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OREGON INSECT CONTROL RECOMMENDATIONS FOR LIVESTOCK

CAUTION NOTE

The use of modern pesticides is necessary to safeguard the health of livestock and poultry as well as increase the production efficiency. When properly used, these pesticides are safe and effective, but they can be injurious to humans or animals, or result in harmful residues in meat, eggs, or milk if used improperly.

Precautions and directions are nobody's guess-work. They are based on data and facts submitted by the manufacturer and reviewed by the USDA and the EPA as part of label registration procedure.

- Treat only the livestock or poultry listed on the pesticide label. (Do not use on livestock or poultry any pesticides labeled for crops unless the formulation is authorized.)
- Use no more than the recommended dosage, and only at the time recommended.
- Observe the waiting period before slaughter.

Pesticides are poisons. Children or uninformed adults should not use pesticides. Youth should use pesticides only under direct supervision of competent adults.

GENERAL PESTICIDE PRECAUTIONS

Before using any pesticide, read the label carefully.

Follow the directions and heed all precautions on the pesticide container label.

Store pesticides in plainly labeled containers, safely away from livestock, pets, and children. Also, store them in an area where they will not contaminate food or feed.

Wear clean, dry clothing or protective clothing and use equipment as indicated on the label when handling any applying pesticides. Launder clothes each day before reuse.

Avoid repeated and prolonged skin contact with the pesticide and keep out of eyes, nose, and mouth.

Wash your hands and face immediately after applying a pesticide and before eating, drinking, or smoking.

Take care not to spill pesticides on skin or clothing. If this happens, remove contaminated clothing at once and wash skin and clothing thoroughly.

Don't contaminate wells, ponds, or streams when cleaning spray equipment or dumping unwanted spray.

Empty pesticide containers completely. Rinse "empty" containers with water one or more times and use rinse water in spraying operation. Thorough rinsing will remove 97 percent or more of the residue left in "empty" containers.

Dispose of empty containers carefully by burying in an isolated place or in a land-fill dump.

Don't buy or feed hay or grain that has been improperly treated with pesticides.

Don't feed your animals wastes from canneries, or food processing plants unless you are sure these wastes are free of harmful residues.

Aerosol pesticides should be used according to label directions. They are not all the same. Aerosol mists are often flammable. Avoid their use near open flames. When empty, wrap in several layers of newspaper and discard in the garbage. Do not puncture or put into incinerators since they may explode.

