

# Control External Parasites of Poultry

A number of insects, ticks, and mites attack poultry either by sucking blood or by feeding on the skin, feathers, or scales. Mites and lice are the most destructive external parasites of the state's poultry. Occasionally, other pests, such as fleas and bed bugs, infest poultry and cause problems. Recently, there have been increased reports of bed bugs in chicken houses, especially boiler-breeder houses.

Ectoparasites, or parasites that feed on the outside of the body, may cause considerable loss to a poultry operation, particularly by lowering egg production. Generally, serious pest problems are more likely to occur on laying flocks than on broilers. Infestations of external parasites on poultry can be economically controlled with good sanitation and proper use of insecticides.

## Mites

In Mississippi, several species of mites may be found on poultry. The northern fowl mite is the most serious pest infesting poultry, becoming more of a problem in cool weather. This pest spends its entire life on the animal, sucking blood and irritating the bird. Most mites on birds are located around the vent area (anal opening). During control procedures, it is very important to direct liquid insecticide applications with high pressure to the vent area.

Mites are often noticed first on the eggs or are detected by egg handlers. Check birds for mites by examining the base of feathers around the vent. The mites produce a rough and matted appearance of the feathers in this area because of a buildup of dried blood and mite excreta (feces).

Although mites spend their entire life cycle on the birds, they can live off the birds for several weeks if temperature and humidity are suitable. For this reason, a house vacated for less than 3 weeks may still have mites, which will infest newly placed birds. Mites can also enter a house on egg flats or other equipment from an infested location.

Determining when to treat birds for mites requires consideration of several factors. If the birds are scheduled to be removed soon, treatment may not be economical. Mite populations build up faster on young birds than on

older birds. Because mites are more active in cool weather, infestations typically increase in fall and decrease in spring.

Chicken mites live in secluded areas (cracks and crevices on roosts, cages, nest boxes, walls, or ceilings) during the day and crawl onto the birds at night to feed. While on the birds, the mites pierce the skin and suck blood. Heavy infestations of this mite cause birds to have pale combs and wattles. The entire life cycle of the chicken mite can be completed in as little as 10 days. Broiler flocks usually do not have these mites in serious numbers because the short grow-out cycle prevents buildup.

Chicken mites are seldom a problem in caged-layer operations because there are few places to hide and lay eggs. They can be serious problems in breeder houses where nest boxes and slats offer ideal hiding places. These mites may go unnoticed unless you examine the birds at night. Determining mite population levels on birds is difficult because they scatter evenly over the bird's body. A better method is to examine cracks and crevices for mite presence.

It is not necessary to treat the birds to control chicken mites, but treating the premises must be thorough to be effective. The chicken mite can live several weeks without a blood meal. For this reason, treat vacant houses thoroughly before introducing new birds.

Scalyleg and depilating mites are occasionally found on poultry in Mississippi, particularly in private farm flocks. Scalyleg mites primarily infest the legs and feet, where they tunnel in the upper layers of skin. A severe infestation causes a crusty outer covering on the legs and feet. Depilating mites burrow into the skin at the base of the feathers, causing infested birds to pull out their feathers.

## Lice

Several species of lice may infest poultry. The chicken body louse is the most common. Others can be found occasionally but are seldom found in significant numbers. These minor lice species share the same biology and habits as the chicken body louse and can be controlled with the same strategies. All lice on birds are chewing lice; none suck blood. They constantly irritate the birds with their claws and mouthparts

as they crawl over the bodies of the birds. Lice rarely leave infested birds except to transfer to other birds.

Body lice may build up huge populations on birds. Large infestations can cause loss of body weight and a significant drop in egg production. The entire life cycle can occur in as little as 3 weeks. Lice eggs are laid in masses and stick to the base of feathers. When examining birds for lice, examine the whole body. Lice do not circle around the vent as northern fowl mites do. The adult lice are large ( $\frac{1}{8}$  inch long) and yellow. The white egg masses at the base of the feathers are the best indicators of a lice infestation. Like northern fowl mites, lice populations build up in cooler weather. As with northern fowl mites, consider the time of year and age of the flock when making control plans.

## Bed Bugs

Once considered mostly a human pest, bed bugs can be serious pests of poultry. In the last decade, bed bug infestations have steadily increased and spread among human habitations and will likely soon be a significant pest in the poultry industry.

They can be extremely difficult to get rid of. Bed bug behavior is much like that of chicken mites. They usually feed on birds at night and only for a short time. The rest of the time they hide in cracks and crevices. They can be a problem in caged-layer operations and also in breeder houses because of the availability of numerous daytime hiding places.

Bed bugs in large numbers may consume sufficient blood from a flock to cause weight loss, lowered egg production,

and lowered feed efficiency. One study showed a 10 percent egg production loss due to bed bugs. Bed bugs can survive several months without a blood meal, depending on temperature and humidity. So, they can easily survive in an empty house between flocks.

