International Journal of Agricultural Industry and Food Technology
JAIFTECH
journal homepage: https://jaiftech.sinergis.org/

Article

Management Analysis of Feeder Cattle Maintenance at PT. Juang Jaya Abdi Alam Lampung Selatan

Darul Ilham Suryadi[1], Susanti[1] , Anjar Sofiana[1]*
[1] Animal Husbandry Agribusiness Study Program, Department of Animal Husbandry, State Polytechnic of Lampung
* Correspondence: anjarsofiana@polinela.ac.id

Citation: Suryadi, D. I., Susanti, S., & Sofiana, A. (2025). Management Analysis of Feeder Cattle Maintenance at PT. Juang Jaya Abdi Alam Lampung Selatan. *International Journal of Agricultural Industry and Food Technology*, *1*(2), 77-83. https://doi.org/10.37148/jaiftech.v1i2.17.

Received: July 27, 2025
Revised: July 29, 2025
Accepted: August 01, 2025
Published: August 02, 2025

Abstract: The beef cattle livestock sector plays a strategic role in the national animal protein supply, but faces challenges in optimizing maintenance management. This study aims to analyze the feeder cattle fattening maintenance management system in PT. Juang Jaya Abdi Alam, South Lampung Regency, focuses on managing cattle arrival, feeding, barn sanitation, livestock health, and body weight gain. The research method uses a case study with a qualitative descriptive approach through direct observation and interviews. The results show that PT. Juang Jaya Abdi Alam implements an integrated and standardized management system. Cattle arrival management is conducted systematically with selection, vaccination, and adaptation procedures that consider animal welfare. Feed management uses a composition of 70% forage and 30% concentrate with scheduled feeding 3 times a day using mixer technology. The barn sanitation is carried out every 5-7 days with 50-70 kg of bedding per head and a natural ventilation system. Health management implements periodic vaccination programs, daily monitoring, and quarantine systems. Weight measurement is performed by arrival grading and grading 40 days later with ear tag identification. Implementing this integrated management effectively supports feeder cattle fattening productivity and can serve as a model to improve the efficiency of the beef cattle farming business..

Keywords: Feeder cattle; Feedlot; Livestock health; Maintenance management

1. Introduction

The livestock sector plays a strategic role in the national economy, especially in providing animal protein. The feeder cattle fattening business, known as a feedlot, is livestock farming to increase beef cattle productivity. Good maintenance management includes various aspects, from feeder maintenance, feeding, health management, to body weight gain. The success of the cattle fattening business is influenced by various interrelated factors in an integrated maintenance management system. According to Zaenal & Khairil (2022), proper maintenance management becomes an important factor in maximizing livestock productivity and farming business sustainability.

The feeder cattle fattening industry in Indonesia faces several interrelated main problems. First, management of suboptimal feeder cattle arrival, including dependence on feeder cattle imports. Second, inefficiency in feeding management, including feeding that does not meet nutritional needs and inappropriate ration formulation. Third, inadequate barn sanitation management becomes a source of disease spread and reduces livestock comfort. Fourth, suboptimal livestock health management, including inconsistent vaccination programs and routine health monitoring. Fifth, low average daily gain (ADG) impacts the length of the fattening period and high production costs per kilogram of body weight gain.

Good management of feeder cattle arrival requires implementation of standard procedures for the selection, quarantine, and adaptation of new feeder cattle, including

gradual feeding adjustment programs and intensive health monitoring during the adaptation period. Intensive systems (confined in barns) have proven effective in increasing cattle body weight gain. According to Santi et al. (2021), this intensive system can increase body weight growth.

The results of this analysis are expected to identify best practices in the five critical management aspects that other farmers can adopt to increase productivity and efficiency of the feeder cattle fattening business in Indonesia.

2. Materials and Methods

This research was conducted at PT. Juang Jaya Abdi Alam is located in Sidomulyo District, South Lampung Regency, Lampung Province. Research implementation took place from May to July 2025. Materials used in this research include feeder cattle and previous research literature. Data collection was carried out through three complementary main methods: direct observation, in-depth interviews, and documentation study. Data collection focused on five main components of the maintenance management system: cattle arrival management, feed management, barn cleanliness management, health management, and average daily gain measurement.

3. Results and Discussion

3.1. Cattle Arrival Management

Feeder cattle reception operations at PT. Juang Jaya Abdi Alam was conducted monthly via sea route. The company team conducted initial checking of cattle conditions inside the ship before unloading to ensure they did not carry diseases or pathogens that endanger the health of other livestock (Setiawan, 2023). Initial selection was performed by veterinarians based on physical characteristics and genetic potential using livestock industry standards.

