

## Dairy External Parasites

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Insecticides should be applied with extreme caution to cows or calves in poor health. This means light applications of safer materials.

**Table 2.12 - Dust Bags<sup>1</sup>**

Pests	Insecticide Active Ingredient [Percent A.I. in Product] (Trade Name)	Mixing and Application Information	Precautions
horn flies, lice (aids in control of face flies)	Coumaphos [1%] Dust	No mixing is necessary. Install burlap bags of dust in doorway where cattle leave milking barn or enter loafing barn. Keep in place during winter months to aid in control of lice.	Do not contaminate feed or water.
	Ectiban		
	Gardona		
	Permethrin Rabon		

<sup>1</sup>Closed-mesh bags must be used to prevent waste of dust.

**Table 2.13 - Backrubbers<sup>1</sup> - Lactating Cows**

Pests	Insecticide Active Ingredient [Percent A.I. in Product] (Trade Name)	Mixing and Application Information	Precautions
face flies, horn flies, stable flies	Permethrin [11%]	Dilute 1.0 pt product/10.0 gal #2 diesel oil.	Use only #2 diesel oil or any other approved backrubber base oil. Do not use motor oil or waste oil. Keep rubbing device charged. Results improve with daily forced use. Install backrubbers where cattle leave the milking barn.
	Tetrachlorvinphos [23%] Dichlorvos [5.3%]	Dilute 5.0 oz product/1.0 gal #2 diesel oil.	
	Permethrin [10%]	Mix 1.0 qt product/20.0 gal #2 diesel oil.	
	Permethrin [5.7%]	Mix 1.0 qt product/10.0 gal #2 diesel oil.	
	Cumophos	1.25 cups/gal #2 diesel oil	
face flies, horn flies, lice	Permethrin [7.4%] + Piperonyl Butoxide [7.4%]	Mix 2.1 oz/gal mineral oil. Results improve with daily forced use.	

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

**Table 2.14 - Hand Dusting - Lactating Cows**

<b>Pests</b>	<b>Insecticide Active Ingredient [Percent A.I. in Product] (Trade Name)</b>	<b>Mixing and Application Information</b>	<b>Precautions</b>
face flies, horn flies, lice	Tetrachlorvinphos [3%] Dust	Follow directions according to label. Wear rubber gloves to apply. Apply approximately 2 oz 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 oz (6.0 tbsp) of dust/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.
horn flies, lice	Coumaphos [1%] Dust	No mixing is necessary. Apply not more than 2.0 oz/ animal. Dust evenly into the hair over the head, neck, shoulders, back, and tail-head. Repeat as necessary.	Do not contaminate feed or water.
	Zeta-Cypermethrin [0.075%] + Piperonyl Butoxide [0.15%]	See label for specific application instructions.	

**Table 2.15 - Wetting Sprays - Lactating Cows**

<b>Pests</b>	<b>Insecticide Active Ingredient [Percent A.I. in Product] (Trade Name)</b>	<b>Mixing and Application Information</b>	<b>Precautions</b>
face flies, horn flies, horse flies, house flies, stable flies, lice, mites, ticks	Permethrin [11%]	Mix 1.0 pt product in 25.0 gal water. Apply 1-2 qts of coarse spray/ animal over entire body surface.	Spray lactating dairy animals only after milking is completed. Do not contaminate feed or drinking water.
face flies, horn flies, stable flies, ticks	Permethrin [5.7%]	Mix 1.0 qt product in 25.0 gal water. Apply 1-2 qts spray/ animal over entire body surface.	
lice	Permethrin [5.7%]	Mix 1.0 quart product in 100 gal water.	A second application is recommended 2-3 weeks later.
	Coumaphos [25%]	Mix 1.0 lb product in 100 gal water. Apply spray to run-off.	
face flies, horn flies, horse flies, stable flies, lice, mites, ticks, etc.	Permethrin [10%]	Mix 1.0 quart product in 200 gal water. Apply spray to thoroughly cover animal.	For lice and mites a second application is recommended 2-3 weeks later.
face flies, horn flies, lice	Permethrin [7.4%] + Piperonyl Butoxide [7.4%]	Check label for specific application instructions.	Can be applied topically to lactating dairy animals and their premises. Check label for precautions.
horn flies, lice	Spinosad [2.46%]	For lactating and non-lactating beef and dairy cows. Refer to label for specific mixing and rate information.	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.

**Table 2.16 - Mist Sprays - Lactating Cows**

<b>Pests</b>	<b>Insecticide Active Ingredient [Percent A.I. in Product] (Trade Name)</b>	<b>Mixing and Application Information</b>	<b>Precautions</b>
horn flies, stable flies	Synergized pyrethrins	Apply 1.0-2.0 oz of product directly to animal once daily, preferably in morning.	If other mist sprays are used on lactating dairy cattle, please read label carefully.
face flies, horn flies, stable flies	Dichlorvos [40.2%]	Dilute 5.0 oz product in 2.0 gal water. Apply 1.0- 2.0 oz of diluted solution/animal daily as a fine mist. Thoroughly cover all parts of the animal, including the legs, but do not wet the skin.	Do not contaminate feed or drinking water. Do not apply in combination with trichlorfon. Do not apply to calves under 6 months.

