

Broiler Production

Alabama Amends law For Dead Poultry Disposal

The poultry industry must constantly be aware of its stewardship to the environment. Disposal of animal waste and mortalities is a daily concern for Alabama poultry producers. Carcasses that result from mortality due to natural occurrences must be properly disposed of, not only to maintain environmental quality of the farmstead

but more importantly to maintain biosecurity for the flock.

In an effort to keep its poultry growers ahead of environmental regulation, the Alabama Board of Agriculture has recently amended the present rules governing the disposal of dead poultry. The newly amended rules prohibit construction of new disposal pits after July 1, 1996, on existing poultry farms, as well as on future poultry farms.

Burial pits that exist before July 1, 1996, can continue being used. However, in the future the routine use of burial pits as a method of mortality disposal on Alabama poultry farms will be phased out. In cases where large quantities of birds have died due to structural failure and/or heat losses, the state veteri-

narian will still allow burial. The intent of the new law is that pits no longer be used for the disposal of routine, daily mortalities. Alabama is not the first state to take such actions. Many other states already prohibit use of burial pits.

Alternatives for proper disposal of mortalities are composters, incinerators, and existing rendering plants. A large portion of dead birds in Alabama are presently being composted. Most of the remainder are being handled by incinerators and rendering techniques.

Auburn University Departments of Poultry Science and Agricultural Engineering stand ready to help growers make the transition. An array of printed material is available to help poultry producers become familiar with environmen-

tally safe methods for dead bird disposal. For more information or to obtain Extension publications on carcass disposal contact John Blake (334-844-2640) or Jim Donald (334-844-4181).

Other agencies are also available to assist operators in sizing, construction, and location of composters. Also available are loan and cost-share programs for taking this environmentally sound course of action.

For the following Extension publications on carcass disposal, contact John Blake or Jim Donald.

Circular ANR-580, "Poultry Waste Management And Environmental Protection Manual"

Circular ANR-558, "Dead Poultry Composting."

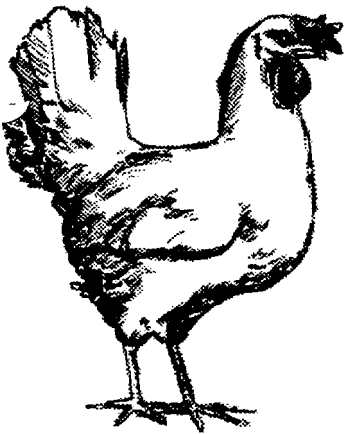
Circular ANR-604, "Construction Of A Dead Poultry Composter."

Circular ANR-980, "Frequently Asked Questions About On-Farm Poultry Carcass Composting."

Circular ANR-981, "Installation And Use Of Incinerators."

Circular ANR-804, "Mini-Composters In Poultry Production."

Circular ANR-850, "Questions And Answers About using Mini-Composters."



AU Notes

Thanks to those individuals who have given their time in efforts to secure funding for a Poultry Science Building on the Auburn University Campus. We are grateful for your support and realize that this project cannot succeed without your help. Funding levels continue to strengthen as industry pledges are added to the federal matching funds promised. A broad-based industry and allied industry campaign will begin soon and efforts are underway to secure state legislative funds in the present session. Hopefully the momentum is building to make this project a reality.

Dead bird disposal is again in the news as the construction of new disposal pits is prohibited after July 1. For further details, see the article in this issue, "Alabama Amends Law For Dead Bird Disposal," by John Blake and Jim Donald.

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Circular ANR-914, "All Economic Evaluation Of Dead-Bird Disposal Systems."

Circular ANR-923, "Rendering-A Disposal Method For Dead Birds." circular ANR-955, "Fermentation Of Poultry Carcasses."

Circular ANR-926, "Broiler Waste Management Planning."

Circular ANR-839, "Broiler Litter Storage."

Poultry By-Product Management Handbook.

This information was provided by John P. Blake of the Poultry Science Dept. and James Donald of the Agricultural Engineering Dept. at Auburn University.

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Current Concepts In Broiler Production is a publication of the Alabama Cooperative Extension System with the cooperation of the Department of Poultry Science at Auburn University. This publication is designed to provide new and emerging concepts and information to those involved in broiler and breeder production.

