

Effect on Young Swine of Consumption of Rations Containing Corn Invaded by *Fusarium roseum*¹

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Both male and female pigs given a ration containing corn invaded by *Fusarium roseum*, in amounts sufficient to provide 500 to 600 ppm of F-2, for the first 64 days of the test and which for another 60 days were given a commercial pig ration were much lower in weight than the controls which were given a commercial pig ration throughout. In relation to the weight of the animals, in the pigs receiving the ration containing F-2, the weight of the uterine horn of the gilts was much greater and the weight of the testes of the males was much less than the weight of the same organs of the controls.

Consumption by swine of feed containing F-2, as a result of natural invasion of corn or of other feed ingredients by *Fusarium roseum* (Lk.) Sny. & Hans., may result in estrogenic responses (1). Few tests have been made in which the amount of F-2 in feed consumed by the test swine was precisely known, or in which the effects on various organs of the pigs were determined. The work here reported aimed to do this.

Control feed consisted of a commercial hog ration; the F-2 feed consisted of 50% premix containing minerals, vitamins, and protein, plus 30 to 49.3% sound corn, and 0.7 to 20% of corn invaded by *F. roseum*. Several different batches of corn invaded by *F. roseum* were used, and each batch was added to the feed in an amount that provided 500 to 600 $\mu\text{g/g}$ of F-2. The pigs in this group were given the ration containing F-2 for the first 64 days of the trial, and for the next 60 days they received a ration of commercial pig feed. The pigs were 6 weeks old when the test began. The group on the control feed consisted of 7 males and 15 females, and the group given the F-2 feed was made up of 9 males and 15 females.

All of the gilts on the ration containing corn invaded by *F. roseum* developed swollen vulvas and large nipples within 3 to 4 weeks, and three of them developed prolapsed rectums after 25, 38, and 47 days, respectively, a

symptom that previously has been shown to be produced by feed containing corn invaded by *F. roseum* (2). The ration containing corn invaded by *F. roseum* was discontinued after 64 days, as stated above, and thereafter outward symptoms of estrogenism in the swine regressed. After 124 days the male pigs on the ration containing corn invaded by *F. roseum* averaged 102 lb (ca. 46.3 kg) in weight and the females averaged 86.3 lb (ca. 39.2 kg); male pigs on the control ration averaged 163 lb (ca. 74 kg) and females averaged 157 lb (ca. 71.3 kg). In relation to the weight of the animal, the weight of the uterine horn of the gilts receiving the ration with corn invaded by *F. roseum* was nearly double that of the control, and weight of testes of the males on the F-2 ration was 30% less than the weight of testes of those on the control ration. No significant differences were noted between the pigs in the two treatments, in weight of pituitary, thyroid, adrenals, or brain.

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