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TRAINING IN THE UTILIZATION OF BROILLER CHICKEN WASTE

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Abstract

Lately, the growth in the need for animal meat, which is broiler chicken, has increased among the people of Aceh in particular and Indonesia in general. The fulfillment of meat needs also results in side effects caused when the fattening process occurs. With the high amount of chicken meat production, in a linear fashion, waste from animals is also a catalyst to increase and will cause health effects to the community if not properly handled. The thing that appears in general in chicken farming is the smell caused by NH 3 gas , H 2 S, and other elements. Then usually flies will also be a catalyst, and this will disturb the environment. The Self-Service Team from Syiah Kuala University is trying to find a solution to this problem . Then, the socialization activity to the Aceh Jaya breeder group was carried out on June 27, 2021 and also to establish cooperation in the form of providing information on how to deal with the chicken waste . There are several activities carried out by the socialization teams from USK , namely forming a work network, providing knowledge about healthy industrial ecology, socializing the waste process , and demo-demons of the activity process so that it can be beneficial to the members of the breeders. The result obtained from this activity is networking, sharing industrial ecology knowledge, quality organic fertilizer products, giving a greening effect to the environment. The hope is that this cooperation will not only stop here and next time we will continue to do socialization with different activities in this Aceh Jaya breeder group.

Keywords: training, waste utilization , broiler chicken

INTRODUCTION

Today , the world of animal husbandry, especially poultry, is growing rapidly in Indonesia. Many poultry farming businesses have grown as a result of this need for chicken meat. Poultry farming, especially broiler farming, produces meat which is the majority of animal protein consumption . In addition , producing chicken meat in chicken farms has negative consequences . The problems faced by the partners are, the unpleasant smell due to the presence of chicken droppings, the waste that is thrown away, how to process the waste in order to have added value.

The negative impact of the poultry farming industry is largely due to the waste produced by broilers. Waste water, chicken droppings, and unpleasant odors are the most common types of waste produced by poultry keeping. The foul odor is caused by nitrogen and sulfide components in chicken droppings, which break down into ammonia gas, nitrite gas, and hydrogen sulfide gas during the decomposition process. Pollution in the air. According to Fontenot et al. (1983), chickens produce 0.06 kg of fresh waste per day per head, with a dry matter percentage of 26%, which can produce odorous gases.

Ammonia gas and hydrogen sulfide (H2S), as well as dimethyl sulfide, carbon disulfide,

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and mercaptans, contribute to foul odors. In anaerobic conditions, such as a wet pile of dirt, these odor-causing chemicals can easily grow. Even in very low amounts, these chemicals can be detected by aroma. For H2S, a concentration of 0.47 mg/l or parts per million (ppm) is required . (Charles and Hariono, 1991). Table 1 shows the influence of ammonia levels on humans and livestock (Setiawan, 1996), while the influence of hydrogen sulfide gas on humans is presented in Table 2 (Pauzenga, 1991).

Chicken droppings have an unpleasant smell and will have a detrimental effect on human health around the farm area , as well as livestock productivity . Poor management of the livestock environment can result in financial losses for farmers, because these gases can reduce poultry productivity and increase health costs. Because chickens are less resistant to diseases caused by ammonia pollution, such as chronic respiratory disease (CDR), which is a chronic respiratory disease, and chickens are more susceptible to the Newcastle Disease (ND) virus, health production increases.

Table 1. Effects of ammonia gas on humans and animals

Ammonia level (ppm)	Symptoms/Effects caused to humans and livestock
5	The lowest rate of smell
6	Irritation of the mucous membranes of the eyes and airways began to appear
11	Decrease in chicken productivity
25	Maximum tolerated rate for 8 hours
35	The maximum rate that can be tolerated for 10 minutes
40	Starting to cause headaches , nausea, loss of appetite in humans
50	A drastic decrease in chicken productivity and also swelling of the fabricious bursa *Source:*

Source: Setiawan, 1996.

