

MORBIDITY INCIDENCE IN A CATTLE FARM EXPLOITED IN STABULATION CONDITIONS

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Abstract

This paper describes the health status of a herd of 480 dairy cattle from a private farm from Botosani County for a period of three years (2005-2007). The exploitation system of cattle was the one of loose housing with individual spaces of rest. There were presented the morbidity share (proportion), disease categories (gynaecological and obstetrical diseases, medical maladies, ruminal-reticular indigestions, leg anomalies, surgical problems) that affected the animals within the farm during this period, the incidences of these diseases, as well as the causes of their occurrence (some hygienic weaknesses in shelters and some imperfections of animal feed), all these issues being interpreted in ecopathogenic context (hereditary predisposition of animals, environment and technological factors). There were indicated some prophylactic measures that must be promoted in this farm.

Keywords: cattle, bovine pathology, animal welfare

INTRODUCTION

Cattle have a social, economical, health, environmental and ecological importance of the first order in the economies of many countries (Reijs et al., 2013). An issue of great importance for increasing the productivity of cattle is the application of appropriate selection and breeding technologies to ensure optimal conditions to animals for their feeding, care, maintenance and reproduction to avoid the losses through illnesses and mortalities. All these aspects relating to animal husbandry are incorporated in a current enough concept designated *animal welfare*. Considering this value judgment, the human welfare depends, in the greatest extent, of animal welfare. Welfare concept still lacks a precise definition, but all the experts who have studied the animal welfare agree that this notion includes health, production comfort and protection of animals (Orășanu et al., 2011).

Failure to ensure the animal welfare conditions to a conflict among the metabolic characteristics of animal body and its existential environment which means the triggering of some diseases from entire

pathological spectrum, the morbid entity type being depending on the nature of this conflict (Paraschivescu et al., 2011).

Another tricky issue is that the grazing has long been a traditional practice in cattle. Current trends in the bovine sector have led to a decline in cattle feeding by grazing. As a result, this agricultural activity was focused increasingly on cattle breeding in stabulation system which modified (if not downright altered), in some extent, the relationship between the animal body and its environmental conditions (Ioniță et al., 2011; Reijs et al., 2013).

Consequently, the objective of this study is to manage the health status in a cattle farm reared in stabulation conditions and to evaluate the influence of some factors in this microclimate by their exteriorization in various morbid entities.

MATERIALS AND METHODS

Researches were performed in a private farm of cattle breeding for milk production, called SC PrisLact S.R.L. of Botosani County, during 2005-2007, on a herd of dairy cows composed of 330 individuals of Holstein breed and 150 animals of Romanian Black Spotted breed. The

breeding system of the animals was the intensive one, of loose housing type with individual rest spaces for Holstein cows, and for those of Romanian Black Spotted breed the system was a mixed one (loose housing and grazing in fenced plots); conditions of feeding, housing and zoo-veterinary treatments of animals were ensured.

Health status of the animals and its evolution was monitored. The diseases that have affected some animals were diagnosed by procedures of veterinary medicine and were monitored from clinical and paraclinical point of view.

RESULTS AND DISCUSSIONS

The health of the cattle was monitored for three years. During this time interval, 81 animals were affected by different diseases, representing 16.87% of the overall population. 399 cows (83.13%) did not suffer from any disease (fig. 1).

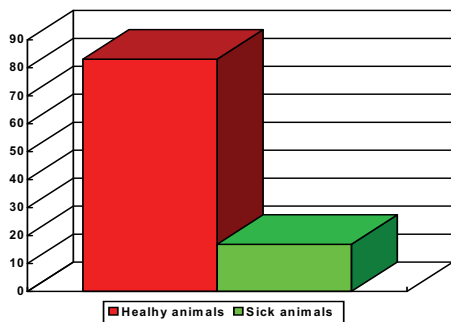


Figure 1. Health status from a private cattle farm

In order for the research results to be as accurate we recorded in the register of consultations and treatments all pathological disorders classified into five categories of diseases:

- *gynaecological and obstetrical diseases* (genital infections, dystocia, uterine prolapse, genital tumours);
- *medical maladies* (disturbances of metabolic profile);
- *ruminal-reticular indigestions* (simple biochemical indigestions, acute ruminal meteorism, ruminal acidosis, traumatic reticular peritonitis, indigestions by the sudden change of forage ration, indigestions by overloading the rumen, reticular ruminal pareses);
- *leg anomalies* (pododermatitis, lamina);

- *surgical problems* (traumatism related to stabulation system, caesareans).

Thus, in the overall population of dairy cows studied, the highest incidence of illnesses is represented by gynaecological and obstetrical diseases (5%). The disease group of a medical nature (4.37%) is situated immediately on the second place concerning the morbidity frequency. The leg anomalies are less common (2.5%) and the surgical problems (1.67%) record the lowest frequency in population. The ruminal-reticular indigestions (3.33%) occupy a median position in the clinical panel of animals (fig. 2).

