

A study on performance of artificial insemination and occurrence of diseases in livestock species in Kalutara district

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1. Introduction

Since independence, much investment has been rolled in the Livestock sector to improve productivity of the Livestock sector as it plays an important role in the agrarian economy of Sri Lanka. It produces animal products to meet a part of the domestic consumption demand and provides income for well over half a million rural smallholder farmers. However, still the animal food production has not reached a satisfactory level in the country due to various reasons, including poor genetic upgrading, poor nutrition and high disease outbreaks. The poor performance of the genetic upgrading process of livestock species has led the poor productivity in the majority of livestock species, and it has resulted in the stagnant milk loss production in the past few years in the country. Improvement of the productivity of the livestock species can be achieved by upgrading them by cross breeding with superior sire using Artificial Insemination (AI). Disease outbreaks in livestock species cause severe losses to the farmer due to high mortality rates, poor growth of animals and low productivity. Some diseases are zoonotic, and thus, there is a menace to the public health causing additional expense in the health sector in Sri Lanka. Therefore, it is timely worth to study the present status of the AI and prevalence of common diseases in different livestock species in the country.

Kalutara district belongs to the wet zone in Sri Lanka and the land extent is about 159,800 ha. The farm animal population of Kalutara district is approximately 13,890, 7440, 5320, 9420 and 2,339,985 cattle, swine, goat, buffalo and poultry respectively (Annual report, DAPH, 2020). The total milk production in the district was reported as 13,749 litres in 2019. It is required to take possible measures to improve these livestock production capacities further in order to achieve the targets of being self-sufficient in livestock products. In order to increase the livestock production in an area, the productivity of animals has to be enhanced. Diseases in livestock species are considered one of the major constraints on the low productivity of animals. Therefore, accurate awareness on the disease surveillance among livestock species is an area of utmost importance in planning and implementing livestock development programs in the area. A range of Livestock disease outbreaks has been reported from Kalutara district in the western province during the past few years. Data on these outbreaks have been collected by individual government veterinary offices in the district, but there was no proper scientific evaluation and publications on these data. Hence, this study was conducted to appraise the present status and performance in AI and disease occurrences in cattle, goat, swine, buffalo and poultry in Kalutara district.

2. Materials and Methods

The survey was conducted using secondary data available in Government veterinary offices in Mathugama, Baduraliya, Bandaragama, Panadura, Bulathsinhala, Horana, and Kalutara in Kalutara district between July to September in 2021. Data were collected on the number of AIs performed in different livestock species, the success rate of AIs, major constraints faced by livestock farmers, common diseases in cattle, swine, goat, buffalo and poultry, frequency of

occurrence of disease outbreaks, common predisposing factors and control measures taken by authorities and assessed. Collected data were analyzed using Excel work sheets.

3. Results and Discussion

The study revealed that the artificial insemination is practiced throughout the district in different capacities with variable success rates. The total number of AIs done in cattle within the 7 studied veterinary ranges (VS ranges) out of 11 in the district was 2510 and the total number of AIs done in buffaloes was 233. The number of AIs done in goat and swine in the studied ranges was 99 and 3 respectively. The success rate of AI s in cattle was 60%, whereas it was reported as 56.7%, 62.5% and 68% in buffalo, goat and swine respectively. The major constraints related to AIs in the district were recorded as management problems and the incorrect detection of heat. Among the studied VS ranges in the district, Horana VS range recorded the highest AI performance while it was the lowest in Mathugama VS range. Table 1 shows the number of AIs performed in each of the veterinary range.

Table 01. The number of AIs performed in each of the veterinary range in Kalutara district

Veterinary Range	No. of AIs performed			
	Cattle	Buffalo	Goat	Swine
Mathugama	141	9	9	-
Baduraliya	211	14	12	-
Bandaragama	436	40	25	-
Panadura	229	6	21	-
Horana	1050	117	10	-
Kaluthara	335	25	6	-
Bulathsinhala	441	21	16	3
Total	2843	232	99	3

The study revealed that the predominant cattle breeds available in the district were Girilando and Jersey × Sahiwal crosses. It was found that many contagious diseases are commonly found among livestock species in Kaluthara district. The most common diseases of cattle were Mastitis, Milk fever, Babesiosis, Ephemeral fever, Coccidiosis, Internal and External parasites and Lumpy skin disease. It was found that calves had been affected by calf diarrhea, Naval ill and Pneumonia. Prominent swine diseases in the district were Pneumonia, Internal parasites, Enteritis, Mastitis and Foot and Mouth disease. Piglet anaemia was the most prevalent condition among piglets. It was noticed that coccidiosis was the most common infectious disease among poultry, including both broilers and layers. Other common disease conditions were Fowl pox, Ranikhet, Infectious bursal disease and Internal parasites. The major disease conditions in goat in the district were Cerebrospinal Nematodiasis and Contagious Pustular Dermatitis, whereas mastitis and Lumpy skin disease are also found among the buffaloes. It was found from the study that poor management practices such as improper hygienic measures, under nutrition of animals and overcrowded housing and incomplete vaccinations are the common predisposing factors for disease outbreaks. The other predominant problems faced by livestock farmers in the district were lack of quality feeds and extension services. The disease outbreaks have been successfully controlled by following proper guidelines to improve hygiene, biosecurity and management aspects in all farms.

4. Conclusions

Artificial insemination process is conducted in Kaluthara district with a satisfactory success rate, but there are practical issues to be addressed immediately in order to improve the AI success. Occurrence of infectious diseases are common among livestock species in Kaluthara district and the major causes for disease outbreaks in cattle, swine, goat, poultry and buffalo in the district were related to poor management practices. The performance of the livestock sector in the district has been characterized by numerous practical obstacles faced by livestock farmers and immediate attention should be paid to mitigate those issues. The present situation could be improved to a much satisfactory level by increasing the farmer awareness and improve health management aspects. Therefore, an extensive farmer awareness programme based on proper housing management, farm hygiene and disease control measures including biosecurity is highly recommended.

5. References

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