

Poultry Waste Analysis Report Templates
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North Carolina Senate Bill 1217 signed into law in 1996 requires poultry growers of farms with over 30,000 birds to sample poultry litter within 60 days of land application, whether the litter goes directly from the poultry house to the field or if litter comes out of storage for field application. A copy of the poultry litter waste analysis report should be provided to the farmer and/or landowner and any third party applicators. The waste analysis report is similar to a feed tag, or, more appropriately, a fertilizer label - it tells you the nutrient content of the material. These reports are to be kept for three years and provided upon request to regulating authorities such as the North Carolina Department of Environment and Natural Resources' Division of Water Quality (along with other records such as land application data included on DRY1, DRY2 and DRY3 forms).

The most commonly and economically used laboratory testing for North Carolina poultry growers is through the North Carolina Department of Agriculture and Consumer Services (NCDA&CS) in Raleigh. While the price of analyzing a submitted sample was raised by one dollar to \$5.00 in 2005, over \$20 of information is provided when compared to commercial fees. Common grower use and uniformity of NCDA&CS poultry litter waste analysis reports make it possible to provide a consistent and easy to use format for assisting poultry growers and litter users with understanding the numbers on their report results. Review of poultry litter samples submitted to the NCDA&CS lab are not on equal percentage to swine farms, despite the requirement by law. Not being able to easily understand and use the report results for litter application is suspected to be part of the reason. It is also suspected that reports generated are filed and probably not properly used during field application of litter.

Standard book values or computer generated default values of litter nutrient content are guidelines and similar to common sense knowledge practiced in the field, such as: two tons per acre litter application rates pre-plant for a general soil type. The waste analysis results of material being land applied can help a farmer better utilize the nutrients in litter. Given the current higher commercial fertilizer costs, the nutrient content value of poultry litter is approaching over \$40 per ton, excluding the value received from the benefits of increasing soil organic matter and encouraging soil earthworm and microorganism populations. With the high price of oil, and thus, high price of commercial nitrogen sources, using a litter analysis can reduce a farmer's crop fertilizer input expenses. The application life of a field receiving multiple applications of poultry litter can be extended by monitoring and adjusting the amounts of litter applied phosphorous when used in conjunction with soil test results. This can translate into more efficient and cost effective litter transportation expenses and avoid phosphorous overapplication of fields closest to poultry houses and/or litter storage.

A review of statewide NCDA&CS poultry litter waste analysis reports over the years will reveal nutrient content variations of almost 40 percent. This is due in part to: feed formulations of different companies, bird age/weights, feed ingredient sources, use of enzymes, etc. A comparison of one grower's vigilant litter sampling over 5-10 years also showed a 40 percent variation in nitrogen content and a slightly less than 30 percent variation in phosphorous content - up and down, not necessarily consistently declining. On-farm natural variations of litter nutrient content exist with whole house clean-out litter, vs. between flock cake crustings, vs. stored litter that has composted.

An idea from a series of data interpretive templates used for evaluating dairy cow production records was borrowed to assist growers understanding and interpreting poultry litter waste analysis reports when land applying litter. Much information is orderly packed onto a report form, but for most growers and land applicators, it is a bunch of numbers. By laying an 8.5 x 11 inch template with cut-out sections and notes explaining result values over top of a report printout, a grower or applicator will more quickly and easily understand the content of the material they are land applying.

For example: One template focuses on the nutrient, nitrogen. A cutout square on the overlay template points to the report results section with arrows explaining the breakdown of the types of nitrogen that make up the total nitrogen content of the litter (ammonia nitrogen, nitrate nitrogen, organic nitrogen). Brief notes on the template also explain why the total nitrogen content of litter may be 72 units of nitrogen per ton, but only 36 units are “plant available” at the time of litter application.

Another cutout on the overlay template highlights the recommendations section and explains the difference between surface applied litter vs. soil incorporated litter. Much of this information is taken from NCDA&CS information sheets located at: <http://www.ncagr.com/agronomi/pwshome.htm> and North Carolina Cooperative Extension factsheets.

An informal survey of some targeted growers more familiar with using soil and waste analysis reports, revealed that most did not know what some of the symbols on the report form represented. For example: the letter K for potassium and that it corresponds with potash, the third number listed on a fertilizer bag analysis. Also, various reporting units are used on the results form (ppm, percentage, pounds). Often, a grower wants to know how their litter “stacks up” to other growers’ litter so, ranges and statewide averages are noted on the overlay templates. This helps when interpreting micronutrient results such as a grower wanting to know if their litter moisture, pH, zinc and/or copper contents would be considered within normal ranges.

Provided at this conference is an example template for you to review and offer feedback. Similar overlay templates are being prepared for interpreting and using soil test analysis report forms from NCDA&CS. Initially, about 200 copies will be distributed to growers through a North Carolina Cooperative Extension Service grant. After receiving feedback and editing, a second batch of templates will be printed and distributed, possibly with the financial assistance of the poultry industry. There may be limited advertising space for supporters making template printing and distribution to growers possible. A complete set of templates of three for waste and three for soil reports is estimated to cost about \$28 per set.

For copies, more information and to offer feedback, contact: James Cochran, Area Poultry Extension Agent, PO Box 2280, Lumberton, NC, 28359, (910) 671-3276.