The best way to check for bed bugs is to use a flashlight to inspect cracks, crevices, slats, and nest boxes carefully. Look for the bugs themselves and/or black spots of bed bug excrement on eggs, boards, and slats, especially around nests.

Please refer to Extension Publication 3668 *What to Do About Bed Bugs in Poultry Houses* online at [extension.msstate.edu](http://extension.msstate.edu) for up-to-date bed bug control. Generally, the best control method is a high-pressure spray treatment of the premises, thoroughly treating cracks and crevices. There are products labeled for spraying with birds present, although you can probably best do this in an empty house between flocks. We recommend a second treatment 10 days after the first treatment to control those that hatch after the first treatment.

## Other Poultry Pests

Several other pests may occasionally attack poultry, especially free-roaming farm flocks. Several species of fleas and ticks are common occasional pests. One such pest is the sticktight flea, which remains attached to the head and is sometimes mistaken for tick larvae. Although control procedures for minor pests are not covered in this publication and pesticide labels do not list minor pests, many of the same insecticides used to control lice and mites will control minor pests.

**Bird treatments for northern fowl mites, chicken mites, lice, and depluming mites.**

Material and Formulation	Mixing Directions	Amount per Bird	Days to Slaughter	Remarks
Tetrachlorvinphos & dichlorvos (Ravap) 23% & 5.7%	1 pt/6 gal water	1 gal/100 birds	0	Do not treat more often than every 14 days.
Tetrachlorvinphos (Rabon) 50% WP	2 lb/25 gal water	1 gal/100 birds	0	
Permethrin (Several brands)	1 qt/50 gal water	1–2 oz/bird	0	
Carbaryl (Sevin liquid and dust)	Follow label instructions		7	
Spinosad (Extinosad or Elector)	Follow label instructions		Follow label recommendations	
Sulfur dust (Several brands)*	Use in dusting stations or hanging bags in cages			Questions about use of sulfur may be directed to your corporate veterinarian or extension specialist.

\*Recent studies have shown that dust bags containing sulfur are effective in controlling northern fowl mites (Murillio, A.C. and Mullen, B.A., 2016, *Journal of Economic Entomology*, 109: 2229-2233).

Listed products include some of the common active ingredients and are provided as examples only. These tables include only a few of the products available for poultry ectoparasite control. Insecticide registrations are constantly updated, with some being changed, others approved, and still others canceled. Always read and follow label directions.

**Premises treatments for northern fowl mites, chicken mites, lice, and depluming mites.**

Material and Formulation	Mixing Directions	Amount to Spray	Days to Slaughter	Remarks
Permethrin 25% WP	6 oz/34 gal water	1 gal/700 sq ft	0	
Other branded or generic permethrin formulations with different % active ingredient	Follow label recommendations	Follow label recommendations	Follow label recommendations	
Tetrachlorvinphos (Rabon) 50% WP	2 lb/25 gal water	1 gal/100 sq ft	0	
Tetrachlorvinphos (Rabon) 3% D	Ready to use	1 lb/100 sq ft	0	
Tetrachlorvinphos & dichlorvos (ravap) 23% & 5.7% EC	1 qt/12 gal water	1 gal/700 sq ft	0	
Bifenthrin 7.9% (Talstar P or various generics)	0.5–1.0 fl oz/gal	1 gal/1000 sq ft	0	Do not apply as a general spray when birds are present. Crack and crevice treatment allowed around birds. Do not contaminate food, feed, or water.
Carbaryl (Sevin liquid)	2 lb/25 gal water	1–2 gal/1000 sq ft	7	Do not apply as a general spray when birds are present. Crack and crevice treatment allowed around birds. Do not contaminate food, feed, or water.

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Premises treatments for northern fowl mites, chicken mites, lice, and depluming mites.

Material and Formulation	Mixing Directions	Amount to Spray	Days to Slaughter	Remarks
Cyfluthrin (Tempo) 20% WP	19 g/2 gal water	1 gal/500 sq ft	0	Do not apply with birds in the building. Allow spray to dry before placing birds.
Lambda-cyhalothrin (Demand) 9.7% micro-encapsulated	0.2–0.4 fl oz/gal water	1 gal/1000 sq ft	0	No interior treatment with birds present. Do not contaminate poultry food, feed, or water.
Bifenthrin 7.9% (Talstar P or various generics)	0.5–1.0 fl oz/gal water	1 gal/1000 sq ft	0	Do not apply as a general spray when birds are present. Crack and crevice treatment allowed around birds. Do not contaminate food, feed, or water.
Cyhalothrin (StandGuard)	Follow label recommendations			
Carbaryl (Sevin liquid)	2 lb/25 gal water	1–2 gal/1000 sq ft	7	

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The information given here is for educational purposes only. References to commercial products, trade names, or suppliers are made with the understanding that no endorsement is implied and that no discrimination against other products or suppliers is intended.

Publication 3800 (POD-06-25)

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Produced by Agricultural Communications.

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Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. ANGUS L. CATCHOT JR., Director

