VOLUNTARY HERD CERTIFICATION PROGRAMMES FOR IBR AND BVD IN PORTUGAL*

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RESUME *: Cet article présente les résultats obtenus lors de trois sondages destinés à évaluer la prévalence des troupeaux de bovins laitiers infectés par les virus de la rhinotrachéite infectieuse bovine et de la diarrhée à virus au Portugal. Il fournit également les bases d'un plan de lutte volontaire contre ces deux maladies.*

SUMMARY *: This paper presents the results obtained during three surveys oriented towards the evaluation of prevalence of dairy cattle herds infected by IBR and BVD virus in Portugal. It also brings elements for voluntary actions against these two diseases.*

I – INTRODUCTION

A two-year epidemiological investigation of BHV-1 and BVDV infection was carried out in dairy herds of the *Entre-Douro e Minho*, a Portuguese agricultural region located at the NorthWest that produces about 50% of the country milk.

The major objective was to clarify the regional scenario of IBR and BVD in order to design voluntary herd certification schemes for these diseases. All the activities were financially suported by UCADESA, the Regional Federation of Animal Health Defense Groups.

II - MATERIAL AND METHODS

The study design was based upon a combination of three epidemiological studies:

A. An initial cross-sectional randomized study, n=75 large dairy herds located at three counties (sample size=10% of all herds with more than twenty-five reproductive females).

Objectives: To estimate the prevalence of BHV–1 and BVDV infection at herd and community level and to map the BHV–1 and the BVDV infection.

ELISA on blood samples was used to identify seropositive cattle[3]. Five heifers and five cows were randomly selected for blood testing.

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3 Kit gE anti-IBR HerdChek; kit LSI BVD/BD Anticorps p80 Blocking ELISA

According to the ELISA kits used, dairy herds with >40% of seropositive heifers were considered BVD+. Dairy herds with <40% of seropositive heifers were considered BVD (suspicious)? Dairy herds with 100% of seronegative heifers were considered BVD–. Dairy herds with seropositive heifers and seropositive cows were considered IBR+. Dairy herds with seropositive results only in one group either heifers or cows were considered IBR (probably due to vaccinal antibodies)? Dairy herds with 100% of seronegative results were considered IBR–.

B. This micro-scale study was followed by a larger study in order to confirm the dispersion of the BHV–1 infection and the previous estimatives of prevalence. This was a second cross-sectional randomized study, *n*=252 milk bulk tanks located at ten counties of the region (sample size=10% of all the private milking parlours and 10% of all the communal milking parlours).

ELISA on bulk milk tank was used to identify herds with seropositive cattle.

Regarding BVD the ELISA kit used generates four type of results : negative (absence of virus circulation; no risk of presence of PI), weak (5-25% of seropositive animals), medium (25-65% seropositive animals) and positive (65-100% seropostive animals). Relatively for BHV–1 the ELISA kit used generates only two type of results: positive (infected or vaccinated herd) and negative (herd not infected or infected but at a very low level with absence of virus circulation).

C. The presence of both natural antibodies and vaccine induced antibodies in the population made extremely difficult the interpretation of IBR "positive" results from studies A and B. Therefore, it was decided to set up a third study on a geographical area where vaccination against BHV–1 was not introduced. A case-study at the county of *Arouca*, *n*=49 dairy herds, was carried out to estimate the prevalence of BHV–1 infection. ELISA on bulk milk tank was used to identify herds with seropositive cattle.

Data on herd size, herd structure, farm management and preventive measures was collected by means of a questionnaire in the three studies.

III - STUDY RESULTS

A. The 95% CI for the BHV–1 prevalence was 17.5-27.5%. BHV–1 infection was detected in 26.7% communities (n=45).

The 95% CI for the BVDV prevalence was 14.2-33.8%. BVDV infection was detected in 33.3% communities (n=45).

B. 35% of the bulk milk tanks shown positive results. BHV–1 infection was detected in 33.3% communities (n=45).

C. 92% of the bulk milk tanks shown positive results for BHV–1 (n=49).

The major risk factors and population effects identified were (i) dairy heifers/cows acquisitions and (ii) dairy heifers imports.

