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Use of Animal Feed Into Banana Stem

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Abstract

A Research entitled USE OF ANIMAL FEED INTO BANANA STEM nutritious fodder aims to create a cheap but nutritious, from ingredients Stem Banana, Yeast, Pandan Leaf, Wheat Starch, and water, fermented for \pm 24 hours. Created. samples and successfully sampled to. , Banana stems used for vegetable protein nutritional value.

Keywords: animal feed; nutritious; banana stem; yeast; pandan leaf; wheat starch; water; fermentation;

1. Preliminary

1.1. Background

Banana stem is one part of a banana tree that is rarely used / processed by the community. Usually after the banana tree fruits banana trees will be cut directly, because the banana tree can only bear fruit once. Almost all parts of the banana tree are taken but rarely are banana stalks taken, and even left to rot. Whereas banana stems contain substances that are very useful and often used in the medical field, but few people know about it.

Banana stem is one of the agricultural waste that has not been utilized, banana stem comes from banana tree (*musa paradisiaca*) which has been harvested banana fruit, almost all regions in Indonesia banana tree grows fertile with a variety of varieties are very diverse. Gedebog banana as an alternative feed source has nutritional content. According to various studies or research results, gedebog is known to have a complete nutritional content as a substitute for animal feed. The average composition of nutrients in banana stem include: dry matter 87.7%, Ash 25.12%, Crude fat 14.23% Crude fiber 29, 40% Crude protein 3% including: amino acids, amine nitrate, glycosides, containing N, Glycipipids, B vitamins, Nucleic acids, non-nitrogen (28.24%) extracts including carbohydrates, sugars and starches.

With the known nutritional content in banana stems, of course the needs of goat meat is not an obstacle for breeders - in other words gedebog is the right candidate for substitute animal feed. Indeed, the amount of crude protein gedebog is not very high but by mixing other ingredients, such as: yeast, starch and added fermentation can increase the crude protein in banana gedebog.

We conducted this research to increase the utilization of banana stems, especially in the field of animal feed so that banana stems are not wasted and tell the community that the banana stem has many benefits because it contains vegetable protein that can make fat and healthy animal feed.

1.2. Problem Formulation

1. Can make nutritious feed from banana stem?
2. How to deal with community issues, especially cattle ranchers about alternative solutions for making cattle feed and how to improve public knowledge about the process of making animal feed with banana stem by fermentation.

1.3. Limitation Of Problem

Limitation of the problem made is Just making animal feed from banana stem

1.4. Research Objectives

1. Cultivate a rarely used banana stem
3. Makes nutritious feed
4. Conducting counseling to the community so they know that there are benefits of banana stem
5. Conducting health education to the community, especially farmers, about the manufacture of animal feed from banana stems with fermentation.
6. Undertaking knowledge transfer includes matters related to the manufacture of animal feed and management of community organizations.
7. Increase the level of the economy of society in general, especially farmers to make savings in terms of savings consumption.
8. Creating an example of a productive and healthy center for animal feed

1.5. Benefits

1. Can make cattle become fatter and healthier because of animal feed from banana stem
9. Increase the utilization of banana trunks
10. Communities targeted by the program can utilize that knowledge in everyday life.
11. Communities gain knowledge about the manufacture of animal feed from banana stems by fermentation and with the management of community organizations.
12. Empowering economic activities of the community, especially farmers, by opening opportunities for animal feed manufacturing, as well as austerity efforts.

2. Literature Review

2.1. Banana Stem (*Musa Paradisica*)

Banana is a commodity most popular by the people of Indonesia. The reason for the fruits are yellow is a fairly affordable price and also contains nutrients and vitamins are enough to nourish the body. Bananas are also a plant that can be said is not difficult to be cultivated. Because this plant in its care does not use too much fertilizer.

In general, bananas can live in areas high and low. This means that in banana cultivation we do not need to bother to find a good land surface. In order for banana plants to grow properly then should be placed above the altitude of 100 mdpl (meters above sea level) with soil slightly moist and open conditions.

In addition to the above conditions, banana plants will grow and grow well if easily exposed to sunlight. Vice versa banana plants will not grow under puddles.

