

PERFORMANCE OF ASSAYS FOR TESTING ANTIBODIES AGAINST PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME VIRUS IN SERA COLLECTED FROM SWINE FARMS IN A REGION WITH AN EXTREME VIRUS HETEROGENEITY

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Porcine reproductive and respiratory syndrome is the most economically important viral disease in the swine industry worldwide. Porcine reproductive and respiratory syndrome virus (PRRSV) strains are classified into two distinct genotypes, the European genotype and the North American genotype. The European PRRSV genotype has been divided into three subtypes: a pan-European subtype 1 and East European subtypes 2 and 3. The aim of this study was to evaluate the performance of commercial and homemade serological assays to test field sera from a geographical region with an extreme PRRSV heterogeneity. Belarus became the country of choice for sample collection because heterologous PRRSV strains of all known European subtypes circulate in this country. Sera from Belarusian swine farms were tested in immunoperoxidase monolayer assays based on pan-European subtype 1, East European subtype 3 and North American strains as antigens and commercial enzyme-linked immunosorbent assays (IDEXX and INGEZIM). The obtained results suggest that none of the serological tools for PRRSV diagnosis can guarantee a flawless detection of antibodies at the individual animal level. Considering heterogeneity of recently isolated European PRRSV strains the problem can be relevant in many countries.

Key words: porcine reproductive and respiratory syndrome virus; serology; diagnosis; Belarus

INTRODUCTION

Porcine reproductive and respiratory syndrome is the most economically important viral disease in the swine industry worldwide. Porcine reproductive and respiratory syndrome virus (PRRSV) strains are classified into two distinct genotypes, the European genotype and the North American genotype [1]. The European PRRSV genotype has been divided into three subtypes: a pan-European subtype 1 (the prototype is the Lelystad virus, LV) and East European subtypes 2 and 3 [2]. Recently, a previously unknown East European subtype 3 PRRSV strain (Lena) from Belarus has been isolated and its

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