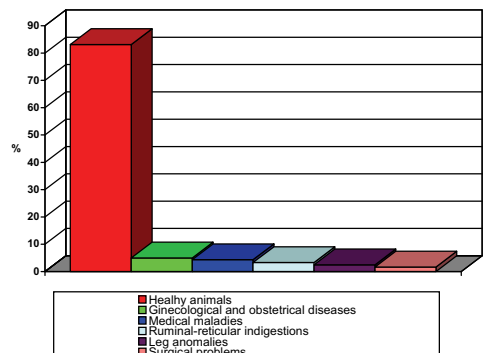


Figure 2. Incidences of morbid entities per total cattle population

By doing a strict reporting only to the group of animals that have suffered by various illnesses in this period, the clinical panel of morbid entities shows as follows: gynaecological and obstetrical sicknesses 29.63%, metabolic disorders 25.93%, ruminal-reticular ailments 19.75%, leg troubles 14.82% and surgical ailments 9.87% (fig. 3).

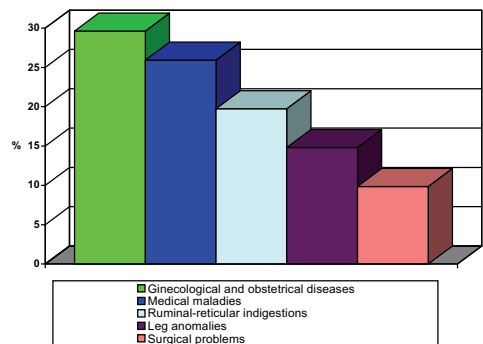


Figure 3. Incidences of morbid entities per total ill cattle

The high incidence of gynaecology and obstetrics affections is closely related to the puerperal period. This period is characterized, in terms of metabolic profile, as a state of maximum physiological strain, when the animal body is sensitive to even action of the lowest stressful factors, leading to various clinical metabolic dysfunctions. On the other hand, also the ruminal-reticular indigestions within the general morbidity represent an important factor in the aetiology of the other disorders that are specific to maximum metabolic strain after calving, such as the medical diseases, but especially the various puerperal disorders of gynaecology and obstetrics, like genital infections, foetal annex retention and ovarianopathies. These maladies had the highest incidences in this period and they can, in their turn, to constitute a trigger factor of the ruminal-reticular indigestions. Also the existence of other medical conditions can often lead to simple biochemical reticular indigestion, ruminal acidosis, ruminal-reticular paresis and ruminal alkalosis.

The investigations carried out revealed that the improvement of animal health and consequently of human health, like the first consumer of products derived from animals, requires multiple concomitant demarches, including of course, the study of animals and their functions, but just as well a better understanding of the environment in which animals live, both as separate individuals and industrial holdings.

Health surveillance of cattle requires the implementation of some measures such as hygiene shelters, correct management, efficient ventilation, efficient programs of deworming and vaccination, stress decreasing, all being corroborated with an adequate diet of feeding. These actions must be implemented according to the specific physiological statuses of animals: weaning, calving, beginning and at the peak of lactation etc. Also, the animal diet should be adjusted according to their maintenance status.

Knowing and determination of the environmental risk factors have a great importance and represent perhaps the most valuable activity in promoting and maintaining the health of animals and human, environment being able to influence the animal health by:

- physical factors (climate, air, water, soil, noise, pollution, radiation);
- biological factors (food, microorganisms, nutritional and microbiological quality of feedingstuffs);
- socio-behavioral factors (stress).

In this context, a new concept called *ecopathology* has emerged representing the living field of the healthy body in environmental and technological conditions consistent with its metabolic needs (Bacic et al., 2006; Ioniță et al., 2011).

Therefore, our intention is to continue and deepen these studies. We take into account, primarily, to estimate the share of each morbid entity within the large disease groups; for example the percentage distribution of simple biochemical indigestions, acute ruminal meteorism, ruminal acidosis, traumatic reticular peritonitis, indigestions by the sudden change of forage ration, indigestions by overloading the rumen, reticular ruminal pareses, framed in the morbidity ailment group generically called the ruminal-reticular indigestions. Also, the dynamics of these diseases would be not devoid of interest (as distinct entities or as malady groups) over time, their annual (years 2005, 2006, 2007) and seasonal (winter, spring, summer, autumn) evolution. All these investigations will take into account the compatibility of animal body metabolism with the exploitation conditions of farm animals.

Discerning as accurate as possible and complete the factors that can harm the health of animals (lactating cows in our case) is one of major terms of preventing and combating their diseases.

CONCLUSIONS

The morbidity frequency in a private farm of dairy cows reared in stabulation conditions during three years is moderate.

The cattle herd was affected in the highest degree by gynaecological and obstetrical diseases and then by metabolic dysfunctions; the ruminal-reticular indigestions occupied a median position in the clinical panel; the surgical sicknesses and especially the leg ailments recorded the lowest frequencies.

The occurrence of morbid entities in the cattle farm is caused by some hygienic deficiencies in

shelters and feeding imperfections of animals. The causes of morbidity in cattle studied must be considered in a multifactorial manner by association of genetic factors (predisposition to certain diseases) with environmental and technological factors (in particular the stabulation conditions).

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