LIVESTOCK PEST CONTROL—DAIRY CATTLE

Prepared by R. L. Goulding and R. R. Robinson, Oregon State University

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Restrictions - remarks**
Lice <i>NOTE:</i> Any of the materials suggested for use on dairy animals may also be used on beef animals.	Pyrethrins + synergist	Follow manufacturer's directions. Finished spray usually contains 0.025% pyrethrin + 0.25% synergist.	0.5 milk fat 0.1 meat, fat & meat by-products	Two applications about 2-3 weeks apart necessary for best results.
	Ciodrin - 0.25%-0.5% as spray <i>Do not exceed 0.5% concentration.</i>	Use 1-2 qts. Ciodrin 1.1 lb/gal. E.C. per 12 gals. water. Spray adult animals thoroughly using 1-2 qts. of spray/large animal. Use proportionately less spray for smaller animals.	0.02 milk, meat, fat & meat by-products	Follow label directions. Do not apply more often than every 7 days. Do not contaminate food, feed or drinking water.
	Ciodrin - 3% dust	Apply 1-2T/animal to backline, poll, neck and upper portion of side.		Do not apply more often than once every 3-4 weeks. Do not treat calves less than 6 mos. old. Use in conventional hand or power dusters.
	Ciodrin - 3% dust	Dust Bag—Apply in dust bags suspended in livestock holding pens, feed lots, loafing sheds, near mineral or salt licks, between pasture and water, or other situations where cattle are forced to use frequently.		May be applied daily when application is by dust bags.
	Ciovap - 0.25% as spray	1 qt/12 gals. water. Spray animals completely with up to 1 gal/animal.	00.2 Vapona & Ciodrin meat, fat, meat by-products and milk.	Repeat applications no less than every 7 days. <i>NOTE:</i> Other formulations of Ciodrin than those mentioned may be available. If any of these are used follow the manufacturer's recommendations.
	Co-Ral - 0.03% spray	1 lb. 25% W.P. or 1 qt. 1 lb./gal. E.L.	1.0 meat, fat & meat by-products 0.5 milk fat.	Apply for complete wetting to runoff. Repeat as necessary.
	Co-Ral - 1% dust	Dust Bag—Apply in dust bags suspended in livestock holding pens, feed lots, loafing sheds, near mineral or salt licks, between pasture and water, or other situations where cattle are forced to use them frequently. See <i>manufacturer's recommendations.</i> Shaker Can — Dust evenly into hair over the head, neck, shoulders, back and tailhead. Apply not more than 2 ozs/animal.		Apply in dust bags. Do not contaminate feed or water. Repeat as necessary
Cattle Grubs <i>NOTE:</i> Any of the materials suggested for use on dairy animals may also be used on beef animals.	Co-Ral - 0.375%-0.5% as spray	12-16 lbs. 25% W.P. or 12 qts. 1 lb./gal. E.L.	1.0 meat, fat & meat by-products. 0.5 milk fat	Do not treat lactating animals. Do not treat non-lactating dairy animals within 14 days of freshening. Do not treat animals less than 3 mos. old, sick, convalescent or stressed livestock. Do not apply in conjunction with oral drenches or other internal medication.
	Co-Ral - 4% as pour-on	Apply pour-on at rate of 0.5 fl. oz. per 100 lbs. of body weight. Pour along backline. Make application as soon as possible after heel fly activity has ceased.		

* W.P. - wettable powder
* E.L.—Emulsifiable liquid.

* E.C. - emulsifiable concentrate

** Observe label precautions

LIVESTOCK PEST CONTROL—DAIRY CATTLE (Continued)

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Restrictions - remarks**
Cattle Grubs (Cont.)	Ruelene - 0.375% as spray	1.5 gals. 25% E.C.	1 meat, fat, and meat by-products.	Do not apply to lactat- ing dairy animals. Do not apply to dry dairy ani- mals within 23 days of freshening. Do not treat sick animals or animals under stress, or within 10 days after shipping, weaning or exposure to diseases. Do not re-dip within 31 days or spray or pour-on within 21 days after previous applica- tion. Do not apply to meat animals within 7 days of slaughter.
	- 6.2% as pour-on	Use 0.5 gal. E.C. in 1.5 gal. water and apply 1 fl. oz./100 lbs. body weight. Do not ex- ceed 8 ozs/ animal. Pour along backline.		
	- 9.4% ready- to-use pour- on	Use 0.75 oz./100 lbs. body weight up to 800 lbs. but no more than 8 oz. on larger animals. Treat after heel fly activity has ceased and before No- vember 1.		
	Neguvon - 8% as pour-on	Apply pour-on at rate of 0.5 fl. oz./100 lbs. of body weight. Pour along back- line.	0.1 meat, fat and meat by-products.	Treat as soon after heel fly activity has ceased as possible. Do not treat lac- tating dairy animals, ani- mals less than 3 mos. old, sick, convalescent or stressed livestock. Non- lactating dairy cattle can be treated up to 7 days of freshening. Do not treat cattle within 21 days of slaughter, or 10 days prior to shipping, wean- ing, or after exposure to contagious or infectious disease.
	Tiguvon - 3% as pour-on	Apply pour-on at rate of 0.5 fl. oz./100 lbs. body weight. Pour along back-line.	0.1 meat, fat and meat by-products.	Treat as soon after heel fly activity has ceased as possible. Do not treat lac- tating dairy animals, ani- mals less than 3 mos. old, sick, convalescent or stressed livestock. Non- lactating dairy cattle can be treated up to 28 days of freshening. Do not treat cattle within 35 days of slaughter, or 10 days prior to shipping, wean- ing, or after exposure to contagious or infectious disease.
Face Fly This pest of live- stock occurs throughout Oregon and Idaho. The face fly is a little larger and darker than the house fly. The eyes of the male face fly nearly touch, whereas eyes of the male house fly are somewhat sep- arated. The male face fly has orange colored abdomen.	Ciodrin - 1% low vol- ume spray applica- tion.	Use 4T (2 fl. ozs.) Ciodrin 1.1 lb/gal. E.C./1½ pts. of water. Apply 1 fl. oz. of spray to the face and 1-2 ozs. to the back and sides of the animal every 2 days. One teaspoonful of sugar/pt. of spray improves control.	.02 milk, meat, fat & meat by-prod- ucts.	Do not apply more than 3 times/week. Do not con- taminant food, feed or drinking water.
	Ciodrin - 3% dust	Dust Bag—Apply in dust bags suspended in livestock holding pens, feed lots, loaf- ing sheds, near mineral or salt licks, between pasture and water, or other situations where cattle are forced to use frequently.		May be applied daily when application is by dust bags.

