

Lice (Article is in two parts. Second part is from Will Winter DVM)

Lice are classified into two main orders, described in more detail below. Both orders are fairly specific in their host relationships. They spend their life cycle on their host, and are spread by direct contact.

Chewing lice (Order Mallophaga) feed on feathers, hair, skin, and other external tissues of animals. They are often referred to as bird lice, because they thrive in bird feathers and may puncture the skin at the base of feathers. *Bovicola bovis* is the species that most often affects cattle.

Sucking lice (Order Anoplura) are blood-sucking insects that are found on mammals only, not on birds. Important parasites, they live on mammal blood and can transmit diseases. Legs are good at grasping the hair of their hosts. Their mouthparts have styles that pierce the skin and small hooks hold on while they are feeding. Please see the more detailed description of the life cycle of lice in the article (B) about lice on goats.

According to Organic Valley Co-op, in a webpage entitled Controlling External Parasites on the Organic Farm (5), important lice pests of cattle include one species of chewing louse and four species of sucking lice. They affect cattle by causing irritation, blood loss, loss of appetite, and decreased gain. Factors associated with infestations are close confinement and cold weather. Control measures are similar for chewing and sucking lice. The life cycle of cattle lice is about 24 (3) to 30 (12) days. Reproduction increases in winter, such that young dairy animals can be heavily infested with lice (3). Eggs hatch in about 7 days (10). Because most treatments will not control eggs, they will need to be repeated to kill the new eggs that hatch out. Check animals at 14-day intervals to determine if the infestation has been eliminated or brought under control (3).

Prevention is the most important. If an infestation appears, treat it promptly with the control options that are allowed in certified organic production. Most of the ideas below come from the Organic Valley reference (5).

Prevention:

- Prevent infestations by isolating and observing any new animals for three weeks.
- Prevent direct contact between healthy animals and those that are infested with lice.
- Provide good quality feed with appropriate mineral supplements. Offering minerals free-choice allows cattle to meet their own needs (5). Provide free choice kelp to young stock in winter to reduce lice (9).
- Reduce animal stress by following all the requirements in the organic standards, especially including access to the outdoors, pasture for ruminants, fresh air, direct sunlight, shade, shelter and the opportunity to exercise.

Treatment:

- A thin coat of vegetable oil in the affected area will suffocate insects (5) and can probably kill insect eggs. Another resource suggests raw linseed oil applied with a stiff brush (8). The application technique sounds effective for application. Since the effect of oil is physical, any natural vegetable oil should work and be allowed.

- Soap dissolves the waxy cuticle (5)(9) or exoskeleton of lice. Repeat in one week to get the lice from newly hatched eggs. Please note that this is not a recommendation for special lice shampoos. Any type of soap will harm insects. Just choose one that will not be too irritating to your animals.
- Liquid enzymes dissolve the insect's exoskeletons (5). Be sure these are natural enzymes derived from non-pathogenic bacteria or fungi, or from edible, non-toxic plants, and not genetically modified (11)
- Diatomaceous earth has naturally pointed edges that pierce insects' exoskeletons (5). Be sure to use natural, non-heated forms (11), not the type that is sold for pool filtration (5).
- Use garlic powder as a topical treatment and feed as a tincture. Garlic contains allicin that acts as an insect repellent and antimicrobial (5).
- Rub white hellebore root on the affected area, or make a liquid mix of 4 quarts boiling water and 4 oz. white hellebore and wash the animal's affected parts when the mix has cooled down (7).
- Various other herbal preparations are described in (8) including pyrethrum powders; Essential oils such as anise, camphor, eucalyptus, pennyroyal, pine rosemary & sassafras: 1 part of each with 2-3 parts olive or other oil. Rub in well. (Grainger and Moore, 1991); Wash morning and evening with powdered lobelia seeds (2 oz. in 1 qt. boiling water). Let stand a few hours and apply with sponge. (Dadd, 1897, p. 196); Raw linseed oil applied with a stiff brush (Alexander, 1919, p. 74 and Udall, 1943). Please check with your certifier to be sure all of the ingredients mentioned in these treatments would be allowed.

The website of Farmer Research in the Northeast describes the problem of lice as follows, and proposes a research project. The results are not yet posted. You may wish to contact this group to follow up on what they have learned.

“The proposed research project will test three different treatments for lice infestations in dairy and beef heifers. This is a problem with livestock in the winter, especially pubescent and young adult animals. The usual treatment for organic farmers is to wait until the animals can go out in the spring sun and the condition clears up. But when the condition is more pronounced it can cause reduced weight gain and irritation to the animal's skin to say nothing of their increased stress level. This increase in stress can be debilitating, leading to other health problems. At the last Animal Health Study Group meeting we had, lice was listed as one of winter's problems. Also whenever I visit livestock farmers in the winter this problem is expressed. The producers requested a study of some treatments for lice that would be permitted in a certified organic system. The proposed study will compare three treatments and a control. The treatments include a homeopathic remedy (30c *Staphysagria*), a powder of four parts neem and one part turmeric, and Pyganic, a commercial product that recently became labeled for livestock treatment. Each farmer will also keep at least two control animals. Treatments will be given weekly and repeated three times after the lice infestation is recognized in the winter of 2004-2005. Results will be tabulated in the next week. If there are no positive responses from the treatment, then the protocol will be repeated.”

