

# Soil and Broiler Litter Testing Basics

## Nutrient Management

Almost all commercial-scale poultry operations in Mississippi are required by the Mississippi Department of Environmental Quality to have an environmental operating permit that includes a Nutrient Management Plan (NMP). Nutrient management concerns the amount, source, placement, form, and timing of nutrient and soil amendment applications to ensure adequate soil fertility for plant production and to minimize harm to the environment. NMPs account for the nutrients available from the soil and other sources, crop nutrient use, soil and crop management practices, environmental risks, and documentation of how you use the soil.

Broiler chickens are grown on the floors of single-story barns covered with 2 to 6 inches of bedding material, such as wood chips or rice hulls. Periodically, a total house cleanout replaces the bedding material, mixed with the animal manure (litter), with new material. Wet surface material (cake) is removed every few weeks between each group of grown chickens. Both litter and cake commonly are land-applied at rates to adequately fertilize the plants and protect the environment as determined by the NMP process.

## Soil Samples

In developing an NMP, you should include site-specific soil testing and litter analysis. Soil submission forms and boxes are available at your [local MSU Extension office](#). Visit the [MSU Extension Soil Testing Laboratory website](#) for additional information. When the MSU Extension Service Soil Testing Laboratory analyzes your samples, you will receive fertility recommendations for each soil sample, according to the crops you indicated on the soil testing form. You will also receive nutrient levels, pH, and lime requirements. The Soil Testing Laboratory does not routinely analyze for nitrogen in soil samples. Normal turnaround time is 4 to 7 working days once the laboratory receives the samples. The forms and soil sample boxes are available from your local Extension office. The cost is \$8 for each sample. Commercial soil testing services are also available in Mississippi.

## Litter Samples

Litter sampling follows the same principles as soil testing, except you use a house instead of a field. Divide the house into five equal sections. Take a sample from three places across the house in each section. Do not include underlying soil in the samples. Blend the 15 samples, then submit a portion for analysis to the Mississippi State Chemical Laboratory. Submission forms are available at local Extension offices or from the State Chemical Laboratory. Check out the [Pricing Guide](#) for information on sample submission and prices. Usual turnaround time is 7 to 10 working days. Commercial laboratories are also available for litter sample analysis. Contact your local MSU Extension office for commercial laboratory information.

## Additional Information

More information on nutrients in Mississippi soils, nutrient management, and environmental issues is available from MSU Extension and can be found online at <http://extension.msstate.edu/publications>.

- [Publication 2647 Nutrient Management Guidelines for Agronomic Crops Grown in Mississippi](#)
- [Publication 2878 Nutrient Content in Broiler Litter](#)
- [Publication 3681 Best Management Practices for Plant Nutrient Management](#)
- [Publication 3726 Micronutrients in Mississippi Soils and Plant Nutrition](#)
- [Publication 3727 Calcium and Magnesium in Mississippi Crop Production](#)
- [Publication 3961 Phosphorus in Mississippi Soils](#)
- [Publication 3962 Potassium in Mississippi Soils](#)
- [Publication 3964 Nitrogen in Mississippi Soils](#)
- [Publication 3968 Useful Nutrient Management Planning Data](#)

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Reviewed by **Corey Bryant**, PhD, Assistant Professor, Delta Research and Extension Center, from an earlier revision by Larry Oldham, PhD, Extension Professor (retired), Plant and Soil Sciences, and Keri Jones, PhD, Laboratory Coordinator, Plant and Soil Sciences, from a previous edition co-authored by Craig Coufal, PhD, former Assistant Extension Professor and Poultry Specialist, Poultry Science.



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