* W.P. - wettable powder
* E.L.—Emulsifiable liquid.

* E.C. - emulsifiable concentrate

** Observe label precautions

*** Mineral oils are less irritating and odorous and may be substituted for diesel or fuel oil.

LIVESTOCK PEST CONTROL—DAIRY CATTLE (Continued)

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Restrictions - remarks**
Face Fly (Cont.) The female face fly has an orange stripe on abdomen. They congregate around the eyes and muzzle of cattle. Face flies usually leave the animals entering a barn. However, on cool, cloudy days or after weather starts in the fall large numbers may enter barns, houses or other structures.	Ciovap - mixture of 1% Ciodrin and ¼% Vapona as a ready-to-use animal spray solution.	Apply with hand power or automatic spray equipment. Apply daily as a fine mist to cover all parts of the animal, including legs. Do not use in excess of 2 fl. ozs. daily/animal.	.02 (Ciodrin) .02 (Vapona), meat, fat, meat by-products and milk.	Do not wet the skin. Do not apply regularly to calves under 6 mos. of age. Do not use on Brahman cattle.
	Vapona - 1% as ready-to-use animal spray solution.	Apply 2 fl. ozs/ animal as a fine mist spray daily with hand sprayer. Apply to cover all parts of the animal, including legs.	.02 milk, meat, fat & meat by-products.	Do not apply more than 2 fl. ozs. daily per animal. Do not wet the skin. Do not apply regularly to calves less than 6 mos. of age. Do not use on Brahman cattle.
	Co-Ral - 1% in oil.	Use 1 gal. Co-Ral 1 lb./gal. E.C./13 gals. No. 2 diesel or fuel oil. Use 1 gal. of mixture/20 lineal ft. of backrubber.***	1.0 meat, fat, & meat by-products. .02 milk.	Suspend backrubber at a height that will prevent straddling. Do not mix with used motor oil.
	Co-Ral - 1% dust	Dust Bag—Apply in dust bags suspended in holding pens, feed lots, loafing sheds, near mineral or salt licks between pasture and water, or other situations where cattle are forced to frequent. See <i>Manufacturer's Recommendations</i> .		Apply in dust bags. Do not contaminate feed or water.
	- 1% dust	Shaker Can—Dust evenly into hair, over the head, neck, shoulders, back and tailhead.		Repeat as necessary Apply not more than 2 ozs./animal.
Horn Flies <i>NOTE:</i> The materials suggested for use in control of face fly may be used for horn fly control. <i>NOTE:</i> Any of the materials suggested for use on dairy animals may be used on beef animals.	Methoxychlor*** - 50% W.P.	Use 1 tablespoon 50% W.P./animal. Rub lightly into hair on the back.	3 fat (of meat). NR (PP) milk.	Apply methoxychlor no more often than once every 3 weeks.
	Malathion*** - 5% dust	Use 1.5 oz. (3 tablespoons) of 5% dust per animal. Do not contaminate feed, water or milking equipment.	4 meat, fat and meat by-products. 0.5 milk fat.	Do not apply during or less than 5 hrs. before milking. Applications may be repeated at 10-14 day intervals.
	Malathion*** - 5% dust	Thorough application of 5% dust	4 meat, fat and meat by-products. 0.5 milk fat.	Do not apply during lactation or within 2 weeks of freshening.
	Ciodrin - 3% dust	Apply 2T per animal to backline, poll, neck and upper portions of side, or Dust Bag—See under face flies.	.02 milk, meat, fat & meat by-products.	Do not apply more often than once every 14 days. Do not use on calves less than 6 mos. old. May be applied daily when applications are made with dust bags.
	Ciovap - 1% concentration. (Backrubber)	Mix 1 qt/4 gals. backrubber oil base. Use 1 gal/20 ft. of cable.	0.02 (Ciodrin), 0.02 (Vapona) milk, meat, fat & meat by-products.	
	Pyrethrins	Follow manufacturer's directions.	0.5 milk fat. 0.1 meat, fat & meat by-products.	These materials do not have long residual effect. Frequent treatments will be necessary.