Table 2 Effects of Exposure to Hydrogen Sulfide (H 2 S) on Humans

H 2 S gas rate (ppm/hour)	Influence on humans
10	Eye irritation
20	Eye , nose and throat irritation
50- 100	Nausea, vomiting, diarrhea
200	Dizziness, depression, prone to pneumonia
500 Per Minute	Nausea, vomiting, fainting
600 Per Minute	Dead

Source : Pauzenga, 1996.

Each day will be produced more than one ton of wet manure with capacity 80,000 chickens (Anonymous, 2012). Chicken manure from the edge of the cage can be used to make chicken manure compost as a raw material. The smell of chicken droppings has a detrimental effect on human health around the farm area, as well as on animals, causing livestock yields to decrease. Poor management of the livestock environment can result in financial losses for producers because these gases can reduce poultry production

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while increasing health production.

Serpong Tangerang National Atomic Energy Agency Laboratory (No. 144/DAGST/AIR.4/96) examines the nutritional content of chicken manure compost. It has a nitrogen content of 4.06 percent, a phosphorus content of 6.06 percent, and a potassium content of 2.30 percent. In addition, composting chicken droppings can help avoid water contamination caused by the excessive use of inorganic fertilizers, which can harm various aquatic organisms.

Chicken farming has recently been accused of contributing to environmental pollution. Therefore , the government in this case the Ministry of Agriculture has acknowledged this by issuing Ministerial Decree No.237 /1991 and Ministerial Decree No.752/1994 which regulate that animal husbandry with a certain population must be supplied with certain feed. equipment.

Kutacane Regency is one of the broiler farming locations. Many broiler farms in Kutacane Regency produce chicken waste every day. The presence of chicken droppings causes the problem of bad smell which has a bad impact on the environment, so it is necessary to treat it. Utilizing it is one approach that can be used.

Converting chicken farm waste that is chicken manure into livestock manure compost is one of the alternative techniques that can be applied and has promising prospects. Several broiler cages can be seen in Kutacane Regency.

Each cage can produce more than 20 sacks per month on average , up to a total of 120 sacks per month from 6 chicken cages . Economic losses , as well as health and environmental problems , are expected if waste treatment is not provided on a sustainable and substantial scale. Therefore , an alternative technique is needed that can be used and provide good results.

The purpose of the Broiler Farming Group is to produce chicken compost products that can be used by the people of Kutacane Regency (short-term goal), and the long -term goal is to sell the compost to other consumers both inside and outside Kutacane Regency, thus increasing the income of chicken farmers and the community around the chicken coop.

METHOD

Socialization and teaching by giving a presentation, or doing hands-on practice supported by guidance is an excellent method for technological change in society. The following techniques are used in this activity:

a. Counseling/socialization of the need to handle chicken farm waste in the form of direct/face-to-face conversation.
b. Instructions on how to make compost from chicken droppings

The target of this devotional activity is the community in Kutacane Regency which consists of chicken farmers. In this activity , it plays the role of information management , transportation, data on the number of chickens, and administration of this service project, a group of broiler chickens in Kutacane Regency in the utilization of chicken waste waste as compost raw material. As for the description of the technology applied in the implementation of the ipteks application of chicken manure composting activities is as follows:

The process of making compost is done by mixing bran rich in protein and vitamins with chicken manure with the following ratio, bran/bran: rice husk: chicken manure: Water = 3 : 3: 2: 2. Then add water to a water content of 20-30%, add EM activator 4 5 tablespoons/liter of water, then stir. After the mixing of the material is finished put it in the

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composting tub or you can also use a tarp. Stirred every 1 (one) week once for 1 (one) month. The compost is ready, when the temperature is stable, then 1% lime is added until the compost is dry, ready to use.

