

Beef External Parasites

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Beef External Parasite Control

Table 2.2 - Dust Bags

Pests	Active Ingredient [Percent A.I. in Product] (Trade Name)	Insecticide Mixing and Application Information	Precautions
horn flies, lice (aids in control of face flies)	Coumaphos [1%] Dust Permethrin [0.25%] Dust Gardona (lis-isomir)	No mixing is necessary. Install burlap bags or commercial ready-to-use bags of dust in areas where animals must come in contact. Keep bags in place during winter months to aid in control of lice. DUST BAGS MUST HANG 4-6 INCHES BELOW TOPLINE OF CATTLE.	Do not contaminate feed or water.

Table 2.3 - Hand Dusting

Pests	Active Ingredient [Percent A.I. in Product] (Trade Name)	Insecticide Mixing and Application Information	Precautions
horn flies, face flies, lice	Tetrachlorvinphos [3%]	Read label before use. Wear rubber gloves and apply approximately 2.0 oz of dust to the upper portions of the back, neck, and poll, and to the face as an aid in the control of face flies. Rub in lightly to carry the dust beneath the hair.	Do not contaminate feed or water.
	Permethrin [0.25%]	Apply 2.0 oz (6.0 tbsp) of dust per animal by shaker can. Repeat as necessary.	Do not contaminate water, food or feed by storage or disposal. Keep container sealed when not in use.
	Malathion Dust [4%]	For horn flies: apply 4 tbsp on the back and neck. Repeat at 10-14 day intervals. Dust calves lightly. For lice and ticks: dust animal thoroughly. Repeat treatment after 2-3 weeks if needed.	Do not treat calves under 1 month of age. Do not contaminate water.
	Coumaphos [1%]	No mixing is necessary. Apply not more than 2.0 oz per animal. Dust evenly into the hair over the head, neck, shoulders, back, and tailhead. Repeat as necessary but not more than once every 10 days.	Do not contaminate feed or water.
	Zeta-Cypermethrin [0.075%] + Piperonyl Butoxide [0.15%]	Check label for specific application instructions.	

Table 2.4 - Backrubbers¹ and Facerubbers

Pests	Active Ingredient [Percent A.I. in Product] (Trade Name)	Insecticide Mixing and Application Information	Precautions
face flies, horn flies, stable flies, house flies, black flies, mosquitoes, eye gnats, mange mites	Permethrin [11%] (Atroban 11% EC) Permethrin [10%] Permethrin [5.7%] and others	Follow directions according to labels. Use only #2 diesel oil or any approved backrubber base oil.	Read and adhere to all precautions on labels. Do not use motor oil or waste oil on backrubbers. Keep rubbing device charged. Results improve daily with forced use.
face flies, horn flies, lice	Coumaphos Tetrachlorvinphos [23%] and Dichlorvos [5.3%] Dioxathion Phosmet [11.6%] Permethrin [7.4%] + Piperonyl Butoxide [7.4%] Stirofos	Follow directions according to label. Use only #2 diesel oil or any approved backrubber base oil.	Read and adhere to all precautions on labels. Do not use motor oil or waste oil on backrubbers.

¹Backrubbers will suppress cattle lice, but usually do not result in complete control.

Table 2.5 - Sprays

Pests	Active Ingredient [Percent A.I. in Product] (Trade Name)	Insecticide Mixing and Application Information	Precautions
face flies, horn flies, grubs ¹ , lice, screwworms, ticks	Coumaphos	Follow directions according to label. Apply spray at high pressure so as to wet the skin. Use only between August 1 and November 1 for grub control. ¹ Do not use after November 1 unless animals are known to be grub-free, because paralysis or suffocation may result.	Do not apply to sick animals or those less than 3 months old. Do not apply in conjunction with oral drenches or internal medications.
horn flies, lice, ticks	Tetrachlorvinphos [50%]	For horn flies and lice, mix 4.0 lbs product in 75.0 gal water. For ticks mix 4 lb product in 50.0 gal of water. Apply as coarse spray. Use 0.5-1.0 gal of spray per animal depending on size and thickness of hair coat.	Do not contaminate feed or water.
horn flies, lice, lone star ticks, face flies (aids in control)	Tetrachlorvinphos [23%] and Dichlorvos [5.3%]	Check label for proper dilution for each pest. Apply as coarse spray. Use between 0.5-1.0 gal of spray/animal depending on size and hair coat.	Do not treat more often than every 10 days. Do not contaminate feed or water.
face flies, horn flies, stable flies, lice, ticks	Permethrin [11%] Permethrin [10%]	Check labels for specific application instructions.	Do not contaminate feed or water.
Permethrin [5.7%] face flies, horn flies, lice	(Ectiban EC) and others Permethrin [7.4%] + Piperonyl Butoxide [7.4%]	Check label for specific application information.	Can be applied topically to livestock and their premises. Check label for precautions.
horn flies, lice, ticks, sarcopic mange horn flies, lice	Phosmet [11.6%] (Liquid Insecticide) Spinosad [2.46%]	See label for specific mixing and rate information Refer to label for specific mixing and rate information.	Do not contaminate feed or water. Does not control cattle grubs. Do not make more than 5 consecutive treatments with this product. Do not apply more than once every 7 days. Do not apply within 2 days of slaughter.