* W.P. - wettable powder

* E.C. - emulsifiable concentrate

** Observe label precautions

*** Do not apply methoxychlor or malathion to cows in milking parlors or barns until cows are milked and ready to be turned out.

* E.L.—Emulsifiable liquid.

LIVESTOCK PEST CONTROL—DAIRY CATTLE (Continued)

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Restrictions - remarks**
Horn Flies (Cont.)	Co-Ral - 1% dust	Dust Bags—Apply in dust bags suspended in livestock holding pens, feed lots, loafing sheds, near mineral or salt licks, between pasture and water, or other situations where cattle are forced to use frequently. See <i>Manufacturer's Recommendations</i> .	1.0 meat, fat & meat by-products. 0.02 milk.	Apply in dust bags. Do not contaminate feed or water.

LIVESTOCK PEST CONTROL—BEEF CATTLE

Prepared by R. L. Goulding and R. R. Robinson, Oregon State University
In cooperation with
Roland W. Portman and L. E. O'Keefe, University of Idaho

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Interval between application and slaughter —remarks**
Cattle Grubs <i>NOTE:</i> Pour-on treatments are useful in suppressing lice, but may not give sufficient protection where an acute louse problem exists.	Co-Ral - 0.375%-0.5% as spray	12-16 lbs. 25% W.P. or 12 quarts of 1 lb./gal. E.C.	1 meat, fat & meat by-products. 0.02 milk.	No time limitation between application and slaughter. Treat as soon as possible after heel fly activity ceases, and at least 6 wks. before grubs appear in the back. Use the higher spray concentration for late fall application when long hair coats make wetting of the skin difficult.
	- 0.25% as dip - 4% as pour-on	8 lbs. 25% W.P. Apply pour-on at rate of 0.5 fl oz. per 100 lbs. of body weight. Pour along backline.		
	Ruelene - 0.37% as spray	1.5 gals. 25% E.C.		
	- 6.2% pour-on	Use 0.5 gal. 25% E.C. in 1.5 gal. water and apply 1 fl. oz./100 lbs. of body weight along backline. For animals over 800 lbs. do not exceed 8 oz/head.		
	- 9.4% ready to-use pour-on	Use 0.75/100 lbs. body weight up to 800 lbs. but not more than 8 ozs. on larger animals. Treat after heel fly activity has ceased and before November 1.		Do not apply within 7 days of slaughter. Treat sick animals or those under stress. Do not treat within 10 days of shipping, weaning or exposure to diseases. Do not re-dip within 31 days or spray or pour-on within 21 days after previous application.
	Neguvon - 8% as pour-on	Apply pour-on at rate of 0.5 fl. oz. per 100 lbs. of body weight. Do not apply more than 4 fl. oz./animal. Pour evenly along backline.	0.1 meat, fat & meat by-products.	Treat as soon as possible after heel fly activity has ceased. Do not treat dairy animals, animals less than 3 mos. old, sick, convalescent, or stressed livestock. Do not treat beef animals within 21 days of slaughter or 10 days before shipping or weaning.

* W.P. - wettable powder
* E.L.—Emulsifiable liquid.

