Banana Peels as Feed and Organic Resource

From Waste to Resource

Banana and plantain peels offer a sustainable solution to waste disposal, serving as valuable resources for animal feed, soil input, and cooking ingredients. Proper processing detoxifies the peels, making them suitable for consumption by animals and contributing to waste reduction in regions where plantains and cooking bananas are common.

An industrial green banana peeler able to processes 600 units per hour

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This technology is TAAT1 validated.

7·8 Scaling readiness: idea maturity 7/9; level of use8/9

Project adoption 1

Technology integrated in the ENSURE project.

Inclusion assessment 3

Climate impact 7

Problem

- Waste accumulation due to the disposal of banana and plantain peels.
- Concerns regarding the chemical composition and nutrient ratios of the peels, especially when used as animal feed.
- Difficulty in removing peels from green bananas and plantains, leading to inefficiencies in processing.
- Restrictions on using raw peels in poultry feed due to the presence of anti-nutritional compounds like tannins and oxalate.
- Challenges in effectively utilizing peels, such as feed refusal due to high tannin content and the need for proper processing techniques to detoxify peels.

Solution

- Banana and plantain peels are valuable components in livestock and poultry diets.
- Dried peels contain essential nutrients like potassium, phosphorus, iron, calcium, magnesium, and sodium.
- Utilizing peels reduces waste accumulation and promotes sustainable resource management.
- Treated and composted peels serve as beneficial organic inputs for soil improvement.
- Green peels provide an energy source in animal diets due to their carbohydrate content.
- Fresh peels with high moisture content help animals stay hydrated.
- In smaller quantities, peels find use in cooking, water purification, and manufacturing beauty and health products.

Key points to design your program

Banana and Plantain Peels as Feed and Organic Resources can be integrated into livestock development, sustainable agriculture, waste management, and circular economy programs to reduce waste, improve livestock nutrition, and create value from agricultural by-products. Its adoption contributes to SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action).

To integrate this technology into your project, plan and budget for the following activities and prerequisites:

- Facilitate access to peel processing technologies, composting systems, drying facilities, and silage-making equipment.
- Build partnerships with IITA, farmer organizations, livestock cooperatives, processors, extension services, and municipalities.
- Train farmers and processors on feed preparation, composting, silage production, and safe utilization practices.
- Promote women's and youth participation in waste recycling, feed production, and composting enterprises.
- Monitor peel processing volumes, waste reduction, feed availability, soil fertility improvements, farmer incomes, and jobs created.

Technology from

ProPAS

Commodities

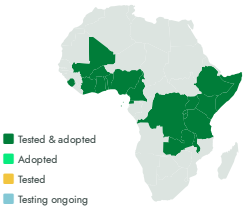
Bananas & plantains

Sustainable Development Goals

Categories

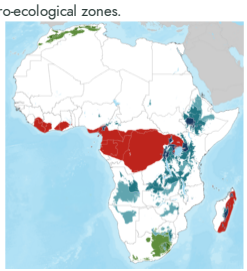
Pre-production, Equipment, Agrifood processing

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

Breeders

16,000 USD	IP
Larger multi-channel 2.0 kWatt machines	Open source / open access