¹Cattle grubs - dips and sprays - Do not apply to sick, convalescent, or stressed animals or animals less than three months old. Do not dip or spray animals for 10 days before or after shipping or weaning, or after exposure to contagious or infectious diseases. Do not apply in conjunction with oral drenches, or with internal medications such as phenothiazine, or with natural or synthetic pyrethroids or their synergists, or with other organic phosphates. Do not apply in a confined, non-ventilated area. Destruction of *Hypoderma* larvae (cattle grubs) at the period when these grubs are in vital areas may cause undesirable host-parasite reactions including the possibility of fatalities. Killing *Hypoderma lineatum* when it is in the tissue surrounding the gullet may cause salivation and bloat; killing *H. bovis* when it is in the vertebral canal may cause staggering or paralysis. These reactions are not specific to treatment with Ivomec, but can occur with any successful treatment of grubs. Cattle should be treated either before or after these stages of grub development. Consult your veterinarian or Extension entomologist concerning proper timing of treatment.

Table 2.6 - Pour-ons¹

Pests	Active Ingredient [Percent A.I. in Product] (Trade Name)	Insecticide Mixing and Application Information	Precautions
horn flies, face flies	Lambda-Cyhalothrin [1.0%]	Ready to use. Apply down backline at rate of 0.33 oz/animal up to 600 lbs of body weight. For animals weighing more than 600 lbs use 0.5 oz/animal.	Do not apply to face of animal. Non-systemic, will not control cattle grubs. Repeat as needed, but not more than once every 2 weeks and not more than 4 times within 6 months. Two treatments at 14- day intervals are recommended for control of sucking lice.
	Permethrin [10.0 %]	Ready to use. Apply from poll down neck to shoulders and along midline of back. Use 0.125 oz/250 lbs of body weight.	Non-systemic, will not control cattle grubs. Repeat as needed, but not more often than once every 2 weeks.
	Spinosad [2.46%]	Ready to use. Apply along back and down face. See label for complete use directions.	Repeat as needed, but not more than once every 2 weeks. Do not make more than 5 consecutive treatments with this product. Do not apply more than once every 7 days. Do not apply within 2 days of slaughter.
lice	Permethrin [1.0%]	Ready to use. Apply along back and down face. Use 0.5 oz/100 lbs of body weight, up to 5 oz/animal.	Repeat as needed, but not more than once every 2 weeks.
	Cyfluthrin [1.0%]	Rates for horn flies and face flies: 4 oz < 400 lb body wt 8 oz 400 to 800 lb body wt 12 oz > 800 lb body wt Rates for biting and sucking lice: 8 oz < 400 lb body wt 16 oz 400 to 800 lb body wt 24 oz > 800 lb body wt	Does not control cattle grubs.
	Permethrin [1.0%] + Piperonyl Butoxide [1.0%]	Apply at rate of 0.5 oz/100 lb of body wt up to maximum dosage of 5 oz/animal.	Repeat as needed, but not more often than once every 2 weeks. Check label for additional precautions.

¹Do not use any pour-ons for lice control between Nov. 1 and Feb. 1. **Apply all pour-on grub treatments after Aug. 1 but no later than Nov. 1.**

²Destruction of *Hypoderma* larvae (cattle grubs) at the period when these grubs are in vital areas may cause undesirable host-parasite reactions including the possibility of fatalities. Killing *Hypoderma lineatum* when it is in the tissue surrounding the gullet may cause salivation and bloat; killing *H. bovis* when it is in the vertebral canal may cause staggering or paralysis. These reactions are not specific to treatment with Ivomec, but can occur with any successful treatment of grubs. Cattle should be treated either before or after these stages of grub development. Consult your veterinarian or Extension entomologist concerning proper timing of treatment.

Refrain from smoking or eating when handling. Wash hands after using. Keep this and all drugs out of reach of children.

Table 2.6 - Pour-ons¹ (cont.)

Pests	Active Ingredient [Percent A.I. in Product] (Trade Name)	Insecticide Mixing and Application Information	Precautions
lice (cont.)	Spinosad [2.46%]	Ready to use. Apply along back and down face. See label for complete use directions.	Repeat as needed, but not more than once every 2 weeks. Do not make more than 5 consecutive treatments with this product. Do not apply more than once every 7 days. Do not apply within 2 days of slaughter.
	L-cyhalothrin	See label.	0 days to slaughter.

