

Beef Cattle Handbook



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Lice on Beef Cattle

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Lice are primarily a winter problem. Direct sunshine, rain and self-grooming keep louse numbers low in the thin summer-hair coat of cattle that are pastured in the open.

Cattle lice are small, but they occur by the thousands, or even tens of thousands, on infested cattle. The economic impact of cattle lice is highly variable and does not always correlate with the apparent severity of infestation. Biting and feeding activity of lice irritate cattle, and the irritation intensifies with increasing numbers of lice.

Cattle damage fences, and bruise and scrape themselves, as they rub to relieve itching caused by the lice. Louse-infested animals are under stress and may be predisposed to disease. Blood loss from sucking lice is sometimes severe enough to cause anemia. Louse-induced anemia causes calf abortion and may even result in the death of the infested animal.

The five species of cattle lice found in North America include four that feed by sucking blood. These are the shortnosed cattle louse, longnosed cattle louse, little blue cattle louse, and the cattle tail louse. The fifth species, the cattle biting louse, feeds on skin tissue of cattle.

All cattle lice spend their entire lives as parasites on living cattle. When removed from the cattle, they live a few days at most. The females lay eggs, which they glue to individual cow hairs close to the skin of their host. Immature lice are called nymphs. Each nymph sheds its skin three times as it grows to adulthood. Nymphs resemble adults of the same species in feeding habits and appearance.

Shortnosed Cattle Louse, *Haematopinus eurysternus*

This species (Figure 1a) is seldom a problem on young

calves, but in most parts of the United States it causes more losses to adult beef cattle than do all other lice. Shortnosed cattle lice are often found in and on the ears, along the dewlap and brisket, and on the tailhead.

Adult shortnosed cattle lice are slightly over 1/8 inch long and gray-brown in color. The eggs are hard and bone-white to brown. They require from 9–19 days, usually 12 or 13, to hatching. The nymphs become adults within the next 12 days. Females begin laying eggs after about four days of adulthood. Thus, this species completes a life cycle in about 28 days, although the time may range from 3–6 weeks. About one out of five lice in this species is a male. Males live about 10 days. Females live 15 or 16 days, producing one or two eggs per day.

Longnosed Cattle Louse, *Linognathus vituli*

This species infests calves most heavily. It is often found on mature cattle but seldom in great numbers. Longnosed cattle lice have no specific anatomical site preferences on cattle.

Longnosed cattle lice are bluish-black, slender, and have a noticeably pointed head or "nose." Adults are nearly 1/10 inch long (Figure 1b). Their dark blue, soft-shelled eggs require from 8–14 days to hatch. The egg-to-egg life cycle requires 21–30 days, usually about 25. Females lay about one egg per day.

Little Blue Cattle Louse, *Solenopotes capillatus*

This louse resembles a small, longnosed louse, but has a bluntly-rounded head (Figure 1c). Adults are slightly less than 1/16 inch long. The eggs are similar to those of the longnosed cattle louse but smaller. A cow hair on which

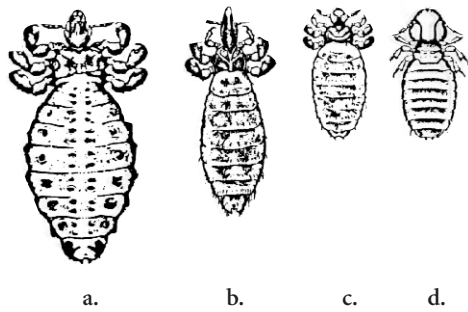


Fig. 1. These figures show the relative sizes and shapes of cattle lice: a) short-nosed cattle louse, $\frac{1}{16}$ inch actual length, b) long-nosed cattle louse, $\frac{1}{16}$ inch, c) little blue cattle louse, $\frac{1}{16}$ inch, and d) cattle biting louse, $\frac{1}{16}$ inch.

an egg of this species is laid is characteristically bent at an angle where the egg is attached. Incubation requires from 9–13 days. Nymphs mature rapidly, and females begin laying eggs about 11 days after hatching. Little blue cattle lice can often be found near the eyes and on the cheeks and muzzles of cattle.

Little blue cattle lice are more common than all other cattle lice in the Mississippi Delta states, the Southeast, and in eastern Oklahoma and Texas. In other states, they are present but usually of minor importance, except on cattle received from endemic areas.

Cattle Tail Louse, *Haematopinus quadripertusus*

Cattle tail lice are closely related to the shortnosed cattle louse, and very similar in size and appearance. They prefer to live on the long-haired portion of the tail, but are also often found on the neck and around the eyes.

