



# Feeding and Vaccination techniques to improve the health and production of Beef Cattle

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## Abstract

Beef cattle are one of the important sources of animal protein for the people of Indonesia. However, beef cattle productivity is still low compared to other countries. One factor affecting beef cattle's health and production is feeding and vaccination techniques. This article discusses feeding and vaccination techniques that can improve the health and production of beef cattle. These techniques include the selection of feed type, frequency of feeding, quantity of feed, feed quality, mineral supplements, routine vaccination, and disease management. Applying these techniques is expected to improve cattle growth, reproduction, health and quality.

**Keywords:** Beef cattle, Vaccination, Entry

## 1. Introduction

Beef cattle are one of the most critical animal protein sources for Indonesians. According to Statistics Finland (BPS), there were 16.7 million beef cattle in Indonesia in 2020, and beef production was 3.4 million tons. However, beef cattle productivity in Indonesia is still low compared to other countries. One factor affecting the health and production of beef cattle is feeding and vaccination practices. Nutrition is an essential factor that determines beef cattle's growth, reproduction and meat quality. Vaccination is a preventive measure that can protect beef cattle against infectious diseases that can harm the health and production of beef cattle. Therefore, this study aims to discuss nutritional and vaccination techniques that can improve the health and production of beef cattle. The benefit of this study is to provide beef farmers with information and recommendations on optimal and effective feeding and vaccination techniques.

Feeding and Vaccination techniques to improve the health and production of Beef Cattle" is a comprehensive study that delves into the critical factors influencing the health and productivity of beef cattle in Indonesia. With a focus on feeding and vaccination practices, this study aims to provide valuable insights and recommendations to beef farmers, ultimately contributing to the enhancement of beef cattle growth, reproduction, health, and quality. The research explores various feeding methods, including the selection of feed type, frequency,

quantity, and quality, as well as the administration of mineral supplements. Additionally, it delves into the significance of routine vaccination and disease management in safeguarding the well-being and productivity of beef cattle. Through a combination of experimental, survey, and descriptive methods, this study offers a holistic understanding of the pivotal role played by nutrition and vaccination in the beef cattle industry.

## 2. Materials and Methods

Types of feed suitable for beef cattle, including nutritional value, amount, frequency and method of administration. Types of vaccines needed to prevent strategic diseases in beef cattle, including dose, timing and method of administration. Methods for measuring the health and production of beef cattle, including parameters such as body weight, growth, reproduction and meat quality. Research methods used in your article include An experimental method in which randomly assigned groups of beef cattle receive different treatments, such as the type, amount or frequency of feed and vaccines. It then measures and compares the effects of these treatments on livestock health and production. Survey method, i.e. collection of primary and secondary data from reliable sources such as breeders, veterinarians or research institutes. Data collected includes demographics, nutrition, vaccinations, diseases, husbandry and reproduction. Descriptive method, i.e. systematic and objective description of beef cattle's health status and production based on available information. Information can be obtained from direct observations, interviews or literature research.

## 3. Results

Feeding and vaccination are two crucial factors affecting beef cattle's health and production. Good nutrition must meet the need for nutrients, energy, protein, minerals and vitamins according to the cow's breed, age, weight and physiological state. Appropriate vaccinations must be carried out to prevent infectious diseases that can reduce cow meat and milk quality. Some of the nutritional and vaccination methods that can be used to improve the health and production of beef cattle include:

3.1. Choose feed that is high quality, balanced and meets the nutritional needs of beef cattle. A good diet should contain enough carbohydrates, proteins, fats, minerals, vitamins and water. Some inputs include:

- Bait feeding. Forage is the most crucial feed source for beef cattle. Forage can be grass, legumes or other forage plants that contain fibre, water and green matter. The feed can be given fresh, dried or fermented. Feeding should be at least 2-3% of the cow's weight daily.



Figure 3. 1 Forage [1]

- Nutrient concentration. Feed concentrate is a supplementary feed containing nutrient-rich ingredients such as corn, bran, oilcake or commercial feeds. Feed concentrate can improve



the growth, reproduction and production of beef cattle. Feed concentrate must be given according to the needs and possibilities of the cow, about 0.5-1% of the cow's weight per day.



Figure 3. 2 Concentrate feed [2]

- Mineral food. Mineral feed contains minerals needed by cattle, such as calcium, phosphorus, magnesium, sodium, chloride, iron, zinc, copper, cobalt, manganese, selenium and iodine. Mineral feed can be table salt, agricultural chalk, crushed bones or mineral blocks. Mineral feed must be given regularly and moderately, about 50-100 grams per animal daily.