The unloading process was conducted systematically, with infrastructure preparation that included anti-slip stairs and safety fences. Cattle were herded using low-stress handling techniques with guide sticks without causing excessive stress. These methods aligned with animal welfare principles (Komala, 2024). The team conducted systematic documentation of cattle condition by recording the number of cattle per truck and capturing images upon cattle loading.

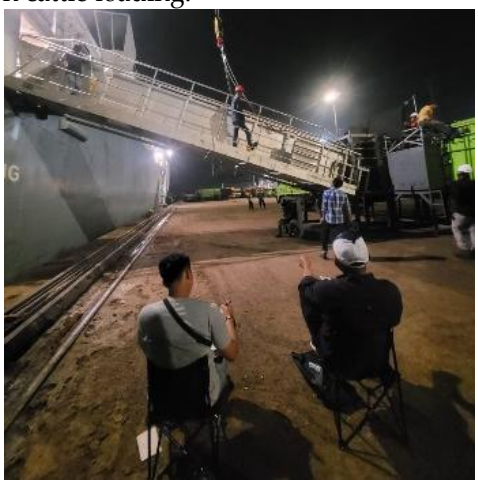

Figure 1. Systematic cattle unloading process from a marine livestock carrier onto a loading truck. Safety anti-slip stairs and safety fences facilitated the process of unloading under the stressful conditions of the arriving cattle

Upon arrival at PT. Juang Jaya Abdi Alam, loading trucks went through steam cleaning and a dipping pool aimed for vehicle disinfection to prevent the entry of

diseases from external potential infecting sources (Lestari et al., 2020). The process continued to the weighing area using digital scales to obtain an accurate initial weight. The data were systematically recorded and documented by PT Juang Jaya Abdi Alam. Subsequently, cattle were herded through the gangway in the cattle area. These steps were aimed at administering FMD (Foot and Mouth Disease) and LSD (Lumpy Skin Disease) vaccinations as a part of a contagious disease prevention program (Anwar et al., 2023).

Figure 2. Vaccination against Foot and Mouth Disease (FMD) and Lumpy Skin Disease (LSD) was safely conducted in secure pens, adhering to the principles of animal health standards.

3.2. Feed Management

PT. Juang Jaya Abdi Alam implemented feed management by considering aspects that affect livestock productivity. The feed provided must meet the requirements of quality feed containing adequate nutrients such as energy, protein, fat, minerals, and vitamins (Amam et al., 2021). The company used two main feed components: forage, as the basic feed from grass groups, and concentrate, as supplementary feed from grains and industrial waste to enhance nutritional value.

The feeding system differed from traditional farmers, focusing on efficiency and quality consistency. To facilitate a period of relaxation, feed was offered to cattle once they were settled in their pens, with electrolytes simultaneously provided in drinking troughs. During the adaptation period, feed composition consists of 70% forage and 30% concentrate, adjusted to the cattle's eating patterns from their place of origin (Fajarwati, 2025).

Figure 3. Regular feed provision was implemented to maintain an adequate amount of water and nutrition, promoting cattle's proper growth in the barn.

Cattle received feed following a regular schedule 3 times daily (morning, noon, afternoon) according to their specific nutritional needs at various fattening stages. Additional feed supplementation was provided at night when necessary. Feed mixing

uses large-capacity mixers to improve distribution effectiveness throughout the pens, while reducing the number of workers involved (Atmoko et al., 2020).

3.3. Pen Sanitation Management

PT. Juang Jaya Abdi Alam implemented a structured barn sanitation as part of barn preparation management. The company performed sanitation routines every five days, supplying 50 kg of bedding for each animal to ensure livestock comfort on hard floor surfaces (Zuroida, 2018). There were two bedding options implemented: 50 kg per head every 5 days or 70 kg per head every 7 days, with the second option applied during rain to address bedding moisture.

Figure 4. Barn bedding for maintaining cattle's comfort while standing and performing activities on a hard floor.

PT. Juang Jaya Abdi implemented sustainable integrated waste management, with liquid waste processed into clean water and solid waste converted into organic fertilizer that is sold commercially. The integrated drainage system created a healthy environment for feeder cattle, consistent with Pratama (2024), who found that drainage effectively channels manure to collection points to prevent accumulation in barns.

The barn preparation SOP was a systematic protocol to ensure ideal barn conditions before the arrival of feeder cattle. It included thorough cleaning, integrated drainage, disinfectant spraying as biosecurity, infrastructure inspection, and a minimum 2-day empty barn period for disinfection effectiveness, according to Juariyah (2013), who states that barn rest periods break the chain of disease pathogens.

