

Gizzard Size Linked To Broiler Problems

DIFFERENCES in the weight of gizzards and in the separation between the glandular stomach and the gizzard may be the key to solving some of the problems of producing cage-reared broilers.

Research indicates that cage-reared broilers receiving a basal diet like that used in commercial operations, have significantly lighter gizzards, when expressed as a percentage of body weight, than do floor-reared broilers on litter diets. The separation between the proventriculus (glandular stomach), and the gizzard is also less prominent in caged broilers on the basal diet.

Nutritionist Leon F. Kubena, and his associates, working at the ARS South Central Poultry Research Laboratory, Mississippi State, Miss., have discovered that gizzard size is influenced by diets containing ground litter or ground oak shavings. The gizzard, the muscular posterior stomach of chickens, grinds and crushes coarse, heavy food particles for better digestion.

Gizzard size may have some effect on

injuries to cage-reared broilers. Problems encountered with cage-reared broilers include broken bones, leg problems, breast blisters, and body fat content during meat production; and fatty liver syndrome, cage fatigue, brittle bones, and shell problems during egg production.

Dr. Kubena's research, conducted in an environmentally controlled house, involved commercial broilers of both sexes. All broilers were fed a basal diet containing 23-percent protein with a metabolizable energy value of 3,306 kilocalories per kilogram of diet for the first 4 weeks. During the second 4 weeks, the diet consisted by 21-percent protein with a metabolizable energy value of 3,372 kilocalories per kilogram of diet.

Test groups consisted of floor-reared and cage-reared broilers fed only the basal diet, cage-reared broilers fed a basal diet plus 3-percent ground litter, and cage-reared broilers fed a basal diet plus 3-percent ground oak shavings.

In each trial, at 8 weeks of age, approximately 30 males and 30 females

were randomly selected, weighed, and their gizzards removed. The gizzards were then cleaned with the lining intact and immediately weighed.

Analysis of variance for gizzard weight was performed by Arcsine Percentage Transformation (tabular conversion to percentiles), for gizzard weight as a percentage of body weight.

Cage-reared broilers on the 3-percent litter diet had significantly heavier gizzards (3.85 grams greater) than the cage-reared broilers on the basal diet. Both groups had gizzard weights lower than those of the floor-reared broilers.

The cage-reared males receiving the diet with 3-percent ground shavings had

gizzards equal in weight to the floor-reared males on the basal diet, while the cage-reared females on the diet with 3-percent ground shavings had gizzards heavier (.71 grams greater) than the floor-reared females on the basal diet.

Increases in gizzard weight in the floor-reared broilers and the cage-reared broilers on 3-percent litter or ground shavings diets might be a developmental response of muscle tissue produced by the physical features of the ground litter or shavings, Dr. Kubena said. It is also possible that physical exercise might be a factor, since the caged broilers are more confined than the floor-reared broilers.



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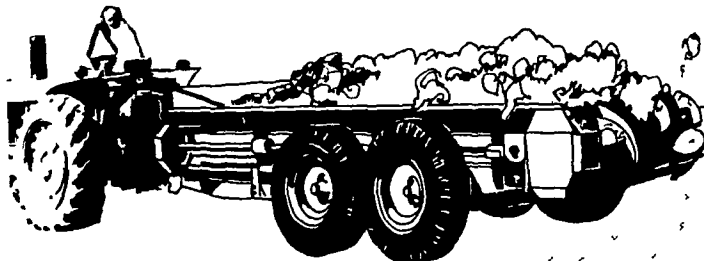
A seminar on hedging farm products has been scheduled for 8:00 p.m. on Thursday, September 12, at the Lancaster Stock Yards auction pavilion. The seminar will be conducted by representatives of the Merrill Lynch brokerage firm.

Dwayne Swarts, a broker with the firm, said that the public is invited to sit in on the seminar. More information can be had from Swarts by calling him at 717-232-8611, extension 207.

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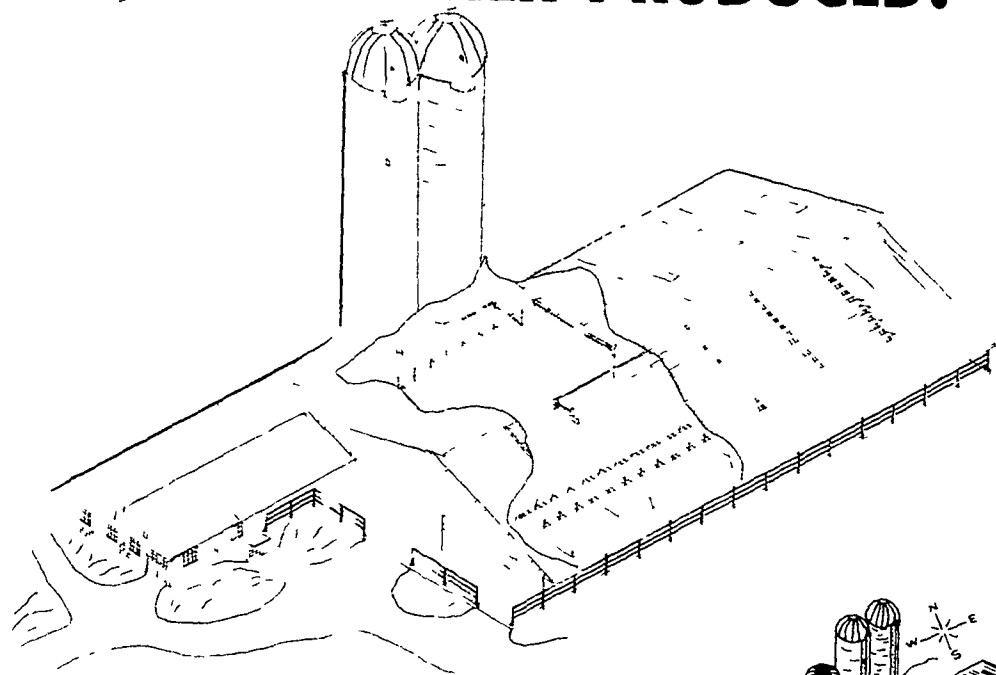
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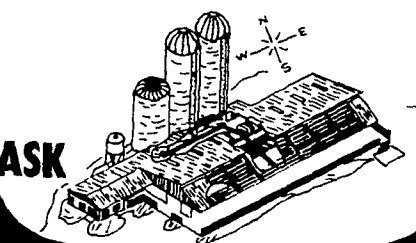
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