

ed with Furacin[®]. Closure is made with 3 vertical mattress sutures of Vetafil. Sutures should be removed 10-14 days post-surgery.

All instruments, including the stainless steel corer are sanitized by autoclaving, then stored in a 1:4000 solution of Nolvasan. The biopsy size is normally 10-15 grams. Animals slaughtered 4 weeks post-surgery show almost complete tissue recovery.

Swine

The Effect of Ration Ingredient Change on Pig Performance

W. G. Luce and C. V. Maxwell

Two trials have been conducted involving 128 growing-finishing swine to measure the effect of ration ingredient change on pig performance.

Treatments involved in both trials were (1) a basal milo-soybean meal ration fed throughout the trials; (2) the cereal grain portion of the rations (milo, corn, and wheat) was rotated every 7 days; (3) the protein source (all soybean meal, $\frac{1}{3}$ meat and bone scraps and $\frac{2}{3}$ soybean meal, and $\frac{1}{3}$ peanut meal and $\frac{2}{3}$ soybean meal) was rotated every 7 days; (4) both the cereal grain and protein sources, as outlined in Treatments 2 and 3, were rotated every 7 days (9 different combinations). Average daily gains, average daily feed intake, feed efficiency, and probed backfat thickness appeared to be similar for all treatments.

The data are presently being analyzed further and will be published at a later date.

Genetic Evaluation Of Purebred And Crossbred Performance For Three Breeds of Swine

I. T. Omtvedt, R. K. Johnson, C. E. Addison,
Steve Welty and Tom Williams

A total of 182 litters were produced at Fort Reno during 1971 to evaluate the differences between purebreds and 2-breed crosses. Two papers are included in this publication giving the results obtained thus far. Feedlot performance and carcass data were available for only the spring pig crop, but both spring and fall farrowed litters were included in the productivity study. Although this phase of Project 1444 will be repeated during 1973 and the data now available are too limited to make many definite conclusions regarding differences in combining ability among Durocs, Hampshires and Yorkshires, marked increases in productivity were realized when Duroc and Hampshire gilts were mated to boars of different breeds to produce 2-breed cross litters.

During the winter of 1971, 210 purebred and 2-breed cross gilts were mated to produce 2-breed and 3-breed cross litters. One-third of these gilts were slaughtered 30 days after breeding to evaluate differences in ovulation rate and early embryo development. The remainder of the gilts will start farrowing in March. Another group of purebred and 2-breed cross gilts will be selected from the fall 1971 pig crop and bred during May and June to produce 2-breed and 3-breed cross litters in the fall. These matings will provide information on differences between purebred and crossbred dams and between 2-breed and 3-breed cross pigs, and information on the importance of maternal influence in determining the recommended crossing sequence.

In this project all the purebred boars and gilts used to produce the purebred and 2-breed cross litters at Fort Reno come from the seedstock herds at the Experimental Swine Farm at Stillwater. New bloodlines and rigid selection was practiced during 1971 to keep the genetic base as broad as possible and to change the composition of the herds. Eight boars and 54 gilts from each of these three breeds will be selected and taken to Fort Reno from each of the two farrowings in 1972.

Publications

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- Addison, C. E., I. T. Omtvedt and L. E. Walters. 1971. Net ⁴⁰K count and carcass measurements in swine. *J. Anim. Sci.* 33:194. (abstract)

- Moss, James M. 1971. Relationship of condition score and sow weight with preweaning traits in swine. Master's Thesis. Okla. State Univ. Library.
- Omtvedt, Irvin T. 1971. Performance of two-breed crosses involving Durocs, Hamps and Yorks. Okla. Swine Short Course Proceedings, Stillwater. Pages 1-5.
- Omtvedt, Irvin T. 1971. Influence of sex on performance in swine. Okla. Swine Short Course Proceedings, Stillwater. Pages 6-9.

Dairy

Feed Flavors In Milk

M. S. Borges, O. P. Pryor and J. B. Mickle

Undesirable flavors in milk cause large monetary losses to Oklahoma dairy farmers each year. Among the most prevalent of these are feed flavors (including those caused by wheat pastures), oxidation (often called flat, cardboard, or metallic), and rancidity (called fishy or bitter). Lipase, an enzyme present in cows' blood and milk, has long been thought to cause rancid flavors; and recent evidence in the literature indicates that this enzyme might also be related to oxidized flavor and perhaps to feed flavors as well (1).

The purpose of the present study was to relate changes in the energy level of a cow's feed to the lipase activity in her milk. These feed changes also were studied in relation to changes in the charge on the milk proteins as measured by fractionation on DEAE cellulose. In preliminary work involving one Holstein cow, the animal first was fed a ration calculated at 100 percent of her "normal" energy requirements according to Morrison's Standards in a restricted roughage ration. This ration consisted of 28 lb of concentrate and 15 lb of average quality alfalfa hay. After two weeks, the cow was changed to a "maintenance" ration containing about 60 percent of her energy requirements. This ration consisted of 16 lb of concentrate and 20 lb of hay. After about three weeks on this ration, the milk developed a strong odor with a flavor sometimes described as "oxidized" and at other times as "strong feed." During this time, lipase