

# Maximizing profits using poultry litter as fertilizer

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Poultry litter being incorporated into the soil during “disking,” a process that turns the soil and pulverizes it so that the litter can be mixed into it. Click the image for more information about it. Credit: Agricultural Research Service

A Mississippi-based Agricultural Research Service (ARS) researcher has learned that using poultry litter as fertilizer can help cotton growers in the Southeast maximize profits.

Poultry litter (chicken manure, spilled feed, excess feathers, and other poultry-house materials) contains nitrogen and phosphorus—both important crop nutrients. Applying poultry litter to the soil also recycles some of the tons of litter generated annually by poultry operations throughout the United States, says Haile Tewolde, an ARS agronomist at Mississippi State.

While more farmers are using poultry litter as [fertilizer](#) these days, there is little information about the amounts [cotton](#) growers should use to maximize profits.

Tewolde and his colleagues applied poultry litter to cotton at seven different rates on two farms by scattering the litter with a commercial fertilizer spreader. They measured cotton lint yields for three years at one farm and five years at another. For comparison, they also measured yields where they applied standard rates of [synthetic fertilizer](#). They factored in the costs for the litter and the market price of the cotton to determine optimal rates for earning a profit.

The researchers found that the most profitable rate is not the same as the [rates](#) that produced the highest yields because of cotton's current low cost. Maximum yields were achieved at 9,000 to 12,000 pounds of litter applied per acre. Yet, profits were highest at only 7,000 pounds applied per acre.

The results give growers specific recommendations to avoid applying more litter than needed, which could pollute waterways. The results also highlight [poultry litter](#)'s capabilities as a fertilizer.

Provided by Agricultural Research Service

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