

## THE EFFICACY OF TOP-DRESSING SOW RATIONS PRE-FARROWING WITH IVOMECC® Premix

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Ectoparasites such as sarcoptic mange mites, *Sarcoptes scabiei* var. *suis*, and pig lice, *Haematopinus suis*, have a substantial negative effect on productivity.<sup>4</sup> The mite *S. scabiei* var. *suis*, the cause of sarcoptic mange, is the most harmful ectoparasite affecting swine worldwide.<sup>4,6</sup> Specifically, sarcoptic mange is of significant economical importance, because it can reduce growth rates and feed efficiency in growing pigs and decrease sow productivity.<sup>1,2,7</sup> Also, extra costs can occur in the packing plant when trimming is necessary for severe skin lesions, resulting in loss of carcass value at slaughter. Hypersensitivity (allergy) of growing pigs to mange is detrimental to their performance efficiency. Even though pigs experience reduced weight gain and feed efficiency, clinical signs of mange are often viewed as normal because there is no mortality. Producers often tolerate the disease, because of the covert nature of the losses.<sup>10</sup>

Evidence continues to confirm the prevalence and severity of mange in swine. Published reports and surveys indicate a 25% to 95% incidence of sarcoptic mange mites in swine herds throughout the world.<sup>4,8</sup> A recent survey conducted in seven hog-packing plants in the Midwestern swine belt of the United States revealed an overall prevalence of mange of 43%. The percentage of herds in which mange was likely to be present ranged from 31 to 53% between plants.<sup>9</sup> This underscores the need for mange elimination.

Previous studies have demonstrated the efficacy of treating sows pre-farrowing<sup>4</sup> and the value of producing mange free pigs at weaning.<sup>5</sup> Oral medication has also been promoted on welfare grounds, as an alternative to injections, but the efficacy of topdressing rations has received little evaluation. This study reports on the efficacy of topdressing sow rations with IVOMECC® Premix for 7 days prior to farrowing.

**Materials and methods.** Sixty sows were divided into three groups of 20 and penned in individual stalls without contact between pigs. Group A was injected with IVOMECC® (1ml/33kg); the daily rations of sows in Group B were topdressed with IVOMECC® Premix diluted (0.5kg/4.5kg) with lactating sow diet and added at a dose rate of 100mcg/kg; Group C remained unmedicated. All sows were examined on days zero and 30. Examinations included scoring the size of ear lesions,<sup>3</sup> and scraping the inner surface of the ear and examining the material for mites. A blood sample was collected for serology from 10 sows in each group. Thirty progeny from each sow group were randomly identified and housed in pens (10 pigs/pen) from weaning to slaughter without contact with other pigs. The progeny were examined at slaughter for mites and the average dermatitis scores (ADS) for each group calculated.<sup>4</sup> Material was also scraped from the left ear and examined for mites<sup>4</sup> and a blood sample collected and examined for antibodies to *Sarcoptes scabiei*.<sup>11</sup> Pigs were weighed pre-slaughter; ear and body lesions were scored and rubbing indices (RI) calculated.<sup>3</sup>

**Results.** Mite counts and ear lesion scores were reduced significantly ( $P < 0.05$ ) in treated sows 30 days after treatment, whereas counts and scores were unchanged in non-medicated sows. However, ELISA values were unchanged in all groups (Table 1).

Although live mites and eggs were recovered from the progeny of non-medicated sows, the progeny from treated sows were free of mites (Table 2). Both the RI and the ADS for the progeny of medicated sows were less than 0.1, compared with values of 0.8 and 0.97 for the progeny of non-medicated sows (Table 2). Similarly, ELISA values for the progeny from medicated sows were

<0.35 ELISA units, compared with 0.85 for the non-medicated group. Growth rates in pigs from medicated sows were increased by 4.9%.

Table 1: Mean mite counts, ear lesions scores and ELISA values for non-medicated sows and sows treated with either injections of Ivomec® or Ivomec® in-feed.

	Ivomec® Injectable	Ivomec® Premix	Non-medicated
Live mites (D 0)	11.8 <sup>a</sup>	11.7 <sup>a</sup>	11.6 <sup>a</sup>
Live mites (D 30)	0 <sup>b</sup>	0 <sup>b</sup>	11.0 <sup>a</sup>
Total mites (D 0)	75.4 <sup>e</sup>	91.1 <sup>e</sup>	90.0 <sup>e</sup>
Total mites (D 30)	0.4 <sup>f</sup>	0.55 <sup>f</sup>	81.8 <sup>e</sup>
Ear lesions (D 0)	3.2 <sup>x</sup>	3.05 <sup>x</sup>	3.1 <sup>x</sup>
Ear lesions (D 30)	0 <sup>y</sup>	0 <sup>y</sup>	3.2 <sup>x</sup>
ELISA (D 0)	0.79 ± 0.13	0.80 ± 0.14	0.76 ± 0.17
ELISA (D 30)	0.76 ± 0.13	0.78 ± 0.14	0.78 ± 0.20

a,b,c,d,e,f,x,y – values with different superscripts significantly different (P<0.01)

Table 2: Mean mite counts, lesion scores, rubbing indices (RI), average dermatitis scores (ADS), ELISA values and growth rate (ADG g/day) for the progeny from non-medicated sows, and sows treated with either injections of Ivomec® or Ivomec® in-feed

	Ivomec® Injectable	Ivomec® Premix	Non-medicated
Live mites	0 <sup>a</sup>	0 <sup>a</sup>	4.7 <sup>b</sup>
Total mites	0 <sup>a</sup>	0 <sup>a</sup>	21.8 <sup>b</sup>
Eggs (% pigs)	0	0	50
Ear lesion	0 <sup>a</sup>	0 <sup>a</sup>	1.2 <sup>b</sup>
Body lesion	0.03 <sup>a</sup>	0.03 <sup>a</sup>	1.0 <sup>b</sup>
RI	0.03 <sup>a</sup>	0.10 <sup>a</sup>	0.97 <sup>b</sup>
ADS	0.10 <sup>a</sup>	0.10 <sup>a</sup>	0.93 <sup>b</sup>
ELISA units	0.34 ± 0.04 <sup>a</sup>	0.34 ± 0.05 <sup>a</sup>	0.85 ± 0.16 <sup>b</sup>
ADG±SD	619 ± 10.4 <sup>a</sup>	615 ± 14.9 <sup>a</sup>	586 ± 25.6 <sup>b</sup>

a,b – values on the same line with different superscripts significantly different (P<0.01)

**Discussion.** The results confirmed the efficacy of topdressing sow rations pre-farrowing with IVOMECE® Premix diluted (0.5kg/4.5kg) with lactating sow diet. The progeny of sows medicated in this way were negative at slaughter for mites and antibodies to *Sarcoptes scabiei*, and grew significantly faster than progeny from non-medicated sows.

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