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1963

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Gale B. Mast

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Recommended Citation

Mast, Gale B., "Insect Control on Beef Cattle" (1963). *SDSU Extension Fact Sheets*. 1238.
https://openprairie.sdstate.edu/extension_fact/1238

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Website: extension.sdstate.edu

Phone: 605-688-4792

Email: sdsu.extension@sdstate.edu

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Insect Control on Beef Cattle

In controlling beef cattle parasites, one must select, mix, and apply the proper insecticide with care. Follow the directions exactly as they are given on the label. Never apply more insecticides than recommended. Too strong a mixture can injure or poison stock; too little may not control the pest. Young animals often are more susceptible to overdoses of most preparations.

Use only emulsion concentrates made especially for livestock.

The recommended waiting period after treating until slaughter varies for chemicals. Be sure to check the required waiting periods before selecting the chemical. These waiting periods must be followed or farmers and ranchers are subject to government seizure and may lose their products.

TYPES OF APPLICATION

SPRAYERS

Power sprayers which develop pressure up to 350 pounds per square inch are best. Crops may also be sprayed with these high pressure sprayers by merely adding booms and nozzles. Small amounts of detergent soaps added to the spray will give more hair penetration for better coverage.

"Walk-through" sprayers with multiple nozzles are quick and effective when used with a chute. They are limited in their use and are more difficult to regulate for the exact dosage per animal.

POUR-ON

Pour-on methods are quite new but have been proven very effective. Systemic chemicals are poured in small quantities down the midrib of the back and are absorbed by the animal. This method takes no special equipment and is time saving.

DIPPING VATS

The animals must be moved to the dipping vats but sprayers are more mobile and can be easily moved to the animals. Vats give excellent pest control where large numbers of cattle are gathered at a central location. It is also believed that spraying is not as hard on the animals.

COMMON INSECT PESTS OF CATTLE

CATTLE GRUBS

Cattle grubs cause the loss of millions of dollars each year. Losses occur through (1) injury and loss of weight caused by cattle running to escape the adult flies, (2) injury to the hide by perforation by the grubs, and (3) injury to the meat by grubs, resulting in need for trimming of damaged flesh.

Description of Adult Flies

Adult cattle grubs are flies about the size of worker honey bees and are covered with hair. The fly of the common grub has transverse bands of yellow and white hairs while the end of the abdomen is clothed with reddish orange hairs. The thorax has four shiny, longitudinal lines. They are strong fliers with wing veins of dark brown or black. The legs are covered with black and orange hairs.

The northern grub fly is larger than the common, with the thorax more densely covered with hairs which partly obscure the shiny lines. The abdomen is colored about the same as the common grub fly except the posterior band of hairs is much paler in color and wider. The wing veins are reddish brown and the legs are not as hairy as the common grub fly.

Life Cycle

The life cycles of the two grub species are quite similar. The fly deposits the eggs on the hair, usually on the legs below the dew claws but they may be found on other parts of the body also. The common grub fly lays her eggs in rows of 4 to 14 on a single hair. The eggs hatch in about a week and the young grubs crawl down the hair and burrow into the skin at the base of the hair.

Upon entering the animal's body, the grubs migrate through the connective tissues of the host. The northern grub moves to the back via the spinal canal while the common grub moves through the esophagus to the back. It takes several months for this migration. In the spring the grubs leave the animal through the hide on the back and drop to the ground where they pupate. Later in the spring adult flies emerge from the pupae.

CATTLE LICE

Cattle lice are widely distributed and have been recognized as a pest by livestock growers since early times. In the western range country cattle often become infested very heavily with lice, the degree of infestation varying from year to year with climatic and other conditions. In the farming communities the parasites usually are most prevalent on underfed and poorly housed cattle, although they may occur on animals in good flesh and kept in sanitary quarters.

