



Sweetpotato Vines Silage Technology

Empowering Small-Scale Farmers with Sustainable, Nutritious and Innovative Year-Round Livestock Feed Solutions

Introduction

In the face of seasonal feed quality and quantity variations, livestock farmers often struggle to keep their animals healthy and productive.

Sweetpotato Vines Silage Technology is an innovative solution that preserves feed and ensures year-round feed availability.

This technology, developed by the **International Potato Center (CIP)** and the **International Livestock Research Institute (ILRI)**, allows farmers to turn surplus perishable sweetpotato vines into high-quality stable silage, ensuring steady feed supplement supplies even in the driest months.

This brochure unveils the benefits, preparation methods, and economic potential of sweetpotato vines silage - an affordable, nutritious solution that can revolutionize smallholder livestock farming.

Why Choose Sweetpotato Silage?

1. Nutrient-Rich & Balanced Feed

Sweetpotato vines are rich in **proteins (11-18%)**, **moderate energy**, and **minerals** - making them an ideal feed supplement for dairy cows, goats, sheep, rabbits, pigs and other livestock. The natural fermentative process during silage preparation improves their digestibility and feeding value, giving your animals a highly quality feed supplement that boosts milk production, body condition, profitability, and overall health.

2. Profitable Enterprise: Double Your Income!

Transforming sweetpotato vines into silage doesn't just feed your animals; it creates a new **income stream!** Farmers can easily package and sell their silage, converting the vines that might have been wasted into valuable, marketable feed resources. With silage, you can earn significantly more per acre compared to traditional farming methods.

3. Long-Term Feed Preservation: Keep Feed for Up to 3 Years

Unlike fresh forage, silage can be stored for years under anaerobic conditions. This ensures that even during periods of drought, floods, or dry seasons, your livestock can feed on silage. Properly stored silage is fresh and nutritious for up to **three years**, ensuring you stay resilient in unpredictable weather conditions.

Steps to Prepare Sweetpotato Vines Silage

Master the simple, low-cost process of preparing silage:

Step 1 | Chop and Wilt the Vines



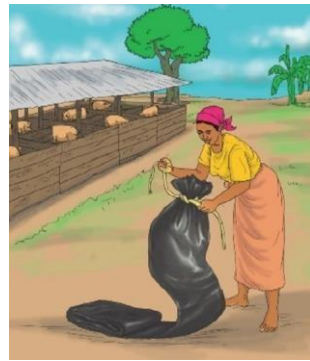
- Harvest fresh sweetpotato vines and chop them into small, manageable pieces (2-3 cm).
- Wilt the chopped vines for around **6-12 hours** to reduce moisture content and improve the fermentation process.

Step 2 | Mix with Maize Bran



- Add **10 kg of maize bran** for every 100 kg of vines. The maize bran enhances fermentation, absorbs excess moisture, and improves the energy content of the silage.

Step 3 | Prepare the Silo Bag



- Use a sturdy **black polythene tubing** (1.5m long, 600-800 mm gauge). Tie off one end and turn it inside out to form a durable silo bag.
- Ensure the tubing is well pleated to avoid air pockets and ensure airtight sealing.

Step 4 | Fill, Compact, and Seal



- Place the silo bag inside a **100 kg synthetic sack** to protect it during handling, extreme sun heat and rodent damage.
- Compact the chopped vine-bran mixture tightly inside the bag, ensuring no air remains to prevent spoilage. Seal the bag with sisal twine and store it in a cool, ventilated area, away from direct sunlight and rodents.

Step 5 | Ready to Feed in Just 21 Days!

- After **21 days**, your silage is ready for feeding! Store properly, and it will remain usable for up to three years, making it a powerful tool for feed security.

Nutritional Benefits of Sweetpotato Vines Silage

Here's how sweetpotato vines silage stacks up against other common forages:

Forage	Dry Matter	Crude Protein	Acid Detergent Fibre	Neutral Detergent Fibre	Ether
Fresh sweet potato vines (SPV)	22.2	12.1	35.6	46.8	1.7
SPV silage	26.2	11.3	27.5	40.1	4.2
Napier grass fodder	16.9	13.2	31.9	59.0	0.8
Napier grass fodder silage	16.4	10.3	27.2	46.2	5.9
SPV-Napier grass fodder (mixture)	19.8	14.2	35.2	51.4	1.0
SPV-Napier silage (mixture)	22.8	13.1	25.5	37.2	4.0

As seen, sweetpotato vines silage is highly digestible with a balanced protein-to-fiber ratio, making it an excellent choice for enhancing livestock nutrition.

Economic Potential: Unlock New Income Streams

Sweetpotato vines silage not only improves your farm's feed supply but also presents a **high-profit opportunity**. Here's a breakdown of potential earnings from one acre of sweetpotato silage production:

Operation	Quantity	Rate (USD)	Costs (USD)	Income (USD)
Hiring land	1	41.1	41.1	-
Cost of tools (hoes, rakes, pangas)	1	27.4	27.4	-
Cost of sweet potato vines (15 sacks of vines/acre)	15	5.5	82.5	-
Land preparation and planting	-	-	95.9	-
Weeding (twice)	1	49.3	49.3	-
Sub-total 1			296.2	
Cost of producing SP silage (including all expenses =USD 0.07)	9,750	0.07	682.5	
Sub-total (USD) (2)			682.5	
Total cost of producing silage or sweet potato roots (1) + (2)			978.7	
Sale of Sweet Potato Tubers	40 sacks	32.9	-	1,316
Sale of SPV Silage	9,750 kg	0.14	-	1365
Total Income				2681
Total cost				978.7
Profit				1,702.3

***The cost of producing 1kg of sweetpotato silage (vines produced from own field) is USD 0.07

Profit Margin: 1,700 USD per Acre!

Get Started Today!

Don't miss out on the opportunity to secure feed for your livestock and boost your farm's profitability. With simple techniques and low-cost tools, **Sweetpotato Vines Silage Technology** can transform your farm and turn challenges into opportunities.

Start making silage today and watch your livestock thrive!

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