Scientific Classification of Banana Trees

Kingdom	: Plantae (Tumbuhan)
Sub Kigdom	: Tracheobionta (Tumbuhan Berpembuluh)
Infra Kingdom	: Streptophyta (Tumbuhan Darat)
Super Division	: Spermatophyta (Tumbuhan Berbiji)
Division	: Magnoliophyta (Tumbuhan Berbunga)
Class	: Liliopsida (Tumbuhan Monokotil)
Sub Class	: Commelinidae
Ordo	: Zingiberales
Family	: Musaceae
Genus	: Musa
Spesies	: Musa paradisiacal

Here are the morphological characteristics of banana trees:

1. Root

Rooting systems located on banana plants generally come out and grow from the bongo (corm) side and bottom, rooted fibers, and do not have the roots of the riding. Root growth is generally clustered towards the sides below the soil surface and leads to the ground reaching along 4-5 meters. However, the range of roots penetrates only at a depth of land between 150-200 cm.

2. Trunk

Banana stems are divided into two kinds, namely the original stem called bongol and pseudo stems or fake rods. Bongol is at the base of the pseudo stems and is below the soil surface and has many buds that are prospective saplings of banana plants and is where the roots grow. Pseudo stems are composed of leaf-lined leaves that cover each other, grow upright and sturdy, and located above the soil surface.

3. Leaf

The shape of banana leaves is generally long, oval, with unequal width, the tip of the leaf blade, and the edges are flat. The location of the leaf is scattered and arranged in a relatively long stalk with a leaf strand that is easily torn.

4. Flower

Banana flower or often called the banana heart out of the tip of the stem. The arrangement of flowers is composed of protective leaves covering each other and the flowers lie on each axilla between the leaf and form a comb. The banana flower includes a single home flower. the female flower at the base, while the male flower is in the middle. The flower consists of male flowers and female flowers at the end.

5. Fruit

Bananas are arranged in bunches of bunches consisting of several combs and each comb is 6-22 bananas depending on the variety. Bananas are generally seedless and triploid. Except for diploid kluthuk banana and have seeds. The process of fertilization in the absence of seed is called partenocarps. The size of a banana varies depending on the variety. Length between 10-18 cm with a diameter of about 2.5-4.5 cm. Fruit sideways 3-5 grooves, bent with a pointed tip or form a bottle neck. Flesh thick and soft fruit, young

fruit skin is green and when old turns to yellow and the structure can be thick and thin also depends on the varieties of bananas.

To study this part of banana tree used is banana stem. The actual rods are actually called tubers or rhizomes. While false pseudo (false) is often regarded as the real trunk. All stems are green, not branching with altitudes reaching 6-7.5 m. The pseudo-rods are formed by the overlapping of leaf-barking (leaf-shaped) that grows from underground stems to a thickness of 20-50 cm (Nuskha Amri Luqman, 2012.). Although this pseudo-stem is very thick and composed mostly of water, it is very sturdy and can carry weight up to 50 kg or more.

Banana trunk contains sap:

- Saponins and Kuinan
- Function: Antibiotics and pain relievers.
- Lectin
- Function: Stimulates the growth of skin cells
- These contents can kill bacteria in order not to enter on the part of our body that was injured.
- Tanin substance
- Nature: Antiseptic
- Substance Saponin
- Nature: Dilutes phlegm

Yeast

Yeast is usually used for the addition of protein in the fodder along with fish meal. In broilers, fish meal ingredients or soy flour can be replaced with yeast with nitrogen values in comparable feed. Likewise in laying hens

In some ways the growth of yeast in feed material leads to favorable changes such as improved feed ingredients in terms of quality, both from nutritional aspect and digestibility as well as increasing their storage capacity. The use of yeast is a source of protein and vitamins for human consumption and livestock 100 grams of Yeast contains:

- Energy: 136 KiloKalori
- Protein: 43 gr
- Carbohydrates: 3 gr
- Fat: 4 gr
- Calcium: 140 Miligram

Wheat Starch

Kanji flour or also called cassava has a high energy level, almost equal energy levels in corn, but low levels of protein and amino acids. Cassava flour is classified as easily digested carbohydrates. The results of research and application in hot areas have proven, that the ingredients of feed from cassava have better biological value compared with low quality rice bran. Utilization can reach 75% in cheap / commercial concentrates.

