Management Tips for Temporary Storage of Broiler and Turkey Litter

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Published by: North Carolina Cooperative Extension Service
Publication Number: CD-17
Last Electronic Revision: March 1996 (JWM)

North Carolina's broiler and turkey production industries generate about 1 million tons of litter consisting of manure and wood shavings annually. This litter represents a valuable resource when properly handled and utilized. The most frequent usage involves land application at recommended crop fertilization rates. The total annual volume of litter contains 27,000 tons of total nitrogen, 30,000 tons of phosphorus (P2O5), and 18,000 tons of potassium (K2O), plus micronutrients worth $27,000,000 as a 0 replacement for commercial fertilizer.

A broiler grower with two houses having a combined capacity of 50,000 birds per flock and growing five flocks per year could save over $9,000 per year in commercial fertilizer costs by optimum handling and utilizing the litter. A custom applicator might charge this grower less than $4,000 to clean the houses and apply the litter to crops or grassland. If this same grower owns land adjacent to one of the state's designated nutrient-sensitive watersheds, he may also be eligible to receive $1,500 from the N.C. Agricultural Cost-Share Program for Nutrient-Sensitive Waters. The counties with qualifying areas are: Rockingham, Caswell, Person, Granville, Guilford, Alamance, Orange, Durham, Chatham, Wake, Bertie, Northampton, Hertford, Gates and Chowan. This program described in the N.C. Agricultural Extension Service publication, Conservation Cost-Sharing for Nutrient-Sensitive Water sheds, CD-16, by Hoag and Barker, provides further incentives for the grower to apply litter at recommended rates. Therefore, it makes good economic sense for the grower to make the most efficient use of the litter for fertilizer. The grower, however, may not have enough land to spread all the litter properly or be able to coordinate house clean-out with times when he can spread the litter directly onto cropland. Given these situations, the grower should first seek to contract with a neighbor or other potential buyers who can use the litter when the houses are cleaned. Other uses for litter besides...
crop fertilization which should be explored include selling the litter as compost or to cattlemen as by-product feed.

There will be times when growers must temporarily store or stockpile the litter between house cleanout and the time the litter is either land spread or moved off-farm. Properly planned, stockpiling can be an alternative which allows more flexibility in litter management. Improper management, however, not only results in loss of an economic resource due to reduced fertilizer value but presents the potential to reduce water quality when the leachate or litter solids from the pile are carried to surface or ground waters.

Runoff and leaching from stockpiles and fields where litter has been over-applied can become an acute problem in the denser broiler and turkey producing areas of the state. Information for determining proper rates of litter application to land for fertilization may be obtained from NCSU Publication No. EBAE 111-84, Livestock Waste Sampling, Analysis, and Calculation of Land Application Rates, by Barker.

The following tips are recommended to conserve nutrients and minimize environmental effects when litter must be temporarily stored:

1. Stockpile the litter on high ground which is well-drained and not subject to ponding or surface erosion and is located at least 100 feet from flowing streams or drainage ways.
2. Stockpile on an impermeable base such as well-compacted clay, when possible, to minimize leachate infiltration into the soil.
3. Do not locate the pile closer than 100 feet to a source of drinking water.
4. Cover the pile with a polyethylene sheet held in place with old tires, similar to the cover on bunker silos, to prevent rainwater from mixing in the pile and producing excessive leachate;
5. Route surface drainage into an infiltration terrace at least 100 feet long or into an overland flow filter area at least 50 feet long seeded with fescue, orchard grass, or coastal Bermuda grass over seeded with ryegrass.
6. Operate litter removal equipment on dry firm ground to minimize soil disturbance.
7. Do not locate the pile closer than 150 feet to a production house or dwelling to control diseases and to avoid the threat of fire in case of spontaneous combustion within the pile.
8. Practice recommended fly and rodent control measures around the production houses and in the vicinity of the litter stockpile.
9. Remove the litter stockpile as soon as possible and immediately renovate the site and seed to grass.
10. Never merely "dump" litter with the sole intention of "just getting rid of and forgetting it."

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