* E.C. - emulsifiable concentrate

** Observe label precautions

LIVESTOCK PEST CONTROL—BEEF CATTLE (Continued)

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Interval between application and slaughter —remarks**
Cattle Grubs (Cont.)	Tiguvon - 3% as pour-on	Apply pour-on at the rate of ½ oz/100 lbs. of body weight.	0.1 meat, fat & meat by-prod- ucts.	Pour-on treatment. Do not treat lactating dairy cat- tle, calves less than 3 mos. old, sick, convalescent or stressed livestock. Do not treat cattle for 10 days before or after shipping, weaning or dehorning or after exposure to conta- gious or infectious dis- ease.
	Ronnel (purified grade Tro- lene F.M.) 0.26% (mineral feed mix- tures) "Rid-Ezy" "Steer Kleer"	Mix with grain or protein sup- plement so that animals will receive 0.3 lbs. of the 0.26% mixture/100 lbs. of body weight daily for 14 consecu- tive days.	10 fat 4 meat and meat by-products 1.25 milk fat.	Do not feed to cows pro- ducing milk for human consumption. Do not feed to any cattle within 10 days of slaughter. Do not feed to heifers within 10 days of freshening that will produce milk for human consumption. <i>If feeding ronnel do not spray, dip or pour-on ronnel, Co-Ral, Ruelene or Neguvon.</i>
	0.6% (feed mixture)	Mix with feed so that animals will receive 0.33 lbs. of 0.6% feed mixture per 100 lbs. of body weight daily for 7 consecutive days.		
	Ronnel - 5.50% (block or granular concentrate) "Rid-Ezy—Steer Kleer"	Feed at rate of 0.25 lb/100 lbs. of animal weight/head/ month continuously for not less than 75 days.	10 fat. 4 meat and meat by-products. 1.25 milk fat.	Withdraw from dairy heif- ers 10 days before calv- ing. Withdraw 10 days prior to slaughter. Do not feed to dairy cattle. Also controls horn flies.
	Warbex (Famphur) 13.2% ready-to-use pour-on	1 oz/200 lbs. body weight, not to exceed 4 ozs.	0.1 meat, fat & meat by-prod- ucts of cattle.	Treat as soon as possi- ble after heel fly activity ceases. Do not use on lactating dairy cows within 21 days of fresh- ening. Do not slaughter within 35 days after treat- ment. Do not repeat treat- ment.
Face Fly	There is no single satisfactory approach to face fly control on beef cattle. Usually the treatments for face fly control on dairy cattle are not suited to beef cattle management practices. General fly control measures as applied to the premises, plus the use of backrubbers and dust bags placed where cattle are forced to use them may reduce the face fly problem. Sprays are considered of value only when applied immediately before cattle are being moved to new pastures.		The use of ronnel fortified salt blocks and feed supplements may give variable results due to differences in individual consumption rates and degree of isolation of the herd. In Oregon malathion ULV application by aircraft at the rate of 8 ounces per acre has protected small herds in restricted pastures for several days. This method of control may be satisfactory under some conditions, but needs further testing.	
Horn Flies Spray treatments may have to be repeated at about 3 week intervals during fly season.	Methoxychlor - 0.5% as spray - 5% as dust	8 lbs. 50% W.P. Apply in dust bags sus- pended in loafing areas fre- quented by cattle or located in corral gates between pas- ture & water, between pas- ture and salt, etc., where cat- tle are forced to use them frequently.	3 fat.	No time limitation be- tween application and slaughter. Do not apply to animals being finished for slaugh- ter. Do not refill bags more often than every four weeks.

(Cont. on next page)

* W.P. - wettable powder
* E.L.—Emulsifiable liquid.

