

Hormone improves weanling pig performance

NEWARK, DE. — In modern swine confinement systems, piglets are often weaned at four weeks of age, with some producers weaning even earlier in order to reduce lactation feed costs and rebreed sows sooner. Piglets weaned so young usually experience a five to 10 day setback in growth — a period of either no gain or actual weight loss. One explanation could be that at these ages their digestive systems aren't yet capable of handling a new diet.

Experiments over the last 15 years on rats and mice have shown that at about two weeks of age these animals start to develop the intestinal enzymes required to digest solid food after weaning. Development of these enzymes is triggered by cortisone, a glucocorticoid released in the adrenal gland in response to stress. By injecting the animals with one of two compounds — hydrocortisone (HYD), a synthetic glucocorticoid, or ACTH, a natural hormone which stimulates production and release of glucocorticoid — scientists have been able to induce digestive enzymes in rats and mice at about five days of age instead of 20.

While working on his doctorate at the University of Illinois, Dr. Richard P. Chapple, a specialist in swine nutrition at the University of Delaware, designed an experiment to see whether it was possible to overcome the growth setback in young piglets by injecting them with HYD and ACTH to stimulate early production in digestive enzymes in the gut in preparation for a weanling diet. He reported on his findings at the annual meeting of the American Society of Animal Science, August 7 to 10, at the University of Missouri, Columbia, MO.

He first established acceptable levels of HYD and ACTH for young pigs. Then he compared the effects of these hormones on growth rate at different weaning ages.

The study involved 21 litters of piglets — seven litters each weaned on day 14, 21 and 28 of lactation. Within each litter, piglets were assigned to three treatment groups. Two of the groups received either ACTH or HYD injections four and two days before weaning. The third group was used as a control and received no injections. Within treatment and weaning age, pigs were grouped by weight into four pens upon weaning and fed a corn-soybean meal diet containing one percent lysine.

Response to the injections varied depending on the age of the pigs at weaning. Those weaned at two weeks which had received HYD began to eat sooner, and 65 percent began gaining weight within the first week. Not only did they maintain their weight advantage over the other two groups, but they also had a significantly higher survival rate (88 percent compared to only 57 percent for the control and ACTH treatments).

In three and four-week-old pigs, HYD improved feed intake and weight gain the first week after weaning. Thereafter, in three-week-old pigs weight gains were similar regardless of treatment. In four-week-old pigs, after the first week HYD actually depressed gains compared to the other two groups. Chapple said this could be because hormones were injected on the basis of weight at the time of injection. These older pigs were heavier and so received more HYD, which has been shown to be detrimental at higher doses. He also noted this effect in

preliminary studies of dosage levels.

Chapple said it is not clear whether the improved growth rate observed immediately after weaning in pigs injected with HYD resulted from enhanced digestive enzyme capacity, as observed in earlier studies, or from an undetermined effect of HYD on the pigs' food intake control mechanism, which may have stimulated earlier feed consumption. In the study, only growth was measured and no attempt was made to look at small intestine development along the

way, so this question could not be answered.

Solving the problem of arrested growth or weight loss after early weaning would benefit swine producers two ways — it would reduce now feed costs, and shorten the interval between farrowing and rebreeding.

"The lactation diet is the most expensive one in the sow's breeding cycle," Chapple said. "Cutting lactation time in half could drastically reduce your feed bill and speed the arrival of the next litter."

"I think HYD has potential for

alleviating the setback period after weaning, but dosage and timing of application must be worked out to prevent the detrimental effects observed with higher dosage levels," the scientist said. "Its use could also permit producers to wean earlier."

He said other cortisone compounds might be less detrimental than those used in this study and he plans to investigate them. "Once we understand how these glucocorticoids affect the small intestine and pancreas, we may be able to come up with other compounds that are more effective."

Maple Lawn peach festival set

GATCHELLVILLE — Maryland and Pennsylvania craftsmen dominate the artistic flare of the Peachilicious Labor Day Weekend Harvest Festival at Maple Lawn Farms for the tenth straight year using the peach as decoration and inspiration in their long line of wares. Over 25 booths have been sold to date inside the Craft Barn with more available inside the new Maple Lawn Farms Farm Market that should be completed by Sept. 1 for the three-day event.

Running Sept. 1, 2 and 3, the festival features peaches on trees, in baskets, in foods, beverages and crafts. So far the artisan attendance includes: The Warner Family Crafts with Christmas decoration; Gladys Locke with fold art and Nora Stremmel's bath set sewing. Craftsmen Mary Delp and Charlotte Baker, Joanne Myers, Mary Wise and the McKendrie Church Women, Charlotte Finnegan and Charlotte McCauley will man tables with stitching, pine

cone and corn cob art, dolls, and fur.

Fabric painting is the forte of Ealora Hollan, while Ailean Detter compliments her oil paintings with peachy bar-be-que. Paul Kauffman expands his collection of exotic sea shells and handsome wood carvings. Other wood workers include Homer Seibert, D & D Creations and Louise Harden who paints on wood. The lapidary of the Kermit Stong family returns, while Strawberry Pail

makes its first appearance.

The Craft Barn is open noon-6 p.m. daily with musical entertainment by Hour Glas running 1-6 daily. Pony rides for the children, picking in the Cresthaven orchards and taste testing oodles of peach foods will round out the activities over this Labor Day extravaganza. Craftsmen may contact Gail McPherson for applications as long as spaces remain. Deadline is Aug. 24. Call 717/382-4878.



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