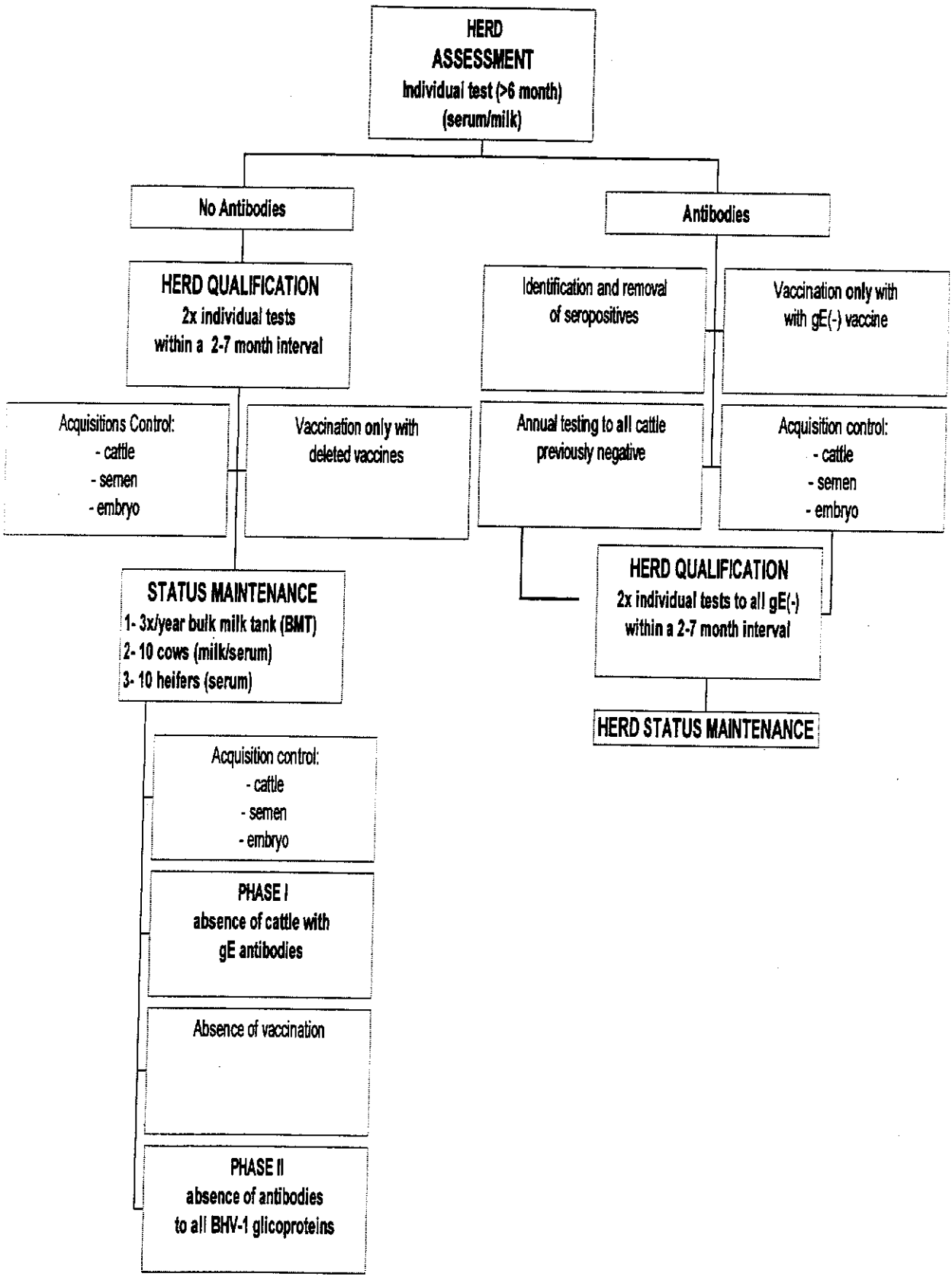
The dairy heifers/cows acquisitions OR was 2.4 and the PAF 37.5% for BHV–1.

The dairy heifers imports OR was 2.1 and the PAF 37% for BHV–1.