Figure 3. 3 Mineral Feed [3]

By applying feeding and vaccination techniques adapted to the needs and conditions of beef cattle, it is hoped to optimally improve their health and production.

- Feed regularly and measurably according to beef cattle's weight, age, gut and level of productivity. Avoid over or under-feeding as this can lead to indigestion or malnutrition. To maintain the health and performance of beef cattle, you must provide feed that meets their nutritional needs. Feed must be given regularly and measured according to the weight, age, sex and level of productivity of the beef cattle. Do not eat too much or too little, which can lead to digestive problems or malnutrition. A good diet should contain a balanced amount of carbohydrates, proteins, fats, minerals and vitamins.
- Give mineral and vitamin on a regular basis, either through supplementary kourung feed. Minerals and vitamins are essential to maintain beef cattle's health, resistance and metabolism. One way to increase the productivity and quality of beef cattle is to maintain a balanced diet and meet the body's needs. Some of the nutritional components to consider are minerals and vitamins. Minerals and vitamins participate in various biochemical processes in the body of beef cattle, such as growth, reproduction, body

defence and energy regulation. Getting minerals and vitamins regularly is essential, either through food or supplements. This allows beef cattle with optimal health, immunity and metabolism to produce profitable meat for farmers.

- Vaccinate regularly to prevent infectious diseases that can reduce the health and production of beef cattle. Standard vaccinations include anthrax, ringworm, leptospirosis, blackleg and IBR. One way to maintain the health and productivity of beef cattle is through regular vaccinations. Vaccination aims to prevent infectious diseases that can hinder the growth and well-being of beef cattle. Some diseases that can be prevented by vaccination are anthrax, ringworm, leptospirosis, black rot and IBR.

Vaccination must be carried out according to the veterinarian's recommendations and the vaccine manufacturer's instructions. The quality and quantity of beef can be improved by proper vaccination.

- Anthrax vaccination. Anthrax is an infectious disease caused by the bacterium *Bacillus anthracis*, which can cause symptoms of high fever, swelling of the neck or chest, bleeding from the nose or mouth and sudden death. Anthrax vaccination must be carried out in cattle for at least six months with a dose of 1 ml per head. The anthrax vaccination must be repeated every year.
- Plague vaccination. Urticaria is an infectious disease caused by the bacterium *Brucella abortus*, which can cause abortion symptoms in women and swelling of the testicles in men. Rabies vaccination should be given to females aged 4-8 months with a dose of 2 ml per head. It is not necessary to repeat the tetanus vaccination.
- Blackfoot vaccination. Blackleg is an infectious disease caused by the bacterium *Clostridium chauvoei*, which can cause swelling of the calf or thigh muscles, high fever, rapid breathing and sudden death. Blackfoot vaccination should be given to cattle aged 3-6 months with a dose of 5 ml per head. Blackfoot vaccination must be repeated every six months.
- Follow the vaccination program and protocol the relevant department or veterinarian prescribes. Ensure the vaccine you are using has a distribution license and is properly stored. Use sterile, clean syringes to avoid contamination. To prevent the spread of dangerous animal diseases, the vaccination program and the instructions given by the relevant department or veterinarian must be followed. Do not use vaccines that have not been approved for distribution or have been improperly stored. Always use sterile, clean syringes to avoid contamination. This way you can protect the health of animals and people.



Figure 3. 4 Beef Cattle [4]

#### 4. Discussion

Appropriate feeding and vaccination techniques can improve the health and production of beef cattle to meet the increasing beef consumption needs of Indonesian people. Appropriate feeding and vaccination techniques can reduce production costs, increase efficiency and increase farmers' incomes. Appropriate nutritional and vaccination techniques can prevent and control diseases that can cause economic, social and environmental damage. Correct feeding and vaccination practices can improve the quality of healthy, nutritious and hygienic beef and thus improve human health and well-being.

#### 5. Conclusions

Correct feeding and vaccination practices can improve the health and production of beef cattle. Good nutrition must meet the nutritional, energy, protein, mineral and vitamin needs of livestock. The food consists of basic food, supplementary food, mineral food, vitamin food and drinking water. Vaccination is a preventive measure in which vaccines or antigens are administered to livestock to create specific immunity against certain diseases. Vaccinations must be administered by a veterinarian or according to a schedule determined by a veterinarian. By implementing appropriate feeding and vaccination techniques, it is hoped to improve the welfare of livestock and breeders and reduce dependence on imported beef.

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