

EFFECTS OF EPERYTHROZONOSIS ON SOW PRODUCTIVITY

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In the United States, there is a widespread occurrence of eperythrozoonosis titers in breeding swine. A survey of 10,000 swine sera (Smith, 1978) found 20% of the animals positive at a titer of 40 or more using the indirect hemagglutination (IHA) test. The development of the IHA test (Smith, 1975) and the subsequent results has resulted in an association of clinical disease and low-grade infection. Presently, it is believed that eperythrozoonosis is clinically observable at four stages of swine production: (Smith, 1978; Berrier and Gouge, 1954; Splitter and Williamson, 1950)(1) reproductive failure; (2) anemia, mild icterus and weakness in newborn pigs; (3) a "delayed marketing syndrome" and (4) the classic icteroaemia of stressed feeder pigs.

A condition exists wherein clinically normal breeding animals have eperythrozoonosis titers, but do not exhibit any of the above clinical signs of the disease. The purpose of this study was to clarify the disease status of the seropositive animals and to determine possible effects on several breeding animal performance indices plus evaluation of possible pig effects.

Using a clinically normal swine herd with 25% of the animals having eperythrozoonosis titers ≥ 80 , the effects on sow productivity and their offspring were studied using piglets from 177 litters. The breeding animals were divided into seropositive (titer ≥ 80) or seronegative (titer ≤ 80) groups using the IHA test.

The following parameters were measured and statistically analyzed on piglets from the two groups: 1) number pigs born alive; 2) number pigs born dead; 3) number pigs born; 4) number mummies; 5) number pigs at 21 days; 6) total birth weight; 7) total live birth weight; 8) average pig birth weight; 9) average live pig birth weight; 10) litter weight at 21 days, and 11) days to estrus.

The seronegative group of sows farrowed litters with an increased average pig birth weight ($P < .05$) plus fewer dead pigs per litter ($P < .05$). There were no significant differences in the other parameters measured.

Piglets from 129 litters of the previously mentioned farrowings were used to study pig effects. At roughly two weeks of age the following parameters were measured: 1) packed cell volume (PCV); 2) hemoglobin (Hb) and serum protein. Also, the birth weights and pig weights at day 21 were measured and the means statistically compared between the groups.

A comparison of the PCV and Hb levels at 14 days in 984 pigs from the above farrowings indicated significantly ($P < .01$) lower PCV and Hb values in piglets from the seropositive group. Serum protein values for the seropositive group was significantly increased ($P < .01$). Also, piglets from the seronegative group had a significantly ($P < .01$) higher birth weight and 21 day weight.

Conclusions:

In this study, a subclinical problem of eperythrozoonosis caused a smaller pig at birth, some degree of anemia and an interference with growth during the first three weeks of life. All these factors, when complicated by secondary problems, certainly could give rise to increased death losses as well as depressed gains. No effect was noted on the reproductive performance of the breeding herd.

Selected References: Berrier, H. H. and Gouge, R.E.: J. Am. Vet. Med. Assoc. 1954, 124:98; Henry, S. C.: J. Am. Vet. Med. Assoc. 1979, 174:601; Smith, A.R. and Rahn, T.: Am. J. Vet. Res. 1975, 36:1319; Smith, A. R.: Purdue Veterinary Notes, No. 106, 1978; Splitter, E. J. and Williamson, R. L.: J. Am. Vet. Med. Assoc. 1950, 116:360.