



Effect on Yields of Foot Diseases in Sheep and Cattle Breeding

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Abstract

One of the major problems in cattle and sheep farms is lameness that influences animal welfare and causes serious economic loss. Lameness syndrome is a painful process in which decrease in milk yield and fertility that results in early removal of animals from herd is observed. Recent researches have revealed that effects of foot diseases on economic values are very important. Although mortality rate of foot diseases is low, its damage on local and national economy cannot be ignored. Both production losses and vaccination costs can reach up to 6.5-21 billion dollars annual in countries with foot disease issues but in countries that eradicated from foot diseases, it is estimated 1.5 billion dollars.

Consequently, maximum measures should be taken for decrease the economic effects of foot diseases and prevention of the disease.

Keywords: Food disease, fertility, economic losses, farm animals

INTRODUCTION

One of major problems in cattle and sheep farms is lameness that effects animal welfare and causes serious economic loss. Lameness syndrome is a painful process and in this process milk yield and fertility decrease is observed that causes early removal of animals from herd.

There are lots of factors cause foot diseases. Major factors are genetic (long feet, scissor toes, corkscrew toes, knock kneed, bow legged, cow hocked, post legged, sickle hocked), climate/ambient temperature, barn conditions, nutrition, injuries and infections. Although one of these factors can cause foot diseases, mostly several factors in combination cause diseases. Genetic extremity abnormalities and foot disorders are effective in formation of foot diseases. In some cattle breeds there is genetic predisposition for some foot diseases [1, 2, 3].

Main foot diseases are solea diseases (solea ulcer, heel horn erosion), interdigital dermatitis (footrot), joint effusions, tendon injuries. Laminitis is seen as symptom of foot and mouth disease and mucosal disease in addition to limax, foot scald, infected oil gland [4, 5, 6, 7].

As foot diseases are very painful, animals can't use their extremities correctly. For that reason, lameness, swelling, inflammation and fever may be observed. Suffering animals don't want to eat and they look like restless and distressed. Because of these reasons, milk yield loss, fertility decrease and abortions will be shaped.

Balanced nutrition and organized feeding are most important factors to prevent from food diseases. Acidosis therefore laminitis will be revealed in dairy cows, especially in beginning of their lactation period, fed high ratio concentrated feed and low roughage ratio. Additionally, laminitis can be seen due to foot and mouth disease. Paddocks need to be purge from small and big stones. Concrete floor has to be as rough as possible and grooved as to prevent slipping. Care should be taken to keep the barn ground dry. Wet grounds increase microorganism's activity and slipperiness. Copper sulfate or creolin should be used every day before or after milking. Foot care should be done at least twice a year and all cows' feet should be check

before drying off. Foot growth achieves at maximum levels especially in spring and in this period being careful increases success about foot health. In addition to all these, genetically vulnerable animals to foot diseases should be removed from the herd and stud.

Although fighting with diseases is important, to prevent the spread of disease is more important and economic. For that reason both controlling animal movements in country and controlling passage of animal from borders are crucial for the spread of disease [8].

Losses can be directly or indirectly. Direct losses; these are visible losses (milk yield decrease, condition loss, weight loss and deaths) and invisible losses (fertility problems, changings in herd structure and delay of products that are produced in the farm.). Indirect losses; additional expenses (vaccines and its application, animal movement control, tests used for diagnosis and collection of ill animals) and unavoidable abnormalities of income (usage of low yielding animals and to be accepted of that animals to the market) [9, 10].

Last researches are revealed that effects of foot diseases on economic values are very important. Although mortality rate of foot diseases is not very high, its damage on local and national economy cannot be ignored. Both production losses and vaccination costs can reach up to 6.5-21 billion dollars annual in countries has foot disease issues but in countries that eradicated from foot diseases, it is estimated 1.5 billion dollars [11].

Economic losses are mostly observed in underdeveloped countries and developing countries [12] (Figure 2). Thompson pointed out that in England 3.1-billion-pound sterling losses occurred in farming, food and tourism industries in 2001 because of foot diseases [13]. It is reported in a research conducted in Cambodia that animal value fell by %54-92 in period of foot disease outbreak and that caused burden around %4.4-11.7 to public purse [14]. Rast at al. [15] identified animal value decrease around %22-30 in their research. It is reported in a research conducted in Sudan the majority of population daily per capita below 1 dollar that annual loss for each cow is 25 dollars [16]. This situation is a

very good example for the relationship between foot disease and level of development.

Taş at al. [17] reported that milk yield of animals caught in the foot disease seriously decreases and also composition of milk changes. Also affected animals can't achieve past performance even if they are treated, so it is noticeable that prevention of diseases is very important. It has been reported in a study conducted in Pakistan that when 60-day milk production period compared before the foot disease %30 milk yield decrease was observed in a farm has foot disease issues [18].

In prevention of foot disease, record keeping and monitoring is very important. Abubakar at al. [19] claim that record keeping and monitoring are very important element to be successful in immunity studies of foot diseases. Vaccination is also important in foot diseases. It is reported that good immunity has been obtained in buffaloes when especially Foot Mouth Disease (FDM) vaccine with oily adjuvantused [20].

Conclusion and Suggestions

- Immediate treatment for animals suffered from foot diseases is important.

- Environment and genetic factors effect disease should be determined then their amount of influences should be calculated. Planning should be done by taking into account these factors.

- Prone animals must be separated from herd.

- Legal regulations for preventing disease formation and disease spread should be done.

- All personnel related to animal husbandry should be educated.

- Footbath with antiseptics should be done to the entrance of barn.

Consequently, maximum measures should be taken for decrease the economic effects of foot diseases and prevention of the disease.

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Figure 1: FootwithLaminitis

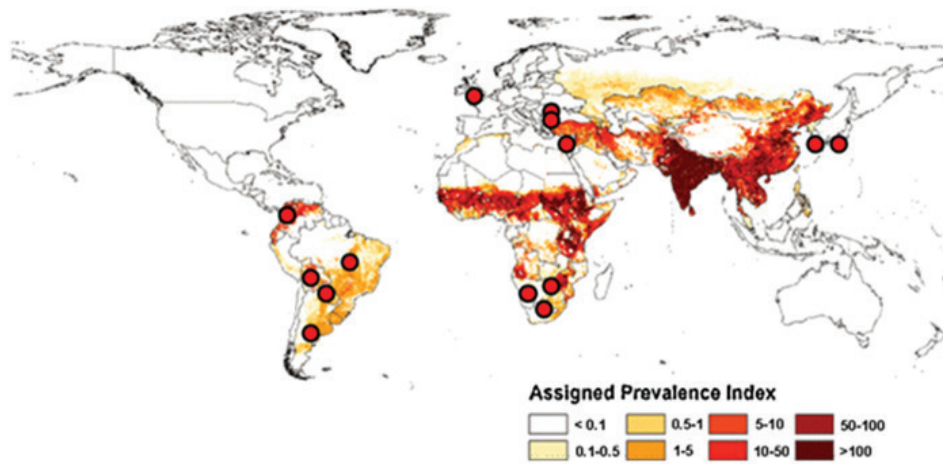


Figure 2: Map of Foot Diseases prevalence in all over the world (2013) [8]