100 grams of Kanji Flour contains:

- Energy: 362 gr
- Protein: 0.5 gr
- Carbohydrates: 86.9 gr
- Fat: 0.3 gr

Pandan leaves (Pandanus Amaryllifolius)

Pandan leaves are: Tonikum, appetite enhancer, gives sedative effect (tranquilizer). Chemical Content on Pandan: Alkaloids, Saponins, Fluoids, Tannins, Polyphenols, and Dyes

3. Methodologi Research

3.1. The Research

Physics Laboratory Academi Maritim Belawan Jl. Kapten muslim comp. Griya riatur A6/26 Medan Sumatera Utara-Indonesia

4. Time Research

This study was conducted on 1 July to 10 September 2017

5. Tools And Materials Research

The tools and materials used are as follows:

Tools

- Scales
- Knives
- Beaker Glass
- Spiritus
- Buffer
- Colision
- Mixers

Materials

- Wheat Starch
- Pandan leaves
- Yeast
- Banana Stem
- Water
- Biostarter
- Cane / sugar
- Salt

Composition of Materials needed:

13. Banana Stem : 1 kg
14. Weast starch :0,1 kg
15. Pandan leaves: 0,01 kg
16. Yeast : 0,1 kg
17. Salt :0,004 kg
18. Drops of sugar cane / sugar: 0,004 kg
19. Biostarter: 30 cc (3 caps)
20. Water: 0,4 liters (Depending on the dryness level of the material)

Work procedures

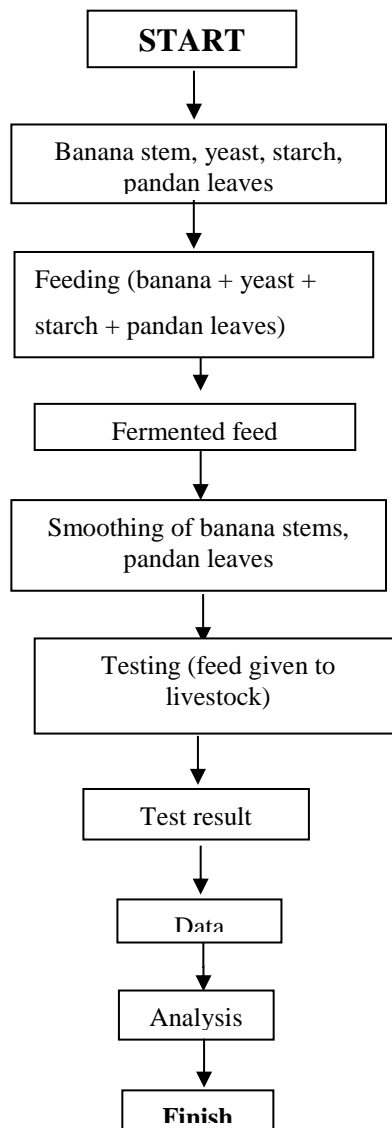
1. Banana trees are cut into pieces (the smaller the better)

2. Mix pieces of banana tree, yeast and starch flour evenly
3. Put Biostarter into 1 liter of water, mix sugar drops / sugar, stir and let stand for 15 minutes.
4. Then pour into the feed until blended. Sprinkle salt and stir until smooth
5. Insert the feed into a plastic / plastic drum or cover with airtight tarp for 1 day
6. The feed is ready to be given to cattle every morning and evening
7. Feed this fermented banana Gedebog, can last 10-15 days.
8. Tips in mixing feed, mix feed ingredients ranging from feed ingredients with the smallest volume.

How to give to cows:

1. 1 - 7 days every morning cattle fed as usual.
2. In the afternoon given fermented banana sticks feed a little, done gradually.
3. Once the cow gets used, give 1.5 s / d 2 kg per day.

Flow Diagram



6. Conclusions And Recommendations

6.1. Conclusion

Based on research that has been done about Nutritious livestock feed from banana stem hence can be concluded:

4. Nutritious cattle feed from banana stems has been created
5. Can replace fuel energy
6. More efficient
7. How to make it very easy
8. Banana stems have been fulfilled as animal feed
9. Long-lasting quality of animal feed compared to green grass.
10. The price of animal feed making is relatively cheap
11. Helping the community as well as overcoming the solution to the source of animal feed that has been dependent on green grass
12. With the use of banana stems as animal feed with good nutrition and nutrition will help the community to increase livestock production and also the selling value of livestock maintained, so that the future of food intake for animal feed source can be overcome when the green grass crisis caused by the dry season and availability limited grass
13. Assist the government in overcoming the low meat production as well as the quality of meat produced by our country and suppress the cartels that play on the market that has been troubling the community, especially the farmers.
14. Achieve self-sufficiency of livestock in Indonesia and reduce dependence on other countries that supply meat to Indonesia

7. Suggestion

1. Further research can be found other additional ingredients that can add nutritional value from nutritious feed from

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