

SURVEILLANCE OF FOOT AND MOUTH DISEASE IN THE PROVINCE OF CORDOBA, ARGENTINA, A RETROSPECTIVE STUDY : ESTIMATION OF PREVALENCE AND RISK FACTORS

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The steers/cows ratio to describe production profile was used. This characterized two areas in the South of the Province, the southwest as fattening and the southeast as breeding or dairy. The VIA-A prevalence was clustered in the space but only the median VIA-A adult prevalence was statistically different between both areas.

INTRODUCTION:

Due to the multiple ways of transmission of the FMD virus (direct and/or indirect contact), a similar behavior of the disease is expected in those animal populations subjected to similar production and management ways. Therefore, it is necessary to identify all the different systems animal production because these systems along with different ecological factors constitute different scenarios that influence the maintenance and the dissemination of the FMD virus within the population. Our hypothesis is that the tested indicators allow to explain VIA-A prevalence distribution.

OBJECTIVE, MATERIALS AND METHODS

To identify different systems of animal production into the studied area as well as to relate them to the VIA-A prevalence in the studied establishment and in animal category.

Forty two (42) basic administrative units (BAU) of the system surveillance of southern Córdoba supplied demographic data in order to characterize production forms during Spring 1995. A cross sectional study of 26 out of 42 BAUs was done to estimate the VIA-A prevalence. In each unit 20 farms were randomly selected. Twelve animals from each farm, which had no previous vaccination record within the last 3 months, were bled. Steer / cow and cow / total bovine relationships were used as indicator of production system in each unit. Prevalence VIA-A was separated in categories depending on the age animal ages: young (6 to 12 months), middle age (12 to 24 months), adults (more than 24 months). Prevalence in each establishment was studied. Detection of antiviral antibody was carried out by means of an agar gel immunodiffusion test (AGIT). BAU were digitalized by Epimap and a database was created with demographic and prevalence data.

RESULTS:

As the observed demographic indicators were so closely related ($R^2 = 0,93$ p value = 0,003) only the steer / cow ratio was used. This index was used to classify the areas into fattening areas (relationship $\geq 0,9$) and fattening-breeding, breeding and dairy areas (relationship $< 0,9$). According to this classification it was determined the existence of two main areas in the central-south region of the province, one in the west with 22 BAU having values of steer / cow $> 0,9$ with a median of 1,15, and a second in the east with 20 BAU having values of steer / cow $< 0,9$ with a median 0,7 (Fig. 1). Once this areas were identified the VIA-A prevalence was comparing among them. In the digitalized maps we observed multiple BAUs with similar prevalence that did not correspond to determined areas. Median of prevalences in individual establishment were 7 % and 45 % ($P < 0,05$). In adults the prevalences were 30% and 15 % ($P < 0,05$) for the western and eastern areas respectively (Fig. 2). Medians of prevalences among areas for middle age and young did not result different statistically.

Figure 1 : Production system characterization

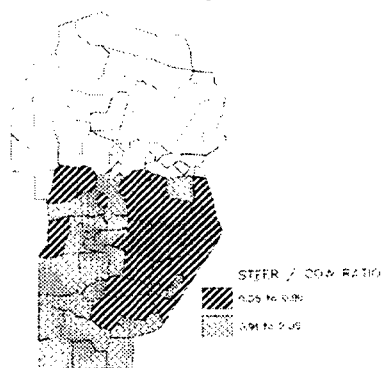
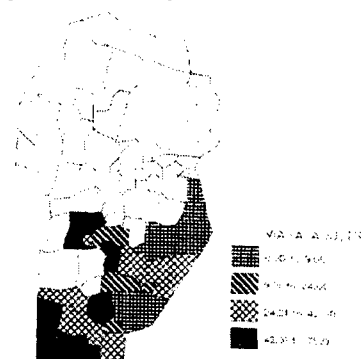


Figure 2 : Via-A prevalence in adults



DISCUSSION

Results do not suggest the existence of overlapping areas of high prevalence and fattening areas in the animals categories that better indicate viral activity (young and middle age). Probably, it would be better to use this indicator with other variables such as postvaccinal populational protection index.

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