taxonomy, range and life form. Open source
[S2] Gomaa & Pico (2011). Germination, seedling traits and seed bank of M. peregrina in a hyper-arid environment. Open source
[S3] An evaluation of Moringa peregrina seeds as a source for bio-fuel (2014). Seed-characterisation study, Sudan. Open source

Research method. Targeted review of accepted taxonomy, primary yield studies where available, and image provenance, checked 22 October 2026. An evidence gap means no transferable commercial benchmark was identified in this review; it is not proof that no unpublished or local trial exists. Proposed trials, decision gates and arithmetic examples are FPI analytical guidance, not observations by the cited researchers.

Photograph provenance

Moringa peregrina Oman TP07.jpg. Tobias 67. CC BY-SA 4.0. Source record | Licence
The image is a real photograph identified as this species in its source record; it is not evidence of an FPI field trial. Image resized proportionally for layout; no botanical features generated or replaced. Any adaptation of a share-alike image retains the stated image licence. Image owners and source institutions do not endorse this publication.

Before using the analysis commercially

Replace illustrative inputs with the site's measured results. Confirm the exact botanical species, intended product use, buyer specification and applicable local requirements. Separate field output from accepted saleable product and separate a financial scenario from a verified trading result.

FPI MORINGA YIELD INTELLIGENCE
For farmers, cooperatives, technical teams, buyers and investors assessing production before scale. This brief combines species identity, yield-evidence limits and a practical route to local validation.

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