Avoid using products with grubicidal activity in Virginia from Nov. 1 to Feb. 1.²

grubs, horn flies, lice, sarcopic mange, chorioptic mange See footnote ²	Eprinomectrin	Use 1.0 ml of product for each 22.0 lb of body weight. Apply along backline in a narrow strip extending from the withers to tailhead.	When used according to label, no pre-slaughter withdrawal period is required.
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²Destruction of *Hypoderma* larvae (cattle grubs) at the period when these grubs are in vital areas may cause undesirable host-parasite reactions including the possibility of fatalities. Killing *Hypoderma lineatum* when it is in the tissue surrounding the gullet may cause salivation and bloat; killing *H. bovis* when it is in the vertebral canal may cause staggering or paralysis. These reactions are not specific to treatment with Ivomec, but can occur with any successful treatment of grubs. Cattle should be treated either before or after these stages of grub development. Consult your veterinarian or Extension entomologist concerning proper timing of treatment.

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Table 2.7 - Spot-ons

Pests	Active Ingredient [Percent A.I. in Product] (Trade Name)	Insecticide Mixing and Application Information	Precautions
ear ticks, screwworm	Coumaphos [5%]	Shake well. Squeeze container to release dust in short bursts of light clouds. Hold nozzle 2-4 inches from area to be treated and apply a light, even coat around the area.	For screwworm, treat infested wounds with light but thorough coverage. For ear ticks, dust into the area and also treat adjacent head area.

Table 2.8 - Mineral Mixtures and Feed Additives

Pests	Active Ingredient [Percent A.I. in Product] (Trade Name)	Insecticide Mixing and Application Information	Precautions
face flies, horn flies, house flies, stable flies	Tetrachlorvinphos [7.6%]	Follow directions according to label. Start feeding in early spring before flies begin to appear, and continue throughout the summer and fall until cold weather restricts fly activity.	Check label for precautions.
horn flies (and possibly other species of filth-breeding flies)	s-Methoprene [10.5%]	Refer to label for details on proper feed to weight blending ratios.	S-Methoprene is an insect growth regulator (IGR) that interrupts the development of the horn fly (and possibly other species of filth-breeding flies) in the manure of treated cattle. Begin use in spring before horn flies appear on cattle and continue feeding until cold weather restricts horn fly activity. Product is safe for beef and dairy cattle, including breeding cattle, lactating cattle, and calves. Product can be fed up to slaughter and to lactating dairy cows without withholding milk.

Table 2.9 - Ear Tags

Pests	Active Ingredient [Percent A.I. in Product] (Trade Name)	Insecticide Mixing and Application Information	Precautions
face flies, horn flies	Pyrethroid Class Tags Beta-Cyfluthrin insecticide, Cyfluthrin insecticide, Cypermethrin insecticide & Piperonyl Butoxide synergist, Permethrin insecticide, Permethrin insecticide & Piperonyl Butoxide synergist, Fenvalerate insecticide, Lambda-Cyhalothrin insecticide & Piperonyl Butoxide synergist	Follow directions according to labels. Apply with recommended applicator.	Carefully read instructions to avoid ear damage. Remove tags before slaughter.
	Organophosphate Class Tags Diazinon insecticide, Ethion insecticide, Diazinon & Chlorpyrifos insecticide, Fenthion insecticide & Piperonyl Butoxide synergist, Pirimiphos-methyl insecticide	Follow directions according to labels. Apply with recommended applicator.	Carefully read instructions to avoid ear damage. Remove tags before slaughter.
	Pyrethroid & Organophosphate Class Tags Cypermethrin & Chlorpyrifos insecticide & Piperonyl Butoxide synergist, Lambda-Cyhalothrin & Pirimiphos-methyl insecticide, Permethrin and Chlorpyrifos insecticide & Piperonyl Butoxide synergist		

Table 2.10 - Injectables¹

Pests	Active Ingredient [Percent A.I. in Product] (Trade Name)	Insecticide Mixing and Application Information	Precautions
lice (sucking): (<i>Linognathus vituli</i>), (<i>Haematopinus eurysternus</i>), (<i>Solenopotes capillatus</i>) grubs: (<i>Hypoderma bovis</i>), (<i>H. lineatum</i>) mange mites: (<i>Psoroptes ovis</i>), (<i>Sarcoptes scabiei</i>) See footnote ¹	Ivermectin [1%] Dectomax [1%]	Ivermectin should be given only by subcutaneous injection at the recommended dose level of 200 mcg ivermectin/kg of body weight. Each 10 mg of ivermectin is sufficient to treat 110 lb (50 kg) of body weight. Use of a 16 gauge, 1/2 to 3/4" needle is suggested. Inject under the loose skin in front of or behind the shoulders.	Do not treat cattle within 35 days of slaughter. This product is not for intravenous or intra-muscular use. Animals should be appropriately restrained to achieve the proper route of administration. Use sterile equipment and sanitize the injection site by applying a suitable disinfectant. Clean, properly disinfected needles should be used to reduce potential injection-site infections.

