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Popular Article

Bokashi System of Rearing of Pigs and Its Effect on Pig Health

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Abstract

"Bokashi" is a fermented organic substance, used in pig bedding and feed with the goal of improving environmental hygiene and digestive health. We expected that the Bokashi system would lower pathogen burden, promote gut microbiota diversity, and enhance immune response in pigs. In this article we are emphasizing the impact of a Bokashi-based pig rearing technique on pig health and well-being, contrasting it with traditional approaches.

Key words: Bokashi, Pig, management, Indigenous Microorganism (IMO), Effective Micro-Organism (EM)

Introduction

Bokashi (Japanese word meaning fermented organic matter). Bokashi Piggery promotes the growth and maintenance of healthy pigs. It consists of use of indigenous microorganism (IMO) to promote growth and management of healthy pigs. Modern pig farming necessitates a number of technological innovations in order to prevent economic losses caused by increased production and the degradation of pig health. IMO suppresses offensive smell of manure, prevents flies in pen, reduces fatty layer under skin, and produces healthy pigs that do not require antibiotics, improve the gut system of the pigs.

The probiotics most commonly utilized in pig feeding are primarily microorganisms from the families *Lactobacillus*, *Bifidobacterium*, and *Enterococcus*. They have been proven to maintain the gut's microbial balance, stimulate enterocyte formation, regulate gastrointestinal motility, improve

digestion and absorption processes, and aid in the production of organic acids and metabolites that neutralize bacterial toxins. However, the main impact of probiotics in the gastrointestinal tract of pigs is to inhibit the colonization of the mucosa by harmful bacteria. Probiotic solutions based on effective microorganisms (EM) are being utilized to feed pigs. EM Bokashi is one of the EM-based products used in the pig diet. It contains microbial strains that have not undergone any technological processing. Preparations with this type of composition have previously been proved to be a novel solution with the ability to stimulate the systemic immune system. Bokashi is added to the pig bedding to stimulate fermentation and minimize odours. This generates a composting environment in the pig pen. The resulting Bokashi can be used as bedding and feed supplement.

Requirements for housing

8m X 4m for 20 fatteners or 6 sows (about 16 square feet each pig) is the requirement. The roof is like any other pen, and the walls are 2 feet above ground, so the pigs should be able to see out when standing. A hole in the earth at least 3 feet deep, containing 40% saw dust, 10% dried biomass, 20% rice bran, 20% rice husk, 20% good soil, 10% rice husk charcoal or other charcoal, and a sprinkle of black salt and bamboo vinegar, IMO. All of the components are carefully mixed, and then 60% water is added. This moisture concentration is optimal for the IMO to multiply.

Management

After levelling the floor, allow one week for the IMO to multiply. Following that, pigs can be introduced. If they begin to use their snouts and appear relaxed, this is a good sign. It is necessary that the flooring be kept level and soft. This requires 15 minutes daily. The main meal is served three hours before dusk and consists of a fermented mixture of agricultural waste and rice bran. Greens and grass should be in the morning meal. After 6 to 8 months for fatteners, ready for table purpose. Land required 240 sq. ft for 12 fatteners. Compost from the piggery can be utilized for organic farming at 1 kg per square metre. Compost may also be used as fish feed and also in paddy field.

Bokashi System of Housing

1. **Lactic Acid Bacteria (LAB)**

Rice, water, milk, and jaggery are the required materials.

Steps to Follow: Wash the rice. Store the water from washed rice for one week at room temperature. After one week, combine the rice water and fresh milk (1:10). Leave the mixture for a week. After one week, sift the mixture and combine it with jaggery (1:20). The LAB is ready to use.

2. **Indigenous Micro Organism (IMO)**

Steps to follow: Wet some rice bran in a bucket; the mixture should be 50% moisture and crack when touched. Go to a good jungle area and clear the surface, dig a 3–4-inch hole to put the rice bran, Spread some rice bran around the hole. Replace the dried leaves, cover with greenery, cover with a

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sack, cover with greenery, and check in four days. If there is fungus, IMO is present. Mix rice bran, water, and jaggery, add a small amount of IMO, cover with a cloth, and keep for a week. The IMO can be taken out for storage, and the IMO will multiply.

