Dual-purpose Millet Varieties for Crop and Livestock Integration

Harvest More, Feed Better, Farm Smarter

"Dual-purpose Varieties for Crop and Livestock Integration" involves developing millet and sorghum varieties for both human food and animal fodder in African drylands, addressing challenges like overgrazing and soil degradation worsened by increasing livestock populations.

This technology is TAAT1 validated.

7·8 Scaling readiness: idea maturity 7/9; level of use 8/9

Gender assessment 4

Climate impact 7

Problem

- Declining productivity of pastures and rangelands in African drylands due to overgrazing, soil degradation, and climate change.
- Growing livestock population exacerbating the demand for animal feed resources.
- Traditional millet and sorghum varieties unable to meet the dual requirements of human food and high-quality animal feed.
- Common millet and sorghum lines have higher lignin content, making them less digestible, and may contain bitter-tasting tannins.

Solution

- Ideal grain-to-stover ratios for human and animal nutrition
- Reduced lignin and tannin content for enhanced digestibility and palatability
- Greater fodder availability, especially during the dry season
- Increased manure availability for soil fertility management
- Survives dry spells and resumes growth quickly after moisture returns
- Sweet stover with high sugar concentration (around 15%)
- Suitable for syrup or bioethanol production
- Provides more metabolizable energy per unit of land area compared to traditional varieties

Key points to design your project

The dual-purpose varieties enhance food security by providing both human food and high-quality animal feed, improving digestibility, and supporting bioethanol production.

They exhibit resilience to adverse weather conditions, contributing to climate change mitigation, and promote sustainable agriculture, preserving biodiversity and ecosystem health.

To integrate this technology, awareness campaigns, investment frameworks, capacity building, and financial support are essential.

Collaboration with seed companies, cooperatives, growers, and farmers is crucial for successful implementation.

Cost: $$$ **204 USD**

Production cost for seed, fertilizer, and labor per Ha

ROI: $$$ **31 %**

increase in yield

204 USD	2.5—4 tons	10—15 tons	15 %	IP
Per hectare for seed, fertilizer, and labor	Sorghum grain yield per Ha	Sorghum stover yield per Ha	Sugar concentration	No formal IP rights

ICRISAT
INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
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Technology originally documented by

ProPAS

Commodities

Sorghum/Millet

Sustainable Development Goals

+ 1 more

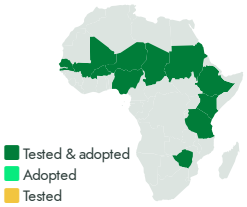
Categories

Production, Improved varieties, Quality improvement

Best used with

- Proactive Management of Striga Infestation ›
- Fertilizer Micro-Dosing to Enhance Yield and Use Efficiency ›
- Motorized Crop Residue Processing for Animal Feed ›

Tested/adopted in



Where it can be used

This technology can be used in the colored