Unlike other cattle lice, tail lice are most abundant in late summer to early fall and are scarce throughout the winter. This is often the most damaging species in coastal areas of the South, the Southeast, and southern California, but it is absent to uncommon in the rest of the U.S.

Cattle Biting Louse, *Bovicola bovis*

Biting lice feed on epithelial cells of the skin's surface. The feeding and movement of lice on the skin of cattle cause itching and distress. Cattle biting lice are present on most beef cattle. However, they become more numerous on northern dairy cattle housed for the winter and stanchioned where they cannot lick themselves. The moderate infestations of cattle biting lice typical on unsheltered beef animals occur primarily on the withers, upper parts of the shoulders and ribs, and along the back.

Cattle biting lice are easily distinguished from sucking lice. Adults are about $\frac{1}{16}$ long. The head is nearly round, and two-thirds as wide as the body (Figure 1d). The head and thorax of both adults and nymphs are brownish-amber. Nymphs have pale cream-colored abdomens. The adult abdomen is darkly outlined and has a series of brown crossbars on a pale background. The eggs are pearly white when freshly laid and become

pale brown as the embryos develop within.

The eggs require from 6–11, usually 7 or 8, days to hatch. Nymphs reach adulthood in 12–21 days. Females begin producing eggs three days after becoming adults. A complete life cycle can occur in as little as 3 weeks, but may require more than a month under some conditions. Populations of this species are usually from 95–99% female. Reproduction is accomplished without mating. Each female commonly lays 30–35 eggs during a 4-6-week period. Adults survive as long as 9 or 10 weeks.

Diagnosing Lousiness in Cattle

Often, one of the first signs that cattle have lice is that they rub and scratch themselves against fences, feed bunks, trees, or other objects. In advanced cases, this may result in large patches of bare skin.

Even when cattle are not obviously lousy, it is desirable to inspect them for lice before purchase, or as they are handled for branding, vaccination, or other purposes. By parting the cattle hair with your fingers, you can see if lice and their eggs are present. With practice, only a few seconds are required to examine each animal in several places—neck, withers, brisket, shoulders, mid-back, tailhead, and behind the rounds. Two or more species of cattle lice often occupy the same animal.

“Carriers” or “Chronics” Typically, up to one or two percent of the cattle in a herd may carry extremely high numbers of lice, even in the summer. “Carriers” are most often bulls or older cows in poor condition. A “carrier” cow’s calf is usually also heavily infested. Such “carriers” are unthrifty and perform poorly. Bulls may become “carriers” because their hair is longer and more dense, and their massive necks and shoulders prevent effective self-grooming. When older cows are “carriers” it is probably the result of reduced self-grooming ability and interactions involving the cow’s nutrition, general health, and immune system.

Sucking lice. Cattle sucking lice sometimes congregate in dense patches, which, when they occur on shorthaired sites, may be seen from several feet away. They appear as black or blue-brown spots the size of a quarter or 50-cent piece. Close inspection of these patches reveal individual lice including adults, nymphs, and eggs. Sucking lice spend most of the time with their heads partly buried in the host’s skin as they engorge themselves with blood. In this position, with their abdomens pointing outward from the host’s skin, they cling to the animal’s hair with all six legs. They are usually difficult to disturb, although they are not as tenacious as ticks.

Cattle severely infested with shortnosed cattle lice take on a characteristic “greasy” appearance. This greasy appearance results from crushed, blood-engorged lice and their feces, from blood and serum oozing from wounds made by the lice as they feed, by the cow’s scratching and rubbing, and by the shiny translucence of thousands of living lice packed densely together. When infestations are heavy, lice may often be

seen around the lips and muzzle and around the eyes.

Biting lice. Cattle biting lice are generally less concentrated into discrete groups. However, in heavy infestations, skin areas may become very densely populated by these small, brownish-amber lice. They spend most of their time in a feeding position similar to that of the sucking lice. Biting lice are more readily disturbed and may be quite active, especially when they are numerous and when the weather is mildly warm.

With heavy infestations of cattle biting lice, large areas of a cow's coat may become burdened with several eggs per hair, the bases of the hairs glued together in an inseparable mass.

Louse-induced Anemia, Abortion, Death

Heavy infestations of shortnosed cattle lice have caused severe anemia in cattle. Anemic cattle fail to gain weight, or they may slowly lose weight. They appear very weak and have extremely pale skin around the eyes, muzzle, and udder. Their red blood cells may be reduced to as little as one-half or one-fourth the normal number. Extreme louse-induced anemia causes pregnant heifers and cows to abort.

