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Concept of Thinking about Strategies to Increase Chicken Production

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Abstract. Efforts to increase the production of free-range chickens can be carried out through several strategies, including Early Separation of Chicks and Mothers, separation of chicks from their mothers from an early age to reduce the period when chickens stop laying eggs because they take care of their offspring for approximately 105 days. Early separation can extend the egg-laying period to more than 15 days. Use of Intensive Maintenance Patterns: Replace extensive maintenance patterns with more efficient intensive patterns. The intensive pattern involves the use of closed cages and more controlled feeding, which can improve the quality and quantity of nutrients in the feed as well as the number of chickens raised, the crossing of Kampung Roosters with Laying Breed Females, The crossing between Kampung Roosters and laying breed females can increase the production of kampung chickens. Estimating the physical appearance of a chicken's body, such as feather color, shank length, chest width, body length, and beard shape, can be used to estimate the production of free-range chickens. Genetic Selection is conducting genetic selection to select livestock that have superior genetic quality. This is done by selecting broodstock based on egg production, number, and weight. This selection process requires individual production records and daily mixing of mothers and males to improve egg fertility and hatchability. Use of Modern Technology, using technologies such as brooding (giving a warming lamp) to create conditions similar to those produced by hens. This helps to nurture the chicks when they are newly hatched. By implementing this strategy, the production of free-range chickens can be increased to meet high market demand.

Keywords: thoughts, strategy, improvement, production, free-range chickens

INTRODUCTION

"Ayam kampung" refers to free-range chickens native to Indonesia and Malaysia. These chickens are typically raised naturally, roaming freely and foraging for food. They are known for their lean meat, distinct flavor, and lower fat content compared to commercially raised chickens. Ayam kampung is popular in traditional Southeast Asian dishes and is often considered a healthier and tastier alternative to conventional poultry.

Free-range chickens have several advantages compared to broiler chickens or other purebred chickens. Here are some of the advantages of free-range chickens:

1. **Taste and Texture of Meat:** Free-range chicken meat is usually tastier and chewier than broiler chicken. Its distinctive, more savory meat flavor makes it popular in many traditional dishes.
2. **Nutritional Content:** Free-range chickens have lower fat and higher protein content than broiler chickens, making them healthier to consume.
3. **Free from Hormones and Antibiotics:** Free-range chickens are usually raised naturally without excessive doses of hormones or antibiotics, making them safer to consume.
4. **Egg Quality:** Free-range chicken eggs are also of good quality, with a thicker yolk and a more savory flavor. Its nutritional content is also considered higher than purebred chicken eggs.
5. **Rearing Environment:** Free-range chickens are kept in a free-range manner with access to fresh air and sunlight. This not only makes chickens healthier but also more environmentally friendly because it reduces the use of intensive cages.
6. **Resistance to Disease:** Free-range chickens tend to be more resistant to disease than broiler chickens due to their stronger immune systems, which are a result of natural rearing.
7. **Economic Value:** Free-range chickens have a higher economic value in the market due to their high demand and limited availability. This can benefit small farmers.

These advantages make free-range chickens a healthier and more valuable choice for many consumers and farmers. Although free-range chickens have many advantages, there are several disadvantages that need to be considered, including:

1. **Slow Growth:** Free-range chickens grow slower than broiler chickens. They usually take longer to reach the desired weight to harvest, around 5-6 months, while broiler chickens only need about 6-8 weeks.
2. **Lower Egg Production:** Free-range chickens typically produce fewer eggs compared to laying hens. This makes egg productivity from free-range chickens less profitable for farmers who focus on egg production.
3. **More Feed Needs:** Since free-range chickens are raised freely, they need more natural feed such as insects, grains, and grass. This can be a challenge if natural feed sources are not available in sufficient quantities.
4. **Higher Production Costs:** The production costs of free-range chickens can be higher compared to broiler chickens due to their longer maintenance and more

varied feed needs. This can raise the selling price of free-range chickens in the market.

5. **Variety in Size and Quality:** Because it is raised naturally, the size and quality of free-range chicken meat can vary. This can be a challenge in meeting the standards of consumers who want uniform products.
6. **Vulnerable to Predators:** Free-range chickens make free-range chickens more vulnerable to attacks by predators such as dogs, snakes, and birds of prey. This can cause losses for farmers.
7. **Health and Hygiene:** If not managed properly, free-range chickens may be more exposed to various diseases and parasites. This requires extra attention to hygiene and vaccination.
8. **Limited Market:** Although the demand for free-range chickens is high, the market for free-range chickens may be more limited than that for broiler chickens, which are more commonly sold in supermarkets and fast-food restaurants.

Despite these shortcomings, many consumers still choose free-range chicken because of its taste quality and health benefits.

Based on the advantages and disadvantages of free-range chickens, a concept for developing a development strategy for free-range chickens to meet the community's nutritional needs was prepared.

