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Risk-based Sampling Strategy for BHV1-Surveillance

Introduction

According to Commission Decision 93/42/EEC the entire territory of Austria received additional guarantees for BHV-1 (IBR/IPV) under Article 10 of Directive 64/432/EEC. To maintain the status "free from BHV-1" the International Animal Health Code on IBR/IPV requires an implementation of a biometric sampling plan sufficient to provide a 99% level of confidence of detecting BHV-1 if it is present at a prevalence rate exceeding 0.2% of the herds (KÖFER et al., 1999). This requirement is also part of the Austrian IBR/IPV order. The strategy of selecting the fixed number of herds to be sampled is left to the provincial veterinary authorities.

Material and Methods

A geographical information system under the name VETGIS©-Styria (KÖFER et al., 2003) containing the coordinates of all farms is updated quarterly with detailed herd information from the Austrian cattle data base. Every year the Institute for Applied Statistics, Joanneum Research, creates a sampling plan taking into account the disease situation in Styria, the herd specific risk of BHV-1 infection, the results of former tests and the geographical distribution of farms. The risk of introduction of BHV-1 into a herd can be assumed to be proportional to contacts with animals of other herds. Information on such contacts can be obtained from the Austrian cattle data base.

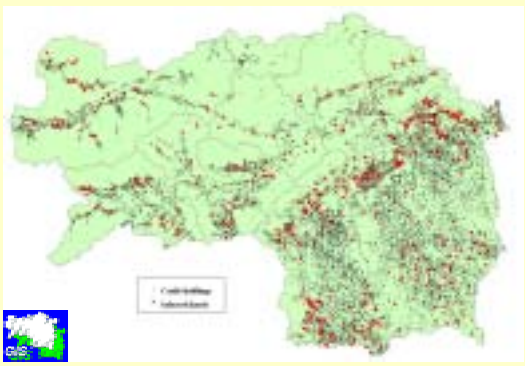

Fig. 1: Selected herds for BHV-1 surveillance, 2004

Results and Conclusions

A total of 620 Styrian cattle herds must be tested serologically for the presence of BHV-1 infection each year under the Austrian IBR/IPV order. In 2004 the following sampling plan for Styria was drawn up: All herds with animals recently bought from other member states (14), a sample of herds with national purchases (86), a sample of herds with animals grazing on common pastures (379) and finally a sample of the remaining herds (141). VETGIS©-Styria guarantees an equal distribution of selected herds over the entire territory of Styria (fig. 1). Such a risk-based sampling strategy is considered to be a good way of increasing the effectiveness of BHV-1 surveillance whilst saving money for other activities.

References

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