ASSESSMENT OF THE IN-USE STABILITY OF THE PRRS VIRUS OF TWO DIFFERENT COMMERCIAL PRRS MLV AFTER RECONSTITUTION WITH PPV AND SE VACCINES

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INTRODUCTION

Nowadays, various vaccination programs have to be implemented in sows. On the one hand, reduction of injections by administering vaccines simultaneously can improve both animal welfare and the farmer's labour efficiency. On the other, these combinations must be safe and effective and the European Medicines Agency (EMA) is the institution responsible for guaranteeing the efficacy of these mixtures. The combined use of ERYSENG® PARVO and UNISTRAIN® PRRS is the first combination licensed in Europe by EMA. The purpose of this study was to assess the in-use stability of the UNISTRAIN® PRRS vaccine after it has been reconstituted with ERYSENG® PARVO in comparison with the in-use stability of another European commercial PRRS MLV reconstituted with the SE and PPV vaccine from the same manufacturer.

MATERIALS AND METHODS

A freeze-dried tablet of 25 doses of UNISTRAIN® PRRS was reconstituted with 50 ml of ERYSENG® PARVO (group A) and a freeze-dried tablet of 25 doses of a European commercial MLV vaccine was reconstituted with 50 ml of the SE and PPV vaccine from the same manufacturer (group B). As a positive control, a freeze-dried tablet of the same batches of UNISTRAIN® PRRS and the European commercial MLV were reconstituted with 50 ml of their specific solvents (groups C and D, respectively) The titre of the PRRS virus from each group was assessed at T = 0, 1, 2, 3 and 4 hours after reconstitution. The reconstituted vaccines were kept at room temperature throughout the study. The virus was titrated by measuring its cytopathic effect in the MARC 145 cell line. According to the SPC of both products, the minimum cell culture infection dose (MCCID) of UNISTRAIN® PRRS is $10^{3.5}$ $CCID_{50}$ and for the other European commercial MLV vaccine it is 10^4 $CCID_{50}$.

RESULTS

The results showed that in group A (Figure 1), the PRRS virus remained stable for 2 hours after reconstitution. From 2 hours onwards, the virus titre started to decline but remained above the MCCID until the end of the study. In group B (Figure 2), a significant drop in the PRRS virus titre was observed less than 1 hour after reconstitution and led to results clearly below the MCCID (10^4 $CCID_{50}$/dose). In the control groups for both vaccines (Figures 1 and 2), the PRRS virus remained above the MCCID until the end of the study.

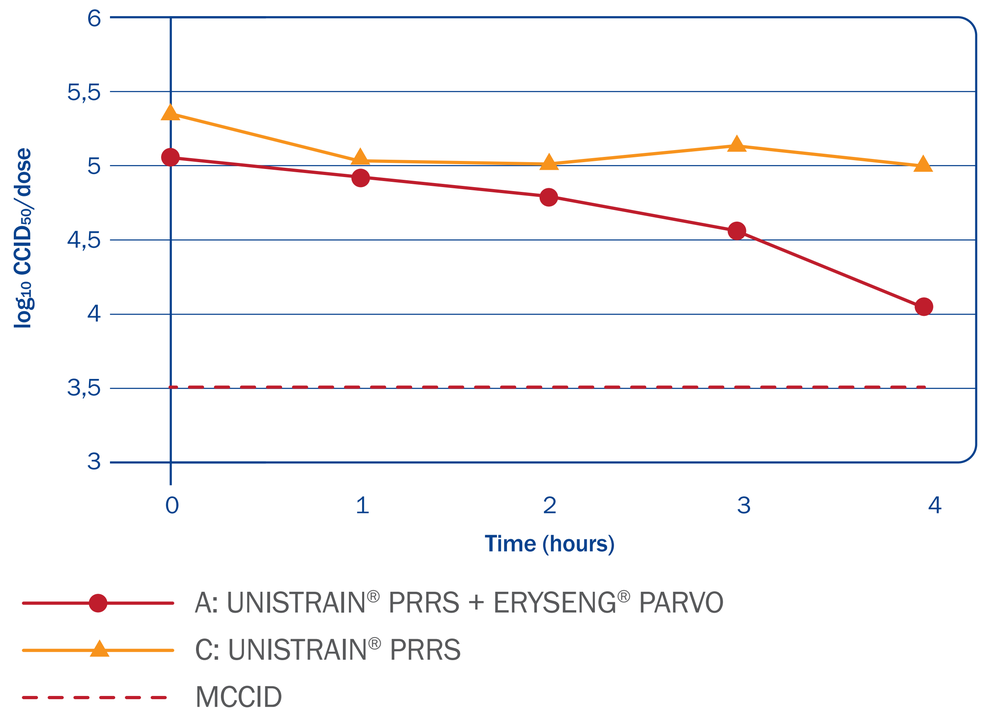

Figure 1. In-use stability of UNISTRAIN® PRRS.

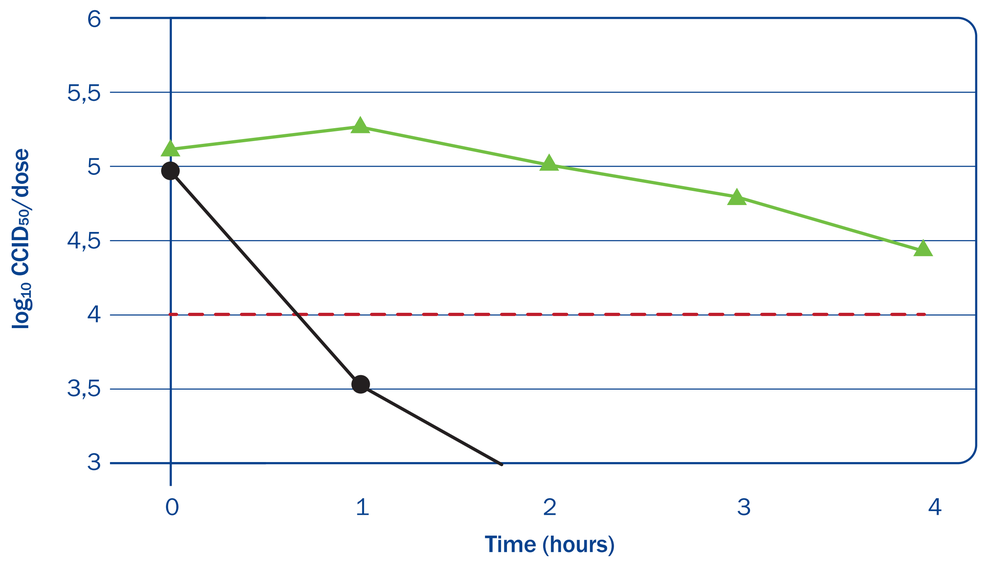

Figure 2. In-use stability of European commercial MLV vaccine.

DISCUSSION

One of the most important factors for obtaining registration for the combined use of a MLV PRRS vaccine and SE and PPV vaccine is to ensure that the PRRS virus is kept alive after the vaccines are mixed together. The results of the study demonstrated that the viability of the PRRS virus after mixing UNISTRAIN® PRRS and ERYSENG® PARVO can be guaranteed for 2 hours after reconstitution, unlike the non-registered combination of the other commercial MLV combined with the SE and PPV vaccine from the same manufacturer.

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