<http://attra.ncat.org/calendar/question.php/2008/02/25/p5024>

Sulfur is an amazing mineral supplement, with dramatic results for all external parasites including flies, ticks, lice, mites (mange), even ringworm (a fungus). Sulfur compounds are abundant in many cruciferous vegetables, certain weeds and specifically garlic. Want to rid your dogs of fleas? Hit them with garlic! Same for us with mosquitoes, Lyme-bearing ticks, gnats, sand fleas, and other cooties. Sulfur has an impact to rid animals of internal parasites as well, plus it's an essential part of the immune system, for example, you can't make glutathione peroxidase without it.

Unlike insect resistance to drugs and chemicals, they don't ever get "immune" to the horrible smell of sulfur that exudes from the pores of the skin when it is consumed (think garlic breath). Don't forget that blast-dosing sulfur-deficient milk cows with free-choice sulfur might make for some smelly milk for a while!

How to get sulfur? Well, there are several ways, any good livestock mineral supplement "worth it's salt" should have adequate sulfur. If you are switching from a cheap source of minerals (most feed store mineral tags I see show a lack of both quantity and quality) you might need to augment the sulfur for several weeks. It's simple, just add 2# of yellow "flowers of sulfur", the common stuff in a bag to every 50# of minerals.

I think the sulfur blocks take too much time away from grazing for most animals and it's hard to get adequate quantity. Jerry Brunetti's FLIES BE GONE (agri-dynamics.com) bagged mineral is over 60% sulfur! We see total knock-downs of fly populations within 3 days. You will see the same results using free-choice sulfur as well.

Not all farm and feed stores carry sulfur, which is too bad. You can always order plenty of bags of 99% pure sulfur from Mike Wichman (wickslivestock.com) and every one of the 12 mineral supplements he sells have adequate sulfur for long-term resistance. Sulfur needs copper, zinc, selenium and iodine to work, and they should be the chelated forms for maximum absorption. Cattle need 6-9 months on a good mineral program before they get fully-saturated. Once there, the need for blast-dosing with anything almost goes away.

I think Pat Coleby's books are genius and should be on every rancher's bookshelf, but it's very easy to do much better with minerals, especially here in the US. Her 4 element recipes are OK if that is all you can get, but the really good mineral companies balance and tweak over 30 minerals, you might need cobalt, or chromium, or manganese, and the majority of these are not addressed in her simplified home-made recipes. Making home-made mineral mixes doesn't really make much sense nor does it justify the time required to do so.

By the way, livestock that are not heavily parasitized usually will ignore free-choice sulfur. However, as soon as they are fly-struck or tick-ravaged they will crave it in huge quantities. Keep it on hand for emergencies. Likewise, healthy animals do not get massive attacks of parasites, so always bear in mind that binge-dosing with sulfur is a "band-aid", or an "emergency" treatment, so always seek the cause behind the cause behind the cause when you see excess parasites or any other chronic condition.

Below is written by Will Winter

Sulfur is an amazing mineral supplement, with dramatic results for all external parasites including flies, ticks, lice, mites (mange), even ringworm (a fungus). Sulfur compounds are abundant in many cruciferous vegetables, certain weeds and specifically garlic. Want to rid your dogs of fleas? Hit them with garlic! Same for us with mosquitoes, Lyme-bearing ticks, gnats, sand fleas, and other cooties. Sulfur has an impact to rid animals of internal parasites as well, plus it's an essential part of the immune system, for example, you can't make glutathione peroxidase without it.

Unlike insect resistance to drugs and chemicals, they don't ever get "immune" to the horrible smell of sulfur that exudes from the pores of the skin when it is consumed (think garlic breath). Don't forget that blast-dosing sulfur-deficient milk cows with free-choice sulfur might make for some smelly milk for a while!

How to get sulfur? Well, there are several ways, any good livestock mineral supplement "worth it's salt" should have adequate sulfur. If you are switching from a cheap source of minerals (most feed store mineral tags I see show a lack of both quantity and quality) you might need to augment the sulfur for several weeks. It's simple, just add 2# of yellow "flowers of sulfur", the common stuff in a bag to every 50# of minerals.

I think the sulfur blocks take too much time away from grazing for most animals and it's hard to get adequate quantity. Jerry Brunetti's FLIES BE GONE (agri-dynamics.com) bagged mineral is over 60% sulfur! We see total knock-downs of fly populations within 3 days. You will see the same results using free-choice sulfur as well.

Not all farm and feed stores carry sulfur, which is too bad. You can always order plenty of bags of 99% pure sulfur from Mike Wichman (wickslivestock.com) and every one of the 12 mineral supplements he sells have adequate sulfur for long-term resistance. Sulfur needs copper, zinc, selenium and iodine to work, and they should be the chelated forms for maximum absorption. Cattle need 6-9 months on a good mineral program before they get fully-saturated. Once there, the need for blast-dosing with anything almost goes away.

I think Pat Coleby's books are genius and should be on every rancher's bookshelf, but it's very easy to do much better with minerals, especially here in the US. Her 4 element recipes are OK if that is all you can get, but the really good mineral companies balance and tweak over 30 minerals, you might need cobalt, or chromium, or manganese, and the majority of these are not addressed in her simplified home-made recipes. Making home-made mineral mixes doesn't really make much sense nor does it justify the time required to do so.

By the way, livestock that are not heavily parasitized usually will ignore free-choice sulfur. However, as soon as they are fly-struck or tick-ravaged they will crave it in huge quantities. Keep it on hand for emergencies. Likewise, healthy animals do not get massive attacks of parasites, so always bear in mind that binge-dosing with sulfur is a "band-aid", or an "emergency" treatment, so always seek the cause behind the cause behind the cause when you see excess parasites or any other chronic condition.