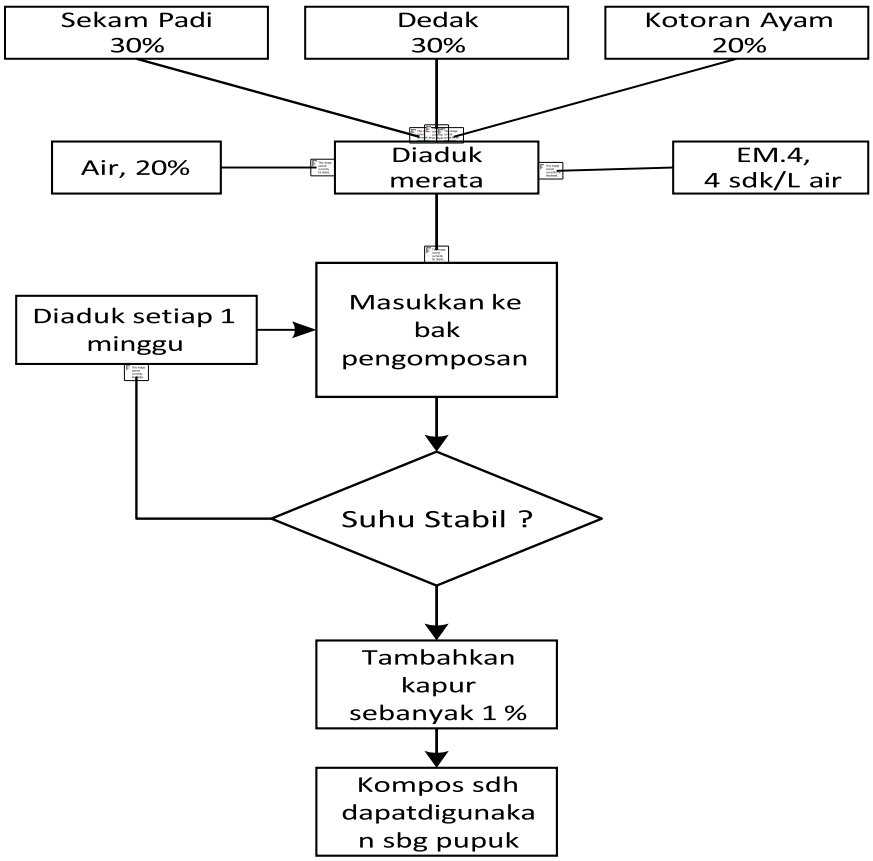

Figure 1. Schematic of the Stages of Making Compost Fertilizer from Poultry Waste

RESULTS AND DISCUSSION

Members of chicken farmers participated in this counseling, a demo of how to make chicken manure compost, and a demo of how to pack chicken manure compost were all done directly next to the broiler chicken coop that became a service partner. Broiler farms produce to meet the poultry meat needs of Aceh Besar and Banda Aceh, in accordance with extension activities . Furthermore, meat production, as well as poultry farming, have detrimental consequences if not managed seriously. The process of composting chicken manure should be done with a poultry farming company so that chicken manure waste can be utilized and have added value, increasing the farmer's income. Because this activity is in the form of socializing the way of making compost, several activities in the process of producing compost fertilizer products can be described as follows.

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A. Socialization

The initial stage of socialization is by explaining the dangers and risks posed by animal excrement, especially chicken. Then explain the manufacturing process simply and easily to the participants. Then, several stages can be demonstrated until the product is considered to have dried after a one-week process and the spread of ready-made fertilizer. The discussion is conducted in a relaxed manner and provides direct insight to the group where the discussion also provides an opportunity for questions and answers to the participants.

Picture. 3 Broiler Chicken Cage

The two- story chicken coop has a capacity of 28,000 broiler chickens for one rearing cycle. Chicken droppings are below the bottom of the floor where broilers sleep

B. Manufacturing Demonstration

The atmosphere of mixing the composition of the ingredients that will be mixed will be demonstrated in front of the participants directly so that they can understand well.

C. Product results that are ready to be sown to crops

Fermented products that have lasted for a week and dried are rich in nutrients so that they will provide fertility to plants and fertilizers rich in these nutrients are then ready to be sprinkled on any plant.

CONCLUSION

Composting with chicken droppings is one alternative that can be used and has promising results . The compost can be used to fertilize agricultural and forestry land, as well as overcome the problem of chicken farm waste, and can also be sold to the general public so that chicken manure compost can help people in greening plants . Through this activity, it is hoped that there will be further community service activities, for example in the field of "Management of Commercial Poultry Compost or Waste-Based Fermented Feed Production" or other themes . So that they have the skills to make chicken manure compost that can be

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used for fertilization in their own garden and or sold to increase income .

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