Effective Micro-Organism (EMO)

Effective Microorganisms (EMO) is a mixed culture of helpful microorganisms that predominantly includes lactic acid bacteria, yeasts, and photosynthetic bacteria. EMO is a revolutionary solution for pig farmers looking to eradicate undesirable odours from their piggeries. EMO combats unwanted odours while also promoting a healthier environment for both pigs and farmers.

EMO improves pig health by maintaining a balanced microbial ecosystem. This lowers the danger of infection and improving the immune system. Pigs treated with EMO have fewer respiratory problems and better overall health. Creating and applying own prepared EMO solution is a low-cost and eco- friendly to keep piggery clean and odour-free.

Mixing Procedure

1. 40%-50% of saw dust
2. 20%-30% of top soil
3. Add 7% of charcoal waste
4. 15%-20% dry bio-mass
5. Add 10% others (EM, black salt 1kg crush, jaggery & bamboo vinegar)
6. Mix all the ingredients
7. Fill the pig pen with all the mixed ingredients
8. Then level the pig pen
9. After levelling the floor wait for one week or less for IMO to multiply

Benefits of using EM products in Piggery

Amelioration of malodours: EM will minimize disagreeable smells caused by the accumulation of alkaline ammonia and trimethylamine. Because the organic acids in EM have acidic qualities, spraying them will chemically neutralize them and quickly eliminate the odour. Spraying EM on a daily basis will colonize beneficial bacteria, reducing the growth of putrefying bacteria. Feeding EM Bokashi to animals will also improve their internal microbiota, reducing the offensiveness of manure odours.

Decrease dosages of antibiotics and disinfectant: Spraying EM within the barns, as well as adding EM to animal feed and drinking water, will improve the microbial habitat of the entire barn, including the livestock's intestinal bacteria flora, and keep the entire operation healthy. As a result, it is possible to reduce the use of antibiotics and disinfectants for disease prevention.

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Reduces stress: In general, any kinds of stress on animal limit its healthy growth, and results in lower productivity and higher mortality. Spraying EM inside barns will improve the environment in which livestock are grown by eliminating undesirable odours and reducing the presence of flies.

Increase productivity: By lowering mortality rates and improving feed conversion ratio. Using EM regularly for animal husbandry will improve livestock health, decrease the incidence of diseases and increase productivity. In pig farming, incidence of diarrhoea will reduce growth rates and is one of the causes of animal death. Application of EM will adjust the intestinal environment and ameliorate diarrhoea as well as improve the efficiency of digestion and increase feed conversion rates (FCR), thereby increasing the productivity.

Improved quality of animal products: Spraying EM in barns will reduce malodour, and adding EM to feed and drinking water will enhance digestive environment of animal, so preserving health and making them less prone to become ill. As a result, fat quality improves, there is no identifiable meat odour, products keep fresher for longer periods of time, and the taste and quality of animal products improves. It is also possible to limit the use of vaccines and antibiotics, so promoting safer animal product production for both producers and consumers.

Additional benefits

Composting of Livestock excreta

Using EM products will reduce malodour so it is easier to handle compost. Adding EM and EM Bokashi to feed and drinking water for the livestock will regulate the intestines of livestock and thus, reduce the odour of their excreta. Excreta dry faster and the composting time will be shortened. Also, using EM enables the manufacture of high-quality compost which has a soil improving effect. Resolve drainage problems and improve waste water treatment in the livestock barn by spraying EM inside the barn.

Livestock excreta sprayed with EM does not have strong odour and spoilage is suppressed, thus waste water treatment can be handled more smoothly. Also, pouring EM into septic tanks will promote purification. As a result, it is possible to reduce foul odours of livestock waste water, promote the decomposition of sewage, reduce sludge and effectively utilize slurry.

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