Ordinarily lice on cattle are not observed until they become so numerous that they cause unmistakable signs of annoyance. Cattle lice feed on the tissues of their host, which causes irritation. Infested cattle try to obtain relief by scratching and rubbing. When a herd is heavily infested it is common to see some of the animals with large areas of skin partly denuded

RECOMMENDED CHEMICALS AND THEIR USE

Pest	Insecticide	Dosage	Minimum days from last application to slaughter	Where and when to apply	Safety instructions—directions, notes, remarks
CATTLE GRUBS	Ronnel—Trolene FM (ET 57)	Feed Mix—30 lbs. Trolene FM with 1,970 lbs. feed	60	Orally in feed for 7 days	Animals should have access to water before and after treat- ment
	Co-Ral Spray	0.5% spray	7	Penetrating spray for thorough coverage	Do not treat animals less than 3 months old or within 10 days of shipping, weaning, or expo- sure to contagious and infec- tious diseases
	Pour-On	½ pt. 4% backline per animal	0	Backline treatment just after heel fly ac- tivity has ceased	
	Ruelene 25 E Pour-On	As labeled	28	Along animal's back	Do not treat sick animals. Cat- tle should have free access to water and feed before and af- ter treatment
CATTLE LICE	Ronnel	1 gal./20 ft. of cable	56	Saturate backrubber or apply with auto- matic backrubbers	Do not use used motor oil
(Backrubbers)	Lindane	0.2% in oil	30	Saturate backrubber or apply with auto- matic backrubbers	Do not use on animals under 6 months of age
	Malathion	1% in oil	14	Saturate backrubber or apply with auto- matic backrubbers	
	Methoxychlor	3% in oil	7	Saturate backrubber or apply with auto- matic backrubbers	
	Toxaphene	5% in oil	28	Saturate backrubber or apply with auto- matic backrubbers	
(Sprays)	Ronnel (Korlan)	0.25% spray water	56	Spray entire animal thoroughly	Dilute only with water
	Co-Ral	8 lbs. W.P. in 100 gals. of water	0	Spray entire animal	Use no more than 1 gal./animal
	Malathion	0.32%-0.50% in water	---	Spray entire animal	
	Lindane	0.03% in water	30	Spray entire animal	
	Methoxychlor	0.5% in water	---	Spray entire animal	
	Toxaphene	0.5% in water	28	Spray entire animal	
	Delnav	.15% in water	---	Spray entire animal	Do not reapply within 2 weeks
	Rotenone	0.12% in water	---	Spray entire animal	
	Chlordane	1 lb./25-50 gal. water	---	Spray entire animal	Do not use on animals being fattened for slaughter
FLY CONTROL					
HORN FLY	Delnav				
HOUSE FLY	Methoxychlor				
HORSE FLY	Toxaphene	Sprays—same as lice above			
MOSQUITO	Malathion				
	Co-Ral				
	Ronnel (Korlan)				

Pest	Insecticide	Dosage	Minimum days from last application to slaughter	Where and when to apply	Safety instructions—directions, notes, remarks
	Vapona	1% oil solution	---	-----	Mist spray with hand or automatic spray equipment at the rate of 1 to 2 fluid oz./animal/day
	Residual spray—See stable fly control				
STABLE FLY	(Sanitation)			Barns, yards, old straw stack butts	
	(Chemical)—See horn fly control above for animal application				
	(Residual control)				
	Dieldrin	1% in water	---	Barn walls, fences, etc.	Residual surface application. Do not contaminate feed or drinking water. Use only with adequate ventilation
	DDT	4-5%	---	Barn walls, fences, etc.	Same as above
	Ronnel (Korlan)	1% in water	---	Barn walls, fences, etc.	Same as above
	Dibrom	1% in water	---	Barn walls, fences, etc.	Same as above
	Malathion	2% in water	---	Barn walls, fences, etc.	Same as above
	Dimethoate	1% in water	---	Barn walls, fences, etc.	Same as above
	Ciodrin	0.3% in water	---	Barn walls, fences, etc.	Same as above
	(Baits)	Materials listed above as well as DDVP, Dipterex, and others may be used in baits. Follow directions on the labels.			
FACE FLY	Vapona (Backrubbers using the above fly control chemical will aid in reducing face fly problems on beef cattle)	1% oil solution	---	-----	Mist spray with hand or automatic spray equipment at the rate of 1 to 2 fluid oz./animal/day
SPINOSE EAR TICK	Co-Ral	0.5% spray or dust	7	In ears	Use small hand sprayer—low pressure. Do not overdose. Do not injure ear
	Lindane	0.2% in oil or water	30	In and around ear	Use spring bottom oil can with soft rubber tip—do not injure the ear. Do not apply over ½ oz. per ear
	Toxaphene	0.5% in water	28	In and around ear	Low pressure hand sprayer only. Do not injure ear
SCREW WORM	Smear E.Q. 335 Smear 62 Korlan Smear	As labeled	---	Apply to wound	
	Co-Ral	0.25% spray or 0.5% dust	7	Apply to wound	

of hair and limited areas bruised and raw from scratching and rubbing.