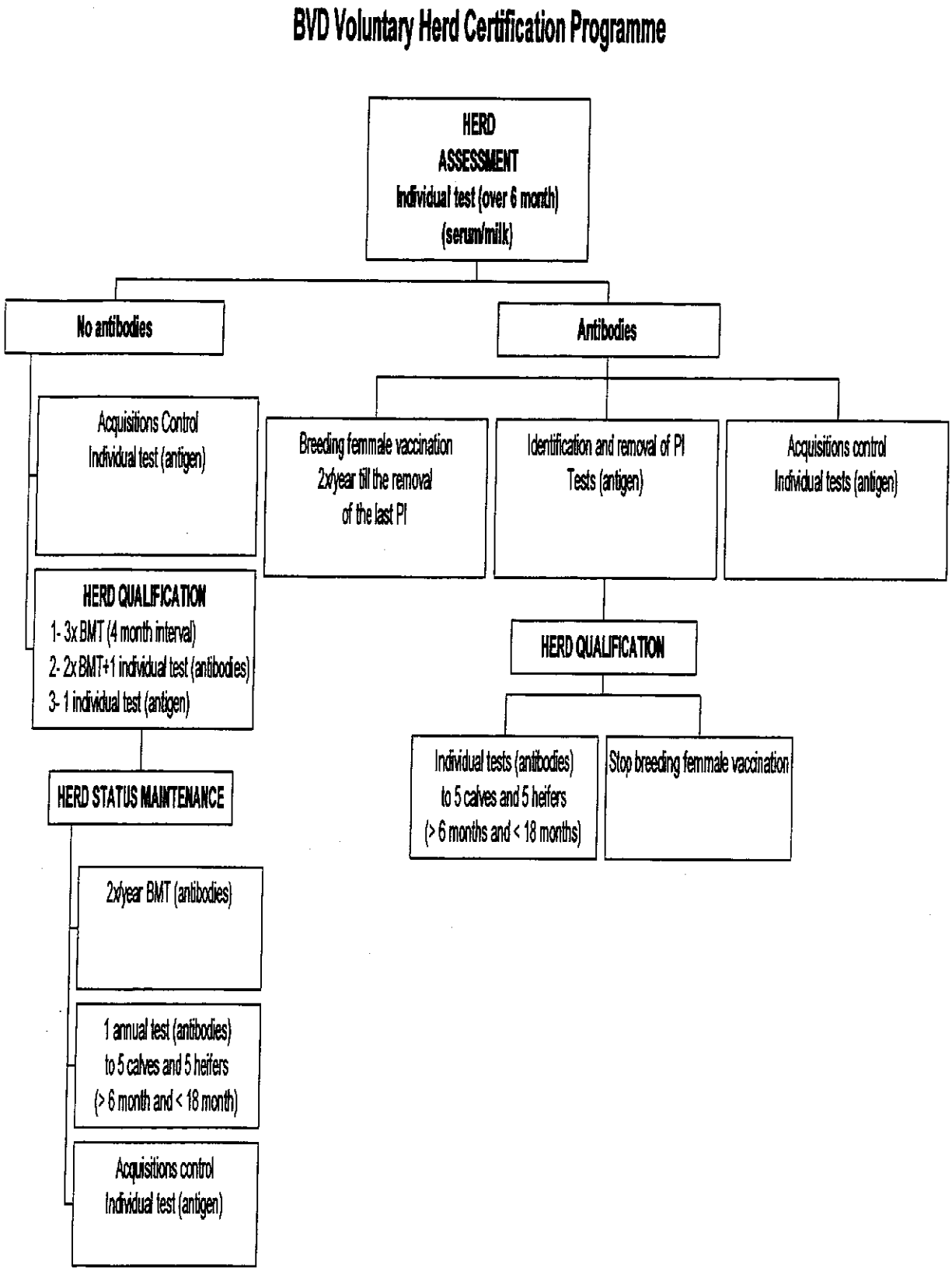
The dairy heifers/cows acquisitions OR was 2.8 and the PAF 44% for BVDV.

The dairy heifers imports OR was 2.2 and the PAF 37% for BVDV.

IBR Voluntary Herd Certification Programme



Annual costs (per cow): Herd initial assessment (4 EURO), herd status qualification (8 EURO), herd status maintenance (3.91 EURO), IBR eradication (59.45 EURO), herd vaccination (84.85 EURO)



Annual costs (per cow): Herd initial assessment (4 EURO), herd status qualification (0.51-6.25 EURO), herd status maintenance (0.51-1.7 EURO), herd vaccination (105.98 EURO).

IV - THE VOLUNTARY HERD CERTIFICATION PROGRAMMES FOR IBR AND BVD

Considering the major tendencies facing IBR and BVD in most EU countries, it was found that to start a voluntary eradication programme could be attractive for most of the large and medium size dairy herds of the *Entre-Douro e Minho* region. Therefore, it was recently proposed by UCADESA to the Portuguese Ministry of Agriculture, the following **Voluntary Herd Certification Programmes for IBR and BVD**, based on the EU Directive for the certification of animal products 96/93 CE and in the Portuguese Law for the eradication and control of transmissible diseases D.L.157/98.

Finally, we point out three major advantages of these certification programmes according to dairy producers :

1. they operate on a voluntary basis,
2. the best producers can enter immediately into a credible scheme that will allow them to obtain a certificate of IBR and BVD *freedom*, and
3. the present and endless vaccination costs of many producers can become investments on disease eradication.