Information on management, feeding, and disease will be compiled from research underway at Auburn University, as well as from other sources. New technologies and practices will be highlighted as they become available.

Livehaul Effects On Broiler Carcass Quality And Yields

Maintaining a steady supply of live broilers to the processing plant requires a team approach between the production and processing phases. Target weights, livehaul distances, catching crew schedules, livehaul equipment, plant shifts, line speeds, and plant holding shed conditions must be considered in order to maintain process efficiency with the least economic losses. Any one of these preslaughter events can profoundly affect final broiler condition and quality. The objective is to minimize mortality, plant contamination, shrink, and yield losses while maintaining carcass quality and grade during this transitional period.

Implementing feed withdrawal programs at the farm level (usually 4 to 5 hours with water available until catching) allows clearance of the upper digestive tract. The subsequent time spent in confinement (in coops, cages, or drawers) during livehaul and yardtime in the plant finalizes the gut clearance (usually 4 to 5 hours). The extent of live shrink losses that occur with feed withdrawal, livehaul, and plant holding have been correlated primarily with duration of preslaughter withdrawal time and environmental temperatures.

During preslaughter fasting, when the nutrients available to the bird fall below the amount needed

for growth and maintenance, the bird will start to draw upon its stored energy. Liver glycogen levels are depleted within 6 hours of fasting. As fasting continues, the energy requirement for maintenance is met by burning fat and, to some extent, protein reserves. Lack of water during this fasting period also results in moisture and electrolyte losses. These losses are perpetuated with extremes in macro- and microclimate (temperature and humidity) surrounding the birds.

Recent research trials at Auburn University focused on the effects of transportation stress (livehaul) on carcass quality and deboning yields of male and female broilers at two ages (39 and 53 days). Two diverse strain-crosses (Ross x Ross and Peterson x Arbor Acres) were reared to light (4 pounds) and heavy (6.3 pounds) weights under standard commercial conditions. After 4 hours of feed withdrawal (water and lights were available), birds were placed in coops that were either kept stationary (10 hours) or subjected to active transportation (6 hours, followed by 4 hours of preslaughter rest). Shrink losses, whole carcass, and deboning yields (4 and 28 hours post-chill) and carcass defects that contribute to downgrading were determined.

Following is a synopsis of this research:

1. Four hours of feed withdrawal with access to water and light resulted in weight losses that were similar among the strain-crosses and sexes, but significantly lower at 53 days (1.9 percent) as compared to 39 days (2.5 percent).

2. Weight losses during the subsequent 10 hours averaged 4.8 percent at both ages, but were significantly higher on birds transported (6 percent) than those kept stationary (3.6 percent). This difference was attributed to convective heat loss associated with livehaul.

3. Chilled WOG yield losses due to livehaul stress were 3 percent at 39 days and 5 percent at 53 days. Although yield losses were distributed evenly among the carcass parts after deboning, breast fillet (5 percent) and tender (8 percent) yields were affected the most at 39 and 53 days.

4. Percent moisture uptake during chilling and subsequent weepage and cutting losses during deboning were not altered by the stresses of livehaul.

5. Regardless of market age and body weight, both strain-crosses and sexes responded similarly to livehaul.

6. Contrary to expectations, stationary confinement resulted in higher incidences of bruising (drumstick at 39 days; wing, back,

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Alabama Grains Test Clean For Detrimental Mycotoxins

Grain surveys conducted by researchers in Auburn University's College of Agriculture provide a picture of grain quality over the last 2 years with reference to mycotoxin contamination. Separate surveys looked at mycotoxin contamination of samples of corn and wheat, two feed grains important to Alabama's poultry producers. The results of these studies indicate that the last two growing seasons have produced grain crops in Alabama that were healthy and generally free from damaging mycotoxins.

Since corn accounts for about 25 percent of the cost of production, it is not surprising that poultry producers are concerned with the quality of corn that they buy.

In a recent study conducted at Auburn, Alabama and Midwestern corn samples were screened for a number of mycotoxins.

Only a few of the corn samples showed measurable aflatoxin levels, and these were 10 ppb or below. Levels under 20 ppb are not considered detrimental to poultry.

Mycotoxins associated with the *Fusarium* molds are a common problem in corn. Mouth lesions are one of the most often seen symptoms of these toxins.

