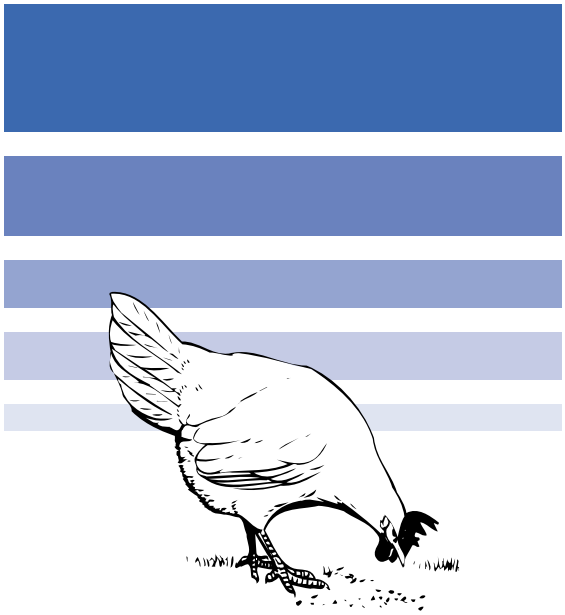
Eliminating Mites in Poultry Flocks

R. Scott Beyer
Extension Specialist, Poultry Science
Kansas State University

Donald Mock
Extension Specialist, Medical and Veterinary Entomology, Kansas State University



Kansas State University
Agricultural Experiment Station and
Cooperative Extension Service

Mite infestations on poultry vary from a nuisance to causing death depending on the severity of infestation. These ectoparasites reduce production of laying hens and cause decreased feed intake and weight loss. Other visible indications of mite infestations may include dirty feathers, scabs and pinkish combs. Any signs of mites on a show bird will usually result in disqualification by the judge.

Mites are most commonly transferred to chickens, turkeys and gamebirds through wild birds such as sparrows, starlings, swallows and pigeons roosting or nesting in the poultry house. Because visiting birds can transfer deadly diseases and parasites, try to prevent wild birds from resting or roosting in your small flock's house. Rodents have also been known to transfer mites to poultry. Mites can live off the host for several weeks to months; thus, clothes, hands and egg flats are minor sources of mite transfer. County and state fairs, or anytime a bird from your flock comes into contact with other birds, should be considered another means of mite transfer.

Early detection of mites by regular monitoring of the flock is the best control of mite infestation. The chart on page 2 will help determine the type of mite infestation in your flock. Microscopic evaluation and differentiation of an actual mite from your birds is the most accurate way of determining the type of infestation and, therefore, appropriate treatment. Once the mite has been identified, an appropriate treatment can be determined. These treatments may involve spraying pesticides and chemicals on birds, nests, litter or in the building.

Northern Fowl Mites

Northern fowl mites are found on the birds usually in the winter and cooler months of fall and spring. They are very small and brown or light red in color. The vent area is the specific site of infestation, but males tend to have a more scattered infestation. The vent area will appear dusty or dirty, which is caused by the mite castings. Caged layers should be sprayed or dusted from underneath the cage in order to penetrate the vent feathers. For an effective treatment, spray two times with half doses, thirty minutes apart, to ensure that the vent region has been thoroughly saturated with the appropriate pesticide. Floor birds with northern fowl mite infestations can be bunched into a corner and treated with the same spray techniques, again, aimed at the vent area. For very small flocks, simply dipping each bird in a tank of the full dose spray mixture can be very effective.

Chicken Mites

The red chicken mite is more difficult to identify and treat because the mites are usually only on the birds at night. They are small and grey in color, but may appear red if they have filled with blood after feeding on the bird. The best treatment involves cleaning and disinfecting the poultry house.

Mites can be located along cracks and crevices of the roost areas and poultry house, and eliminated by spraying pesticides in these infested areas two or three times for several weeks. Spray roosts and other equipment in the house. Remove nesting material and spray nest boxes inside and out. Allow time for drying before adding new nesting material.

Scaly Leg Mites

Scaly leg mites are tiny, round, flat-bodied mites that can be found under the scales of the infested bird's feet and lower legs. They burrow under the skin, causing the legs to look aged, swollen and deformed. If left untreated, the skin will crack and may cripple the bird. Treatment involves dipping the legs in linseed oil and wiping them clean, then coat with petroleum jelly. Pesticides can be mixed (at spray dilution rates) with medicinal oils and applied topically to infected areas. These techniques should be repeated once or twice a week for several weeks. Do not use fuel oil, kerosene, motor oil, or other petroleum products on the birds at any time. Most poultry judges consider a scaly leg mite infestation to indicate a lack of proper management by the exhibitor.