LITERATURE

The literature review on ayam kampung (Indonesian free-range chicken) highlights several key aspects:

Productivity and Consumption

Ayam kampung is a popular choice for Indonesian households due to its affordability and availability. The consumption of chicken meat, particularly ayam kampung, has increased significantly in recent years, with a consumption rate of 12.4 grams per capita per week in 2019 (Hadi et al., 2022). Intensive farming methods are being adopted for ayam kampung, with kendang (coops) designed to maximize space efficiency. A typical kandang for 450 birds measures 10 meters by 8 meters. For smaller flocks, such as 75 birds, the required space is 2.5 meters by 4.25 meters. The kandang litter is typically made from materials like rice husk, straw, sawdust, and limestone, with a 7-9 cm thickness

Growth and Development

A study in Manokwari, Papua Barat, observed the growth of 65 ayam kampung over four months. The results showed significant differences in weight between male and female birds. The average weight of male birds increased from 363.8 grams at one month to 1,877.6 grams at four months, while female birds increased from 321.9 grams to 1,503.3 grams. The study concluded that genetic diversity in ayam kampung growth is high (Zurahman dan Anwarudin, 2021).

Genetic Variability

Research in Mataram City, Nusa Tenggara Barat, aimed to understand the external genetic characteristics of ayam kampung. The study found various genetic traits, including different feather patterns and shank colors, which are influenced by factors like gender and growth patterns.

Breeding and Performance

Ayam kampung unggul balitbangtan (KUB) is a selectively bred strain known for its superior performance. KUB birds have lower mortality rates, lower feed consumption, and better disease resistance than regular ayam kampung and broiler chickens. The KUB strain produces more eggs and has higher egg prices (Permadi et al., 2022).

Feather and Shank Characteristics

Studies have analyzed the frequency of qualitative traits in ayam kampung, such as feather patterns and shank colors. For example, 73% of ayam kampung in Bengkulu had a plain feather pattern, while in Konawe, 73.2% had the same pattern. The genetic makeup of these traits is influenced by various factors, including gender and growth patterns (Hasan et al., 2020). These studies collectively highlight the importance of ayam kampung in Indonesian agriculture, the adoption of intensive farming practices, and this breed's genetic diversity and performance characteristics.

METHODS

Research methods literature review, based on a study published in many journals, conferences, and the internet about ayam kampung. A research method involves collecting, evaluating, and synthesizing existing literature on free-range chickens. The goal is to provide a deep understanding of the development of free-range chicken production to identify trends and gaps and successfully develop new perspectives.

DISCUSSION

The way chickens breed is by laying eggs. Usually, chickens make a nest before laying eggs. The goal is to secure and keep the eggs at a temperature so that they can hatch. Chickens that can produce eggs are mature. Usually, the number of eggs can reach 12 eggs. After laying eggs, the hen will incubate them for approximately 21 days. If the eggs have hatched, then the chicks will come out. For 65 days, the chicks will be cared for by their mother. After being cared for by the mother, the chicks will become adult chickens. His body will get bigger, and his weight will increase. Chickens do not change shape (Nafisah, 2020).

Several things must be considered when raising free-range chickens, starting from the cage, cleanliness, and food. This must be done because free-range chickens do not have a better immune system when compared to broilers or laying hens that have been injected with drugs to make them more immune to various diseases. The free-range chicken coop must always be cleaned at all times. This is so that free-range chickens are not susceptible to diseases and germs that can inhibit their growth or reproductive process. You can use the manure from this chicken for plants. Free-range chickens can be fed carelessly; sometimes, they can look for them independently. It would be good to keep feeding them regularly and providing them with healthy food. Providing vitamins is also necessary so that free-range chickens can avoid all kinds of diseases. Choose healthy free-range chickens so that they can produce healthy offspring as well. An excellent native hen can be seen from her posture and how often she breeds or mates. It is best to separate the chicks from other adult chickens. This is so that the growth process is not disturbed because it is less competitive with other adult chickens. Selling free-range chickens is the part that farmers have been waiting for in raising free-range chickens, namely selling their livestock. Not only chickens can be sold, but eggs from free-range chickens can also be sold because they have higher efficacy and nutritional content. Sell free-range chickens that rarely breed or lay eggs, but do not sell free-range chickens of good quality.

The rearing of free-range chickens has also followed the management pattern of intensive purebred chicken farms. With increasing awareness of food safety and environmental sustainability, intensive maintenance patterns are required and environmentally friendly. It is necessary to obtain better quantity and quality and overcome the weaknesses of both intensive and traditional patterns.

Sari Y. Hayanti from the Jambi Agricultural Technology Assessment Center and M. Purba from the Livestock Research Institute, Bogor, in a review, described the characteristics of what, how, benefits, and the main supporting factors for intensive and environmentally friendly rearing of free-range chickens. The paper explicitly highlights developments in Jambi, but its overall content is also helpful as reference material for developing intensive and environmentally friendly rearing of free-range chickens in other archipelago regions.