¹Observe cattle for injection site reactions. Reactions may be due to clostridial infection and should be aggressively treated with appropriate antibiotics.

Ivermectin is highly effective against all stages of cattle grubs. However, proper timing of treatment is important. For most effective results, cattle should be treated as soon as possible after the end of the heel fly (warble fly) season.

Destruction of *Hypoderma* larvae (cattle grubs) at the period when these grubs are in vital areas may cause undesirable host-parasite reactions including the possibility of fatalities. Killing *Hypoderma lineatum* when it is in the tissue surrounding the gullet may cause salivation and bloat; killing *H. bovis* when it is in the vertebral canal may cause staggering or paralysis. These reactions are not specific to treatment with ivermectin, but can occur with any successful treatment of grubs. Cattle should be treated either before or after these stages of grub development. Consult your veterinarian or Extension entomologist concerning proper timing of treatment.

Cattle treated with ivermectin after the end of the heel fly season may be retreated with ivermectin during the winter for internal parasites, mange mites, or lice without danger of grub-related reactions. **A planned parasite control program is recommended.**

Transitory discomfort has been observed in some cattle following subcutaneous administration. A low incidence of soft-tissue swelling at the injection site has been observed. These reactions have disappeared without treatment. Divide doses greater than 10 ml between two injection sites to reduce occasional discomfort or site reaction. Protect from light.

CAUTION: Ivermectin injection for cattle has been developed specifically for use in cattle and reindeer only. This product should not be used in other animal species because severe adverse reactions, including fatalities in dogs, may result.

Refrain from smoking or eating when handling. Wash hands after using. Keep this and all drugs out of reach of children.

Table 2.11 - Bolus

Pests	Active Ingredient [Percent A.I. in Product] (Trade Name)	Insecticide Mixing and Application Information	Precautions
face flies, horn flies, house flies, stable flies	Diflubenzuron [9.7%]	This product is a controlled-release bolus for beef and dairy cattle that aids in the suppression of house and stable flies. Administer 1/2 bolus to cattle weighing 300-550 lb, and 1 bolus to cattle weighing 550-1,100 lb or greater.	Do not administer to cattle weighing less than 300 lb. Never administer more than 1 bolus to any animal.

When to Treat for Cattle Grubs

Proper timing of treatment is important when using systemic grubicide pour-ons and spot-ons on beef and non-lactating dairy cattle. For most effective results, cattle should be treated for grubs after the end of heel fly activity in September. Host-parasite reactions such as bloat, salivation, staggering and paralysis may sometimes occur when cattle are treated while the common cattle grub, *Hypoderma lineatum*, is in the gullet, or while the northern cattle grub, *H. bovis*, is in the area of the spinal cord. Therefore, avoid using products with grubicidal activity on cattle in Virginia from Nov. 1-Feb. 1.

Follow Instructions on the Label

If it is impossible to determine the origin of the cattle, and thus the exact stage of the grubs is unknown, it is recommended that the cattle receive only dry hay or a maintenance ration of low energy feed a couple of days before and during the treatment period. This lessens the likelihood of severe bloat, which may occur in cattle on full feed when the common grub is killed in the gullet.

When to Treat for Cattle Lice

Systemic pour-ons and spot-ons for lice control on beef and non-lactating dairy cattle are convenient. Grub treatment before the November cutoff date often will not take care of cattle lice problems. Louse eggs are not as susceptible to insecticides as the lice themselves and therefore animals should be re-examined about three weeks after treatment to determine if viable lice eggs have hatched and reinfested the herd.

Do not use grubicides such as coumaphos (Co-Ral), famphur (Warbex - registration cancelled), fenthion (Tiguvon or Spotton - registration cancelled) or phosmet (Prolate) from November through January on cattle not previously treated for grubs due to possible host-parasite reactions. After February 1, grub larvae have migrated from the spinal canal, or esophagus, and usually encyst in the back; cattle may then be treated safely with grubicides. It is then safer to treat for lice to minimize the host-parasite reaction.

For cattle previously treated for grubs, a second treatment later in the season may become necessary should lice become a problem. The second treatment usually should not be applied sooner than 35 days after the first treatment. Be sure to follow instructions on the label for any safety precautions.

Systemic spot-ons and pour-ons that kill lice but not grubs can be applied anytime throughout the fall and winter months. Be sure to follow instructions on the label for any safety precautions.

