

SANITARY EFFECTS OF RAIN DEFICIENCY DURING SUMMER 2003 ON HEALTH IN SUCKLING COW HERDS IN SOUTH-BOURGOGNE (FRANCE)

Jean-Luc Jobert

Groupement Départemental de Défense Sanitaire de Saône-et-Loire, Mâcon, France

Introduction

During 2003, an early and unusual severe rain deficiency associated with high temperatures occurred in France especially in the central area of the country. This situation resulted in a severe grass deprivation for the bovine herds. As a corrective measure, the farmers fed their beef cattle with large quantities of straw in order to maintain lactation in the suckling cows at the pasture.

Material and Methods

Thanks to routine data collected by a local organisation in charge of traceability of cattle (EDE)⁽¹⁾, we carried out an epidemiological study aiming at accurately follow up the natural mortality rates over time. In fact, each animal dying on our county must be notified to EDE and the date of the death noted. Furthermore, some information is collected about the cause of death through veterinary inspections realised on request of the Sanitary Authorities (DDSV)⁽²⁾. In Saône-et-Loire there are nearly 6000 bovine herds regrouping about 250000 cows including 220000 suckling cows.

Results

From June to November 2003, the mortality rate increased within cattle population of 6 months to 1 year of age in comparison to 2002 (rate multiplied by about 1.5) (Figure 1). For the cattle of more than 2 years, the mortality rate clearly increased during the first quarter of 2004, reaching 0.32% in March instead of 0.20 to 0.24 % during the previous years (Figure 2).

Figure 1 : Monthly mortality rate of cattle of 6 months to 1 year of age, evolution since January 2002 to April 2004.

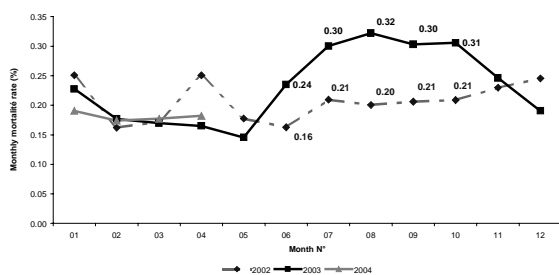
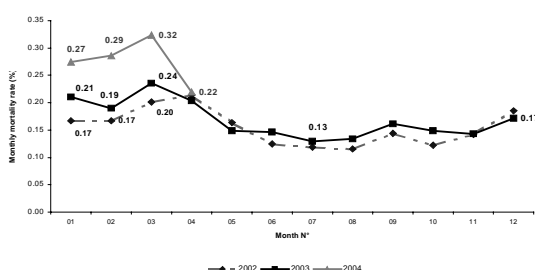


Figure 2 : Monthly mortality rate of cattle of 2 years of age and more, evolution since January 2002 to April 2004.



The relative part of the different syndromes reported by the veterinarians was not very different during the first quarter of 2004 in comparison to the same period of 2003. The relative prevalence of metabolic diseases slightly increased in 2004 (8% during the first quarter of 2004 instead of 5% at the same period of 2003).

In cattle of 2 years of age and more, the mean age at death was significantly higher during the first quarter of 2004 than that during the same period of 2003 (resp. 6.7 years and 6.1 years, p-value < 0.001).

Discussion

About sanitary effects in cattle following the drought period of 2003, some differences might be in part correlated with the age of the animals. The grass-fed calves showed earlier and greater mortality than adults, probably due to a less adaptability to the diet that included large quantities of straw.

During the first 3 months of 2004, the calving might have triggered the enhancement of the mortality in adults (stress). In addition, because of the drought, the cows have lost weight and the mineral and trace element deficiency has been more severe. The muscular depletion is often accompanied by kidney damages like nephritis. The oldest cows might have been particularly weakened and this could explain the increased average age of cows which were lost.

No special infectious aetiology can be put forward trying to explain the increased mortality of adults, suggesting that the grass deprivation has indifferently triggered many disorders, without giving greater place to a given biological disturbance. However, even if the feed tended to be better balanced with addition of molasses to straw, the ruminal flora has certainly been modified, probably causing long-term metabolic disorders.

Conclusion

The severe drought experienced during 2003 had serious sanitary effects on suckling cattle. The main clear expression was on increased mortality. We are now trying to investigate further the different pathological processes leading to death through a retrospective analytic epidemiological survey.

⁽¹⁾ Etablissement Départemental de l'Élevage

⁽²⁾ Direction Départementale des Services Vétérinaires

Acknowledgements

Sincere thanks to Laurent Solas from EDE and Sandrine Meunier from DDSV for the provision of raw data.