Fumonisin, T-2, and zearalenone were measured in this study as markers of *Fusarium* mold activity. Only trace amounts of T-2 (one mycotoxin associated with mouth lesions) were detected in corn samples collected during the last 2 years. Fumonisin levels, although more common (at 1-30 ppm), were

well below levels expected to lower poultry performance (greater than 100 ppm). Zearalenone, considered a marker of mold activity in poultry feeds, was found at similarly low levels. There were no differences between local and Midwestern corn samples, indicating that the corn crop showed few problems for the last several years.

Current studies are looking at mycotoxins in samples of corn screenings to determine whether damaging levels have been concentrated in this feedstuff during the screening process.

A similar study, conducted on samples of wheat from all the major wheat producing counties in Al-

abama, found low levels of aflatoxin (0.74 ppb), fumonisin (5.08 ppm), T-2 (12.04 ppb), zearalenone (26.98 ppb), and deoxynivalenol 0.72 ppm). There was little difference between regions of the state and all samples were well under accepted safe values for the various mycotoxins.

However, this study showed that *Fusarium* mold spores were present in 96.5 percent of the wheat samples (this is also true of corn), indicating that the opportunity is there for mold growth and mycotoxin problems if storage conditions and handling methods are not optimum.

This information was provided by J. B. Hess, R. A. Shelby, and P. L. Mask of Auburn University's College of Agriculture.

Research Shorts

Recent research of interest to poultry managers

1. Jindal, V., A. L. Waldroup, R. Forsythe and M. J. Miller. 1995. Ozone and improvement of quality and shelf life of poultry products. *Journal of Applied Poultry Research* 4(3): 239.

Ozone introduced into chill water reduced bacterial populations on chicken drums and extended shelf life up to 2 days. Bacterial population reductions were more pronounced in the chill water than on the drums themselves.

2. Coelho, M. B., and J. L. McNaughton. 1995. Effect of composite vitamin supplementation on broilers. *Journal of Applied Poultry Research* 4(3): 219.

Broiler live performance, carcass characteristics, and profitability were improved with increased vitamin levels when multiple stressors (used Jitter, bird density, coccidiosis challenge, *E. Coli* challenge, fat peroxide level, and diet density) were applied.

3. Martinez, D. F., and A. G. Gernat. 1995. The effect of chopped computer and bond paper mixed with wood shavings as a Jitter material on broiler performance. *Poultry Science* 74(8): 1395.

Chopped paper alone or mixed with shavings did not affect body weights, conversions, or mortality. Litter moisture levels were unchanged among litter sources with enclosed drinker systems.

4. Reis, L. H., P. Feio, L. T. Gama, and M. C. Soares. 1995. Extra dietary calcium supplement and broiler breeders. *Journal of Applied Poultry Science* 4(3): 276.

Coarse-ground limestone given as a supplement to breeder hens in the afternoon improved egg specific gravity and hatchability. Limestone was fed at 4.4 lbs/1000 birds from 43 weeks of age.

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and drumstick at 53 days), broken wings (both ages), and breast trims (53 days) as compared to birds transported.

7. Blood chemistry analyses indicated dehydration, hemoconcentration, increased tissue damage, membrane permeability, and shifts in metabolism (lipolysis and gluconeogenesis) as a consequence of transportation stress.

This information prepared by S. F. Bilgili and E. T. Moran, Jr., Dept. of Poultry Science, Auburn University.

We would like to compile an updated list of individuals interested in receiving *Current Concepts In Broiler Production* on a regular basis. If others in your organization would like to receive this publication, please fill out this form and return it to:

Joe Hess
251 Animal Sciences Building
Department of Poultry Science
Auburn University, AL 36849-5416

Name: _____

Address: _____

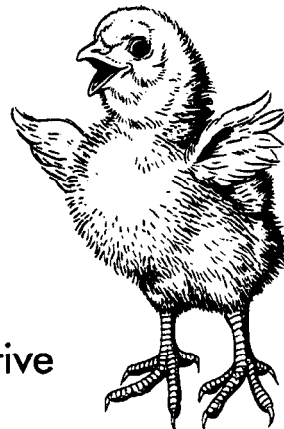
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