Mortality of young animals – the scale of the problem

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ABSTRACT

The mortality and morbidity of young production animals causes serious economic losses. This concerns both the developing countries as well as countries leading in modern animal production. The early postnatal period and weaning period are the most risky phases during the entire production process.

KEY WORKS: young animals, mortality

The mortality of young animals has an important effect on farm economy. Dardillat and Vallet (1984) have estimated the mortality of calves in France at about 10% during the first month post-partum. A quick calculation allows the losses linked to this figure to be calculated. In France, about 4 millions dairy calves and 3.7 millions beef calves are born each year. A reasonable estimation of the cost of each type of calf is 200 US $ for the former and 500 US $ for the latter (Fougères market, 1998). By using the above mentioned mortality rate of 10%, the overall loss is estimted as 265 millions US $. The death of a calf is often the result of human negligence, perhaps of inattention can lasting only a few minutes. This cost of 200 US $ represent the equivalent of the revenue of 600L of milk, and therefore near 10% of the annual production of a good dairy cow. This quantity of milk is important and could only compensate the loss of a calf at the expense of considerable effort and not-negligible supplementary costs. For the beef calf, this comparison is not necessary because beef cow production is judged by the number of calves produced. When a calf dies, the farmer has to maintain the cow for a year during which it is unproductive. This loss can be considerable.

Berthelon and Calavas (1987) conducted an economo-patholological survey of 92 sheep farms, in which they recorded a mortality rate of 10%. A figure almost identical, 9.7%, was reported by Green and Morgan (1993) in observations collected from well-run English farms. Therefore, using an estimated value of 60 US $ (Berthelon and Calavas, 1987) for a new-born lamb, an overall loss of 50 million US $ can be calculated in French rearing conditions. For goats, Morand-Fehr et al. (1982) the calculated the average mortality rate to be 12% before weaning in eight well-run experimental herds. For horses, French losses average 12% during early life, with a maximum of 17% for work-horse foals, born in extensive conditions, and 8% for thoroughbred foals, born in optimal conditions (Chavatte, INA-PG, personal communication).

Lastly, a survey conducted in 53 farms showed that the pig mortality rate averaged 19.2% from birth to weaning (Quéméré et al., 1993) while technico--economic analyses performed by the Institut Technique du Porc (ITP), using results from 1994, established a mean rate of 17.6% (Dagorn, ITP, personal communication). By taking into account related figures, a conservative estimate of financial loss gives a figure of 200 million US $/year.

After adding all the calculated figures for bovine, ovine and porcine species, without taking into account large mammals of minor economic importance, losses amounted to 500 million US $. For numerous authors a 50% decrease in losses seems a reasonable goal to aim for. A figure of 100% is however totally unrealistic. The death of young animals, even when every effort is made to save them, will always be part of the landscape of animal breeding.

These losses are not of course limited to France but are universal. Only a few figures are available. Wikse et al. (1994) and Zaugg (1994) accept an average mortality rate of 10% for all American calves (USA). Between 1978 and 1985, Weller and Gianola (1989) recorded, in 100,000 Holstein Israeli heifers, a loss of 7.66% between 0 and 48 h after parturition. This figure is very close to the 7.8% calculated by Streit and Ernst (1992) from the study of 7,000 calvings in more than 200 Dutch cattle farms and to the figure of 8.73% established in Poland by Chmielnik and Sawa (1988) from 1810 calvings. Putting together all of the observations corresponding to the 90,000 calvings, taking place during 20 years among an American experimental herd of Hereford beef cows, Azzam et al. (1993) obtained a figure of 6.4% deaths, from birth to the end of the first week of life.

In developing countries, in which animal breeding frequently represents a very important economic sector, credible values are even more scarcely available. The indications are that the real figures are even more alarming and animals experience very rough rearing conditions, being left on their own. Indeed, in extensive conditions, kid mortality rate can be as high as 60% (O'Brien and Sherman, 1993). In France, however, in an outdoor herd of Lacaune ewes, where no farmer assistance was given, Lécrivain and Janeau (1988) recorded losses of 24%

at 48 h during 4 consecutive years. Taking Brazil as an example, calf mortality rate, which is very high during the first month, is alone partly responsible for the low efficiency of cattle production (Gomes and Carneiro, 1977; Leite and Lima, 1983; Ribeiro et al., 1983) when compared to the situation in more developed countries.

Among the threats that put the life of the new-born in danger the lack of acquired immunity and the resultant susceptibility to bacterial/viral infections is the most dramatic problem. It is something which occurs during the first hours of life but does not however lead to immediate death. The consequences occur later. Without defense against aggression, the morbidity of poorly protected animals is high and the mortality a month later will be greatly increased. The other dangers are related to the gastrointestinal tract immaturity associated with early weaning.

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