3.4. Livestock Health Management

PT. Juang Jaya Abdi Alam implemented a comprehensive livestock health management system to ensure optimal health of feeder cattle during fattening. This system focused on disease prevention through regular vaccination by the company's veterinarian. Wulandari (2024) states that vaccination is the most effective way to perfect biosecurity.

Routine cleaning and disinfection were applied to reduce the risk of infectious diseases and minimize outbreaks. This stage was important because cattle diseases were generally caused by poor health management that allowed viruses to develop. Nuraini (2020) mentioned that disinfectants were very effective at killing microbes that contaminate barns. Sick livestock handling procedures were designed to be systematic and responsive. Sick cattle were reported immediately for follow-up action, isolated from the group, and received intensive care through diagnosis and veterinary treatment. Abscess cases were handled with incision to drain pus, following surgical or drainage methods according to Aulyani (2024).

Figure 5. Treatment of sick cattle as part of livestock health management in PT Juang Jaya Abdi Alam.

Evaluation of health system effectiveness was conducted through periodic data collection and analysis. Ahmadun (2024) reported that evaluation is an examination of program implementation to describe, calculate, and control future programs. Health levels were assessed based on disease records, treatment frequency, and mortality rates. Health data was collected through daily documentation by staff and verified by the responsible veterinarian. This integrated health management approach has proven effective in maintaining the health of feeder cattle at PT. Juang Jaya Abdi Alam.

3.5. Body Weight Gain

PT. Juang Jaya Abdi Alam implemented a standardized body weight measurement system for feeder cattle to ensure fattening effectiveness. Weight gain occurs when livestock convert nutrients into fat and meat after basic needs are met (Wawan, 2015). Weighing was conducted upon arrival (grading one) and 40 days later (grading two) using industrial digital scales. Recording based on ear tag identification enables individual and group growth analysis, requiring a structured and accurate recording system (Rahman & Widyanto, 2021).

Figure 6. Regular cattle weight measurement was performed using a cattle weight scale to inspect the effectiveness of the fattening program in PT Juang Jaya Abdi Alam.

Amam et al. (2021) demonstrated that the maximum ADG (Average Daily Gain) of imported Brahman Cross heifers at arrival weights of 200, 300, and 400 kg is 2.01, 1.81, and 1.45 kg, respectively, with averages of 1.40, 1.17, and 1.10 kg. The company used similar parameters for performance evaluation. The current results showed ADG of steers at 1-2 kg/day, while heifers achieve 1.4-1.7 kg/day. Brahman Cross steers have higher ADG compared to heifers.

Management factors determine overall fattening success. Good cattle growth requires management systems suited to their needs (Aisah, 2022). PT. Juang Jaya Abdi Alam implements standardized technical management systems. The integration of

optimal feed management and standardized technical management creates synergy to achieve ADG targets in feeder cattle fattening programs.

4. Conclusions

Based on research results at PT Juang Jaya Abdi Alam, the company has successfully implemented an integrated feeder cattle management system covering five main aspects. First, cattle arrival management was implemented with strict biosecurity protocols, veterinary health selection, and identification using ear tags. Second, feed management applies an optimal composition of 70% forage and 30% concentrate with three daily feedings plus extra feeding using large-capacity mixers. Third, barn sanitation was conducted every 5-7 days with gradual cleaning using heavy equipment and manual methods, disinfectant spraying with drones and steam, and integrated waste management that produces clean water and organic fertilizer for economic added value and environmental sustainability. Fourth, optimal health management through FMD and LSD vaccination programs, strict quarantine systems, and veterinary teams to prevent and treat NE, Abscess, and Diarrhea diseases. Fifth, a body weight monitoring system using digital scales every 40 days with ear tag recording, ADWG calculation, and feed conversion efficiency analysis to optimize fattening strategies to achieve efficient growth targets. Overall, this integrated management system successfully addresses the challenges of the feeder cattle fattening industry.

References

Ahmadun, S., Herdiansah, R., Suhadi, M., & Asek, A. (2024). Evaluation Of Beef Cow Maintenance Management In The Group Bumi Asih SejahteraLivestock Farming, Tanjung Sari District South Lampung District. JASIn: Jurnal Inovasi Ilmu Terapan, 1(1), 1-8. https://isn-jurnal.my.id/index.php/JASIn/index

Aisah, & Haris, M. I. (2022). The Influence of Maintenance Management on the Acceptance of People's Beef Cattle Farms in West Kutai. Jurnal Peternakan Lingkungan Tropis 3(2), 58-63.