Cattle may have lice throughout the year but they are most numerous in cold weather when the hair lengthens and animals crowd together.

Some lice feed by sucking blood; these are blue and are called the blue lice. They are found mainly on the head, neck, withers, and on the inside of the legs. Other species chew the skin; these have a reddish color and are a little smaller than the sucking lice. The chewing lice concentrate on the withers and at the base of the tail.

Both kinds of lice lay eggs or "nits" which are fastened to the hairs. They spend their entire life cycle on cattle, producing a generation about every 30 days.

When lice are discovered in a herd of cows, treat the whole herd. If a few lice are left they will soon spread over the entire herd again.

FLIES

Horn flies, stable flies, house flies, horse flies, deer flies, and mosquitoes are all found on cattle in pastures, feed lots, or in sheds. These pests feed on cattle or annoy them and reduce gains in weight during the spring, summer, and fall months.

Horn Fly

The horn fly, smallest of the group, is one of the worst offenders. It is a blood sucker which takes at least two feedings per day. This species of fly may be found by the hundreds on the backs, horns, shoulders, and bellies of untreated cattle during the summer.

In South Dakota the adult flies usually first appear in the second week of June. If undisturbed the flies spend all their time on the cattle except for the short period of egg laying. The eggs are deposited only in fresh manure and hatch into small maggots. After feeding for 3 to 5 days, they pupate in the manure or in the soil beneath it and remain in the pupal stage for 7 days before emerging as adult flies. The entire life cycle may be completed in 10 to 14 days.

Stable Fly

The stable fly is a blood sucker. When cattle are attacked by stable flies, they bunch up, stamp, run, and stand in water trying to escape the painful and annoying bites of these flies. This fly feeds chiefly on the sides and backs. It is not usually an important pest of range cattle but can be a serious pest of small farm herds and feed lot herds.

Adult flies feed on the animals about once daily and stay on the animal just long enough to get a blood meal. After feeding on the animal they rest on nearby objects such as fences, in or on barns.

Because of the short time the stable fly feeds on the animal, treatment of the animal does not give

satisfactory control but will help considerably. The greatest emphasis in the control of stable flies should be placed on sanitation. Since stable flies breed in wet straw, wet feed, and manure, it is desirable to remove these by spreading refuse over the fields where it will dry quickly. Following this, application of a residual spray to barns, fences, and other places where the flies are known to rest will reduce the number of adult flies effectively.

House Fly and Others

The house fly will be found mainly around barns, yards, privies. This fly cannot pierce the skin and suck blood but is an annoying pest and is important primarily because of its unsanitary habits. Use both sanitation and insecticides to effectively control this pest.

Horse flies, deer flies, and mosquitoes can become serious pests of beef cattle. Chemical control will give effective results where heavy infestations are found. Back rubbers are of great help in all fly control if placed in cattle resting areas, or near water where cattle spend considerable time.

Face Fly

This relatively new fly to South Dakota has become a serious pest to livestock in the state. As the common name implies, the adult female flies swarm about the head of the animal and feed on the mucous membranes of the eyes and nose and around the mouth. They may also be found on any location of the animal, feeding on saliva deposits. The male fly is not commonly observed on cattle but is a pollen-feeder on blossoming plants. The face flies feed on animals mainly while in strong sunlight and commonly leave animals that enter a building or shaded area.

The face flies overwinter as adults in sheltered areas. They become pests in homes in winter months.

Other Pests

Spinose ear ticks and screw worms usually are not serious pests in South Dakota but upon occasions localized infestations are found. Chemical control is very important for the control of either pest.

PRECAUTIONS

Insecticides are poisonous; handle and store them with care. Be sure to read the label and follow the directions. Keep children and pets out of the area where chemicals are stored, mixed, or used.

Do not contaminate feed, feed containers, or water troughs.

Destroy all emptied containers so they cannot be used again for any purpose.