

Broiler litter not likely to affect northern bobwhite or wild turkeys, but...

Broilers are chickens raised for meat. Many landowners use litter from broiler houses to fertilize pastures for increased forage production. A commonly asked question by those concerned about wildlife, particularly northern bobwhite and wild turkey, is whether or not it is safe to spread broiler litter on fields frequented by quail and turkeys since they are susceptible to some diseases prevalent among chickens. One of those diseases is histomoniasis (blackhead disease). Histomoniasis is caused by a protozoan parasite, *Histomonas meleagridis*, which often is found in cecal worms of domestic chickens and turkeys. Bobwhites or wild turkeys may contract the disease by ingesting cecal worm eggs infected with histomonads while foraging for insects, seed, or other plant parts. Birds infected with histomoniasis develop lesions on both the liver and ceca and may appear lethargic and depressed. Northern bobwhite are moderately susceptible to the disease (low to moderate mortality rates), whereas wild turkeys are severely susceptible (moderate to high mortality rates).

Spreading broiler litter on pastures as fertilizer is not likely a problem for wild bobwhites or wild turkeys for two reasons. First, histomoniasis is far more prevalent in pen-reared quail or turkeys as opposed to wild birds because pen-reared birds tend to be infected with *Heterakis gallinarum*, the cecal worm of domestic chickens and turkeys. This cecal worm is an excellent vector of histomoniasis. Wild bobwhites and turkeys commonly are infected with another species of cecal worm, *Heterakis isolonche*, which is not a good vector of histomoniasis. The second reason broiler litter is unlikely a problem for wild bobwhites or turkeys is that broilers are killed at an early age, usually 5 – 7 weeks. The life cycle of the cecal nematode, *Heterakis gallinarum*, requires about 40 days. Therefore, many of the broilers do not live long enough for the cecal nematode to complete its life cycle and enable the bird to be infected with the parasite. However, some broiler breeds may not reach slaughter weight until they are older than 6 – 7 weeks, and it has become more common among poultry producers to re-use poultry litter in pullet houses for 2 – 4 cycles, which could increase exposure to cecal worms and the blackhead protozoan. Currently, landowners should not be overly concerned about spreading broiler litter on fields with regard to disease implications for wild quail and turkeys.

Increased concern may be warranted for using manure from mature chickens (breeders) because cecal nematodes have adequate time to complete their life cycle in mature chickens. However, research has not indicated any population-level effects associated with histomoniasis and breeder litter in Tennessee.

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