Depluming Mites

Depluming mites are closely related and similar in appearance to scaly leg mites. They infest the bird's skin at the base of the feathers and are most common in small, noncommercial flocks. As with scaly leg mites, once on the host they seldom leave. Their feeding activity causes intense itching to which the infested bird responds by picking at the mites and plucking feathers from the infested sites. Self-depluming and apparent molting at the wrong time of year may indicate infestation by depluming mites. Secondary problems that may be associated with depluming mites are bacterial skin infections and cannibalism.

No insecticide is labeled specifically for control of depluming mites, but the permethrin spray and dust (or bird dipping) treatments used to control northern fowl mites may also control depluming mites.

Treatments

The table on page 3 summarizes approved chemicals and pesticides to use in mite infestation on poultry. Please check the tables carefully for your specific conditions. All product labels must be read and followed for effective treatment of target pests, appropriate use in management practices and to avoid contamination of feed, water and eggs. The trade names listed are provided for your convenience in locating the product. K-State Research and Extension does not endorse any one product. Other products not cited may be available.

Types of Poultry Mites

	Birds infested	**Site of infestation**	**Detection**	**Life cycle**	**Infestation season**	**Host-free survival**
Northern Fowl Mite	Caged layers, range turkeys and pheasants	Only on host vent, tail, back and neck	Day or night	4 days	Fall, winter and spring temperatures	3–4 weeks
Red Chicken Mite	Non-commercial flocks and \ or roost situations	Scattered on host, off host, cracks and crevices of poultry house	Night only	10 days	Summer	4–5 months
Scaly Leg Mite	Non-commercial flocks	Under scales of lower legs on host only	Day or night	2 weeks	Any season	4–6 weeks
Depluming Mite	Non-commercial flocks	Feather follicles of skin	Day or night	2 weeks	No information available	No information available

Insecticides	*Trade Names and Formulations**	*Treatment Method***
Red Chicken Mite (poultry mite, roost mite)—if your small flock is raised on bedding, remove the litter to a compost pile, treat the premises and replace with new shavings. Remember to spray area cracks and crevices where the mites may hide.		
carbaryl	Sevin 50W, Sevin 80S, Sevin 4F, Sevin XLR Plus 5% Sevin dust	RS, BS RS PD, BD
coumaphos	Co-Ral 25% WP	RS
tetrachlorvinphos	Rabon 50 WP	RS, BS, RP, DB
tetrachlorvinphos / dichlorvos	Ravap EC	RS, BS, RP
carbaryl / sulfur	Purina Poultry Dusting Powder	BD, DB, PD
permethrin spray	Permectrin II E	RS, BS
permethrin dust	Insectrin GP Livestock and Poultry Dust	BD
Northern Fowl Mite—Be sure to spray the birds from underneath near the vent, otherwise the pesticide will roll off the feathers and loose effectiveness.		
carbaryl	Sevin 50W Sevin 80S, Sevin 4F Sevin XLR Plus 5% Sevin Dust	BS RS,BS RS BD
carbaryl / sulfur	Purina Poultry Dusting Powder	PD, BD
coumaphos	Co-Ral 25% WP	RS, BS
permethrin spray	EC Formulations of Atroban, Ectiban, Insectaban, Insectrin, Permethrin or Permectrin II E; or Permectrin WP	BS
permethrin dust	Permectrin Dairy Cattle & Swine Dust, Permectrin Livestock & Litter Dust	BD
tetrachlorvinphos	Rabon 50 WP	BS
tetrachlorvinphos / dichlorvos	Ravap EC	BS
Other treatment methods:		
Roost paints—For poultry that sleep on roosts, roost painting is especially helpful in combating chicken red mites and bed bugs (although bed bugs are not on roost paint labels) which hide by day and come to the poultry at night. Concentrate on cracks and crevices where roosts meet walls or where pieces of the roost join one another. Bird contact with roost-painted roosts aids in control of lice.		
tetrachlorvinphos	Rabon 50 WP	RP
tetrachlorvinphos / dichlorvos	Ravap EC	RP
Pest strips—Small plastic strips soaked with pesticide to give residual control of mites are available. These strips can be hung at the entrance to nesting boxes, above roosts, or in cages where the birds will occasionally come into contact with them. For further information, contact: Car-Mac Products, P.O. Box 69094, Houston, Texas 77269-0954 (800-424-8108)		

* Capital letters after product names indicate type of formulation. E = emulsion; EC = emulsifiable concentrate; F = flowable; GP = general purpose; S = soluble; W = wettable; WP = wettable powder

**Application methods: BD=bird dusting; BS=bird spraying; DB=dust bath box; PD=premise dusting; RP=roost paint; RS=residual spraying

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-2387 April 1999