Both authors believe that semi-intensive and intensive rearing of free-range chickens will produce better products than in extensive or traditional ways. Meanwhile, environmentally friendly maintenance is understood as an effort to raise free-range chickens that use natural (organic) feed more and provide traditional medicinal plants to reduce the use of inorganic medicines. With this combination pattern, food safety aspects can be more guaranteed because it avoids giving antibiotics, hormones, etc., which are often problematic due to residues in free-range chicken products. In addition to the performance of free-range chickens, the body's resistance to diseases can improve.

According to various research results, intensive rearing of free-range chickens can yield around 105-151 eggs/year compared to only 30-60 eggs in traditional maintenance. The weight of eggs per egg reaches 45.27 g/egg compared to 37.5 grams/egg, and the weight of chickens at 12 weeks can reach 708.0 grams compared to 425.19 grams (Director General of Livestock and Health, 2024).

Livestock development continues to be accelerated through increasing diversification efforts and intensification of livestock, supported by efforts to develop and utilize science and technology. Attention to the community needs to be paid attention to the sustainable development of people's livestock. Native chickens are Indonesian germplasm that has great potential to be developed because, geographically, it is very supportive of the population distribution in almost all rural areas in Indonesia. To avoid the attack of the kitter, the cage must be cleaned, not dirty, and always vaccinated. Delivery problems also need to be anticipated, for example by giving vaccines, vitamins, and spraying disinfectants before deployment. In the pancaroba season, many chickens die from gum boro disease which is very contagious. To overcome this, you can use herbal medicines such as ginger, kencur, and others. In addition, vitamins can also be given and to circumvent operational costs, organic feed can be given. The quality of broiler chickens starts from raising one-day-old chicks (DOC). Broder boxes are prepared where every 1

m2 has a capacity of 100 heads with a light bulb as a heater with a temperature of 350C which is turned on 2 hours before the DOC is entered. The heater (brooder) functions to maintain the stability of the temperature of the cage and the DOC immune system which is not yet stable in its function. Drinking water on the first day is added antibiotics and then given vita min. The starting period in the brooder is 14 days. After the chicken is one week old, the temperature is lowered to 30oC. A healthy DOC will appear agile and active. The feeding of the starter period in the first week is given as often as possible only on an adlibitum basis. The feed given is in the form of crumble feed with a protein content of 21%. Chickens are lowered from the broo der cage to the postal cage after 2 weeks of age. Previously, the postal cage had been prepared by covering the floor with dead lime and husks. The husk has high absorbency and maintains the temperature of the enclosure. When chickens are lowered into the postal cage, feed and drinking are first prepared and the curtains of the cage are prepared. The main factors causing the failure of the Kam Pung chicken development model are the low protein content of feed and the lack of awareness of farmers in implementing disease control. Intensive chicken cultivation has a higher growth impact on chickens with a shorter rearing period, namely 10-12 weeks and a mortality rate of approximately 10% and an R/C ratio of 1.12. This greater level of efficiency indicates that this intensive free-range chicken cultivation business is managed efficiently (Suprayogi et al., 2018). Improvement of genetic quality in free-range chickens can be done through several methods, including selection and cross-breeding. Here are some ways to improve the genetic quality of free-range chickens. Selection is the process of selecting individuals with the desired characteristics to be used as parents. With selection, farmers can choose chickens that have high productivity, good body weight, and resistance to diseases. Selection can be carried out based on various parameters, such as body weight, egg productivity, and resistance to disease. Cross-marriage, is the process of mating individuals who have the desired characteristics to produce better offspring. By interbreeding, breeders can combine the good characteristics of both parents, such as high productivity and resistance to diseases. Use of Genetic Markers Genetic markers are markers used to identify genes associated with specific characteristics. For example, the genetic marker of prolactin promoters can be used to speed up the selection process and increase egg production. Genetic markers help in speeding up the selection process and reducing the time required to produce better seeds[2]. Environmental Management, Environmental improvement is also important in improving the genetic quality of

free-range chickens. A good environment can help chickens develop properly, thereby increasing productivity and product quality. This includes ensuring comfortable cages, good feeding, and proper health management. Using pure seeds using pure chicken clumps or strains identified as having the desired characteristics can help improve genetic quality. These pure seeds can be produced through controlled selection and crossbreeding[5]. By enhancing this genetic quality, free-range chickens can have higher productivity, better body weight, and better disease resistance. This will help improve the quality and quantity of products and increase the sustainability of free-range chicken farming in Indonesia (Sartika, 2005).

CONCLUSION

The development of native chicken production requires a comprehensive effort, starting with livestock breeding, which involves selecting genetically superior seeds, intensive maintenance, such as providing nutritious food and comfortable cages, and the need for separation between mothers and their offspring, which is accompanied by the use of modern technology for daily maintenance.

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