The **Reference** in **Prevention** for **Animal Health**

ASSESSMENT OF THE EFFICACY OF ERYSENG® PARVO/LEPTO IN THAILAND

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INTRODUCTION

Swine Erysipelas (SE), Porcine Parvovirus (PPV) and *Leptospira sp.* are very common organisms of infectious etiology that can cause reproductive diseases in pigs. However, infection with either of these agents mainly produces subclinical disease, but animals may not die in larger or smaller-scale herds[1,2]. Even so, the high incidence of SE has increased since the rapid emergence of resistant bacteria attributed to overuse and misuse of antibiotics[3]. ERYSENG® PARVO/LEPTO (EPL) is a triple-action vaccine (SE, PPV and *Leptospira interrogans sp.*) with broad protection against three of the most significant diseases affecting porcine reproductive health. Currently, no published large-scale analysis has assessed the efficacy of EPL in Thailand.

The aim of this study was to evaluate sow performance before and after the implementation of a vaccination schedule using the EPL vaccine.

MATERIALS AND METHODS

The safety and efficacy of ERYSENG® PARVO/LEPTO (EPL) were assessed on a farm of 1,260 healthy sows in the western part of Thailand during 2018-2019. The farm history was considered typical of SMEDI with a high incidence of average mummified fetuses and average fetal deaths of up to 5.46 % and 9.45 %, respectively.

The farm was using a triple action vaccine (Vaccine A, market leader in Thailand) but experienced severe to moderate side effects after injection, including depression, skin rash, vomiting and respiratory distress. Since the last doses of vaccine A, the sows (n =1,208) had received 2 doses of EPL administered in accordance with the manufacturer's leaflets. The safety of the vaccine in sows was monitored daily for adverse reactions up to 72 hours post vaccination. The field efficacy of the vaccine was determined by comparing sow performance before (Vaccine A) and after using the EPL vaccine. Furthermore, reproductive parameters in this trial were statistically analyzed using the SPSS statistical program (version 22.0).

RESULTS

Regarding the safety assessment, no local and systemic reactions associated with EPL vaccination were observed. In terms of efficacy, group mean sow productivity with EPL showed that improvement in reproductive performance was significant, as shown in Table 1 *($p<0.05$)*, specifically with a reduction in mummified fetuses of up to 47.56 %. Furthermore, the average daily gain (ADG) of the piglets during lactation also increased by 17.85 g/day *($p<0.05$)* compared to Vaccine A, which showed a 9.76 % increase.

Production Parameter[1]	EPL	Vaccine A	*P-value*	Diff (%)
Number of sows	1,260	1,208		
Farrowing rate (%)	92.75[a]	88.18[b]	0.042	+5.18
Total number of piglets born alive/litter	13.9[a]	12.15[b]	0.003	+14.4
Stillbirths (%)	7.9[a]	10.23[a]	0.060	-22.78
Mummified fetuses (%)	3.12[a]	5.95[b]	0.049	-47.56
Pigs weaned/sow	11.7[a]	9.62[a]	0.124	+21.62
Pre-weaning mortality (%)	6.73[a]	16.63[b]	0.0006	-59.53
ADG (g/day)	200.71[a]	182.86[b]	0.0019	+9.76

[1]Sow performance was recorded from 2 groups (EPL vs Vaccine A): different superscripts (a, b) indicate statistically significant differences within the main parameters *($p \leq 0.05$)*

Table 1. Production parameters measured in the subsequent gestation, for a set of each vaccine group (EPL vs Vaccine A)

CONCLUSIONS AND DISCUSSION

These results indicate that the EPL vaccine is safe and efficacious in reducing the rate of pre-weaning mortality in piglets, mummified fetuses and stillbirths under field conditions. The ADG was also statistically significantly higher, which could be related to the better safety of EPL in lactation compared to Vaccine A. Furthermore, field data provide key general insights into the evaluation of the impact of the EPL vaccine that should be considered in the control of these diseases in swine herds in Thailand.

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