Anemic cattle have low resistance to disease and to stresses caused by bad weather, shipping, or handling. Such cattle become exhausted and may die if forced to move even 100–300 yards. One or two "carrier" animals may die from louse-induced anemia when a herd of cattle is moved, even when the rest of the herd has only a moderately high infestation.

Ridding anemic cattle of lice usually results in rapid improvement. Complete recovery may be achieved within a month. However, in ridding such cattle of lice, one should remember that they must be handled gently, and may not be able to withstand the stress of dipping or crowding in holding pens or chutes while sprays or pour-ons are applied. Weakened animals are also more readily poisoned by insecticides, especially those with systemic action.

Controlling Cattle Lice

Sanitation. Lice are spread from animal to animal when cattle are in close contact with one another such as during feeding, breeding, or shipping. Also, some lice and louse eggs drop off onto bedding or are rubbed off, along with hair, onto fences and feedbunks. Sucking lice die within a few hours when off the host; but biting lice may live for several days if not exposed to direct sunlight or cold weather, and some of the eggs may hatch. Other cattle may then become infested from contaminated bedding, bunks, sheds, or trucks. For this reason, premises vacated by infested stock should either be treated with insecticide, or should stand empty for 10 days before being used by clean stock.

Newly purchased stock should be isolated and treated for lice before being added to the herd.

Chemical Control. Chemical application methods for louse control include dipping, spraying, pour-ons, spot-ons, and an injectable, as well as dusts and back-

rubbers or self-oilers. Regardless of the application method, most insecticides have little effect on louse eggs. Lice hatching from eggs after a single treatment can rapidly reinfest cattle. For this reason, **a second treatment 2 or 3 weeks after the first is important to kill the newly-hatched lice before they can mature and lay eggs.** Any insecticide is subject to label change or withdrawal at any time. Regulations on some chemicals either prohibit repeat treatments or call for a very long interval between treatments. Therefore, if you are planning to control both grubs and lice in the fall of the year, choose a grubicide that does not prohibit retreatment within 2 or 3 weeks. The second treatment need not be grubicidal and can be made with a less expensive louse control product.

Cattle should be inspected for lice in late fall or early winter. Control measures should be initiated before the lice become numerous—not late in the winter after the damage has been done. In herds with fall calving, calves may be too young to be treated at the time of year when louse control is needed. If left unchecked, lice numbers increase throughout the winter (except for tail lice). High louse populations coincide with a) periods of acute and cumulative winter stress, b) the season when vitamin A is often deficient in cattle diets, and c) the stress of February or March calving. Lousy cattle are much less able to cope with these other stresses.

When cattle are to be treated for lice, it is important to consider what other insecticides or medications have been, are being, or will soon be used on the same animals. Pesticide labels often carry warnings of toxic reactions in livestock as a result of multiple treatments timed too closely together, or combined effects of treatment and medication. This is especially true of the pyrethroids and organophosphates and of greatest concern when using insecticides with systemic action, which are popular in grub-control programs.

If such grubicides are used for louse control after the "safe cut-off date" for grub control, there is risk of choking, bloat, or paralysis as a result of immune response to cattle grubs dying in critical tissues within the animal (See the fact sheet on Cattle Grubs). Therefore, grubicides should be used for louse control only before the "safe cut-off date" or on cattle that have been cleared of grubs by earlier treatment. If these conditions cannot be met, one of the many non-systemic, non-grubicidal louse controls should be used.

In southern regions, the safe grub-treatment period occurs long before the seasonal buildup of lice occurs. In northern states, louse populations develop earlier in the winter and the safe grub treatment time is later so that louse and grub control can often be accomplished simultaneously. In the middle states, simultaneous control of these pests is a common, but somewhat risky, practice that often provides only mediocre control of either pest.

Self-applicating devices, such as dust bags and oilers, apply little or no insecticide to the brisket, belly, and legs. Therefore, such methods seldom achieve more

than 70 or 80 percent control of lice, and will not provide rapid cleanup of established populations. Thorough hand dusting can provide better control, but the labor required is seldom feasible except on show animals.

Dipping or spraying can provide thorough coverage, but should be done only on relatively warm late-fall or early-winter days. To penetrate the heavy winter cattle-hair coats, sprays should be applied at a pressure of 200–250 p.s.i. But, excessive pressure or spraying too closely can injure the animal's skin.

Pour-on, spot-on, and injectable treatments can be highly effective, take little time, and can be performed safely on all but the coldest days. Most such products are grubicides, but a few are not.

For specific recommendations on insecticides and treatment timing for louse control, contact your local county agent, veterinarian, your state university veterinary entomologist, or the product manufacturers.

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