**Table 2.17 - Injectables - Males and Females Not of Breeding Age<sup>1</sup>**

Pests	Insecticide Active Ingredient [Percent A.I. in Product] (Trade Name)	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>	Ivermectin [1%]	Ivermectin should be given only by subcutaneous injection at the recommended dose level of 200 mcg ivermectin/kilogram of body weight. Each 10 mg of ivermectin is sufficient to treat 110 lb (50 kg) of body weight. 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. <b>Because a withdrawal time in milk has not been established, do not use in female dairy cattle of breeding age.</b> This product is not for intravenous or intramuscular 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 the potential for injection-site infections.

<sup>1</sup>Ivermectin - Observe 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 heelfly (warble fly) season.

Destruction of *Hypoderma* species 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 heelfly 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 2.18 - Bolus**

<b>Pests</b>	<b>Insecticide Active Ingredient [Percent A.I. in Product] (Trade Name)</b>	<b>Mixing and Application Information</b>	<b>Precautions</b>
face flies, horn flies, house flies, stable flies	Diflubenzuron [9.7%]	Administer 0.5 bolus to cattle weighing 300-550 lb, and 1 bolus to cattle weighing 550-1,100 lb or more. Follow directions according to label.	Do not administer to cattle weighing less than 300 lb. Never administer more than 1 bolus to any animal.

**Table 2.19 - Pour-ons - Lactating Cows<sup>1</sup>**

<b>Pests</b>	<b>Insecticide Active Ingredient [Percent A.I. in Product] (Trade Name)</b>	<b>Mixing and Application Information</b>	<b>Precautions</b>
horn flies, 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 within 2 days of slaughter.
face flies, horn flies, lice	Permethrin [5.0%]	Apply 0.10 oz/100 lbs of body weight, up to a maximum of 1.01 oz/animal.	Non-systemic, will not control cattle grubs. Repeat as needed, but not more often than once every 2 weeks.
	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.
	Permethrin [1.0%] + Piperonyl Butoxide [1.0%]	Apply at rate of 0.5 oz/100 lb body weight up to a maximum dosage of 5 oz/animal.	Repeat as needed, but not more than once every 2 weeks. Check label for additional precautions.
	Cyfluthrin [1.0%]	<b>Rates for horn flies and face flies:</b> 4 oz <400 lb body wt 8 oz 400 to 800 lb body wt 12 oz >800 lb body wt <b>Rates for biting and sucking lice:</b> 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.
grubs, horn flies, lice sarcopic mange, chorioptic mange	Ivomec Eprinex	Use 1.0 ml of product for each 22.0 lb body wt. Apply along backline in a narrow strip extending from the withers to tailhead.	When used according to label, neither a pre-slaughter withdrawal period nor a milk discard time is required.

<sup>1</sup>Avoid using products with grubicidal activity in Virginia from Nov. 1 to Feb. 1.

**Table 2.20 - Pour-ons - Non-lactating Cows<sup>1</sup>**

<b>Pests</b>	<b>Insecticide Active Ingredient [Percent A.I. in Product] (Trade Name)</b>	<b>Mixing and Application Information</b>	<b>Precautions</b>
face flies, horn flies, lice	Permethrin [1.0%] + Piperonyl Butoxide [1.0%]	Pour along back at rate of 0.5 oz/100 lbs body wt up to a maximum of 5 oz/animal.	Repeat as needed, but not more than once every 2 weeks. Check label for additional precautions.
grubs <sup>2</sup> , horn flies, lice sarcopic mange, chorioptic mange	Eprinomectrin (Ivomec Eprinex)	Use 1.0 ml of product for each 22.0 lb body wt. Apply along backline in a narrow strip extending from the withers to tailhead.	When used according to label, neither a pre-slaughter withdrawal period nor a milk discard time is required.
horn flies, lice	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 within 2 days of slaughter.

<sup>1</sup>Please read label carefully if other pour-ons for grub control are used on non-lactating dairy cattle.

<sup>2</sup>Avoid using products with grubicidal activity in Virginia from Nov. 1 to Feb. 1.

**Table 2.21 - Ear Tags**

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

**Table 2.22 - Mineral Mixtures and Feed Additives**

<b>Pests</b>	<b>Insecticide Active Ingredient [Percent A.I. in Product] (Trade Name)</b>	<b>Mixing and Application Information</b>	<b>Precautions</b>
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.	The Ai in Altosid Cattle Custom Blending Premix is an insect growth regulator (IGR) 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.

