Use of Bovine Ear Notch samples for Bovine Viral Diarrhoea Virus Detection in a Regional Program in Azores Islands, Portugal

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Introduction: Infection due to bovine viral diarrhoea virus (BVDV) is endemic in most cattle-producing countries throughout the world. The key elements of a BVDV control program are biosecurity, elimination of persistently infected animals and surveillance. Bovine viral diarrhoea (BVD) is a notifiable disease in Azores and an eradication program starte in 2016, based mainly on testing ear notches during the official identification. To detection of BVDV is used PCR Real Time (RT-qPCR). Objective: The program of Azores government aims the eradication of BVDV infection in the dairy herds on Azores Islands, through the screening and culling of persistently infected animals (PI). And still continue to encourage the measures of biosecurity, the effective vaccination to prevent fetal infection and the exaggerated presentation of clinical signs. To improve the animal health in Azores dairy herds, and consequently dairy production as this represents 30% of the overall Portuguese dairy production. Material and Methods: The RT-qPCR technique to detect PI animals is performe in ear notches samples. Total RNA is extracted using MagMax Core Nucleic Acid Purification Kit Universal (ThermoFisher Scientific), according to the manufacturer's instructions. The RNA elution is realized in 90µL of MAgMax Core Elution Buffer. Reverse transcription and 5'UTR PCR amplification of BVDV target were realized using "Vet Max BVDV Screening Kit (ThermoFisher Scientific) and Quant Studio 5 Real-Time PCR System (Applied Biosystems) equipment. Results, discussion and conclusion: Between 2016 and 2022 were tested to BVDV a total of 596 026 ear notch samples. Were detected and eliminated from dairy herds a total of 5064 PI animals. The prevalence of PI animals in 2022 was 0.56% in Azores. The objective will be concluded when all dairy herds on all islands were intervened and classified as "BVD-Free" (BVDL). The Program of Azores government to eradication of BVDV is mandatory through Ordinance No. 56/2016, of June 21, 2016. Ear notch testing is a reliable method for detecting PI animals and has proven to be practical and efficient in Azorean program to control and eradicate BVDV infection.