Amam, & Haryono. 2021. Average daily gain of Brahman Cross beef cattle imported for heifers and steer type at different arrival weights. Jurnal Ilmu Peternakan Terapan 4 (2) 104-109. https://doi.org/10.25047/jipt.v4i2.2357

Anwar, P., Jiyanto, Mahrani, Yoshi, L. A., Infitria, & Imelda, S. 2023. Implementation of the Foot and Mouth Disease (FMD) Vaccination Program in Sikakak Village for the Achievement of Community-Based Beef Cattle Development. Bhakti Nagori Jurnal Pengabdian kepada Masyarakat, 3(1), 65-73.

Atmoko, N. T., Jamaldi, A., Suhartoyo, & Yulianto, K. Y. (n.d.). 2020. Design and Construction of a Cattle Feed Mixer Machine for Improving the Welfare of SMEs Sumber Rejeki in Karanganyar Regency. Prosiding Seminar Nasional Unimus 3 (2020)

Aulyani, A. (2024). Management of Abscess Disease in Beef Cattle at BPTU-HPT Padang Mengatas, Lima Puluh Kota Regency, West Sumatra. Student Thesis. Jambi: Universitas Jambi.

Fajarwati, A. B., Budiarto, T., & Nurulhaq, M. I. (2025). Feed Management for Beef Cattle at the Lembang Artificial Insemination Center, West Bandung Regency. JIPENA: Jurnal Ilmu Peternakan Indonesia, 2(2), 7-12.

Juariah, E. (2013). Fundamentals of Animal Husbandry: Textbook for Vocational High School Students in Agribusiness and Agrotechnology, Animal Health Program, Class X, Semester 1. Center for the Development and Empowerment of Agricultural Educators and Education Personnel, Ministry of Education and Culture.

Komala, I., Setiawan, A., Yumita, Mubarrok, M. T., Aufa, M. N., & Gampur, Y. B. (2024). Evaluation of Animal Welfare Dairy Cattle at Mandiri Sejahtera Cijeruk Livestock Group Using Analytical Hierarchy Process. Jurnal Sains Dan Teknologi Peternakan, 5(2), 81-92.

Lestari V., Sirajuddin S., Saleh I. & Indah K. (2020). Behaviour of Beef Cattle Farmers toward Biosecurity Practices. Prosiding Seminar Nasional Teknologi Peternakan dan Veteriner, 263-71. http://dx.doi.org/10.14334/Pros.Semnas. TPV-2019-p.251-259

Nuraini, D. M., Sunarto, Widyas, N., Pramono, A., & Prastowo, S. 2020. Capacity Building for Beef Cattle Health Management in Pelemrejo, Andong, Boyolali. PRIMA: Journal of Community Empowering and Services, 4(2), 102-108. https://doi.org/10.20961/prima.v4i2.42574

Pratama, S. M., Izzati, R., & Rizal, M. (n.d.). 2024. Evaluation of Beef Cattle Housing Management in Community Farms in Matang Kuli District, North Aceh Regency. Jurnal Ilmiah Peternakan 12(1):244-252

Rahman, A., & Widyanto, E. P. (2021). Implementation of NFC Tags as Android-Based Cattle ID for Recording Beef Cattle Growth Data. Prosiding SNAST, 146-152.

Santi, S. S., Sabil, S., Sohrah, S., & Rusman, R. F. Y. 2021. Management of Bali Cattle Rearing for Fattening. Jurnal Peternakan Lokal, 3.1, 17-22.

Setiawan, F. 2023. Management Procedures for the Arrival of New Cattle at PT. Great Giant Livestock, Central Lampung Regency. [Student Thesis]. Lampung: Politeknik Negeri Lampung.

Parker, A. J., Hamlin, G. P., Coleman, C. J., & Fitzpatrick, L. A. (2003). Dehydration in stressed ruminants may be the result of a cortisol-induced diuresis. Journal of Animal Science, 81, 512-519.

Wawan. 2015. The Effect of Brewer's Spent Grains Supplementation on Beef Cattle Weight Gain. Jurnal Agrorektan, 2(2), 136.

Wulandari, A. A. 2024. Bilateral Cooperation Between Indonesia and Australia on the Management of Foot and Mouth Disease (FMD) and Lumpy Skin Disease (LSD) Outbreaks in 2022-2024 (Bio-security) [Student Thesis]. Sorong: Universitas Pendidikan Muhammadiyah Sorong.

Zaenal, H. M., & Khairil, M. 2020. Barn Management System for Bali Cattle Farming at CV Enhal Farm. Jurnal Peternakan Lokal, 2.1, 15-19.

Zuroida, R., & Azizah, R. 2018. Cages Sanitation and Health Complaints Among Dairy Farmers in Murukan Village, Jombang. Jurnal Kesehatan Lingkungan 10 (4) Oktober 2018: 434-440