* E.C. - emulsifiable concentrate

** Observe label precautions

LIVESTOCK PEST CONTROL—BEEF CATTLE (Continued)

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Interval between application and slaughter —remarks**
Horn Flies (Cont.)	Toxaphene - 0.5% as spray	10 lbs. 40% W.P., or 0.5 gal. E.C. containing 8 lbs. toxaphene per gallon.	7 fat.	Do not apply within 28 days of slaughter.
	Malathion - 0.5% as spray	16 lbs. 25% W.P., or 1 gal. 57% E.C.	4 meat & meat by-products.	No time limitation between application and slaughter. Do not spray calves less than 1 mo. old.
	- 5% dust	Apply directly to animals.		No time limitation between application and slaughter. Do not apply to lactating dairy animals or within 2 weeks of freshening.
	Ronnel (Korlan) - 0.5% as spray	2 gallons 25% E.C.	10 fat. 4 meat and meat by-products.	Do not apply within 7 days of slaughter. Do not treat sick animals.
	Ronnel - 5.50% (block or granular concentrate) "Rid-Ezy—Steer Kleer"	Feed at rate of 0.25 lb/100 lbs. of animal weight per head per month.	10 fat. 4 meat and meat by-products. 1.25 milk fat.	Withdraw from dairy heifers 10 days before calving. Withdraw 10 days prior to slaughter. Do not feed to dairy cattle. Use as only source of ronnel medication.
	Co-Ral - 0.06% as spray	2 lbs. 25% W.P. or 2 qts. 1 lb./gal. E.L. Tests in Oregon indicate that reinfestation may occur in most parts of the state. This dosage would give control for only a few days. A higher dosage will extend the period of effectiveness.	1 meat, fat & meat by-products. 0.02 milk.	No time limitation between application and slaughter.
	- 1% in oil	Use 1 gal. Co-Ral 1 lb./gal. E.C./13 gals. No. 2 diesel or fuel oil. Use 1 gal. of mixture/20 lineal ft. of backrubber.***		Suspend backrubber at a height that will prevent straddling. Do not mix with used motor oil.
	- 1% dust	Dust Bags—Apply in dust bags suspended in livestock holding pens, feed lots, loafing sheds, near mineral or salt licks, between pasture and water, or other situations where cattle are forced to use frequently. See <i>Manufacturer's Recommendations</i> .		Apply in dust bags. Do not contaminate feed or water.
	- 1% dust	Shaker Can—Dust evenly into hair over the head, neck, shoulders, back and tail-head. Apply not more than 2 ozs/animal.		Repeat as necessary.
	Ruelene - 0.375% as spray	1.5 gallons 25% E.C.	1 meat, fat & meat by-products.	Do not apply within 7 days of slaughter. Observe other precautions on label.
Ciodrin - 1% concentration as spray	Mix 2 qts/6 gals. water. Spray animals completely with 1-2 pts. of mixture especially the back and under the belly.	.02 milk, meat, and meat by-products.	Repeat no more often than every 7 days.	

(Cont. on next page)

* W.P. - wettable powder

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** Observe label precautions

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* E.L.—Emulsifiable liquid.

LIVESTOCK PEST CONTROL—BEEF CATTLE (Continued)

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Interval between application and slaughter —remarks**
Horn Flies (Cont.)	- 0.5% as spray	<i>For Pen or Corral Operations:</i> Mix 2 qts/12 gals. water. Apply 1-2 qts. of mixture with high pressure equipment. Avoid excessive spraying of head.		Repeat no more often than 7 days.
	- 1% concentration on backrubber	Mix 1 qt/4 gals. of backrubber base oil. Use 1 gal/20 ft. of cable.		May be applied daily when application is by dust bags. Do not apply more often than once every 14 days. Do not use on calves less than 6 mos. old as a direct application.
	- 3% dust	Dust Bags—Apply in dust bags suspended in livestock holding pens, feed lots, loafing sheds, near mineral or salt licks, between pasture and water, or other situations where cattle are forced to use frequently, or apply 2T per animal to backline, poll, neck, and upper portions of side.		
	Ciovap - Ready-to-use spray	Spray animals completely with 2 fl. ozs., especially the back and sides.	0.02 Ciodrin 0.02 Vapona milk, meat, fat and meat by-products.	
		- Ready-to-use backrubber	1 gal/20 ft. of cable.	
	Toxaphene - 8% in oil, or Methoxychlor - 5% in oil	Follow label directions for mixing. Use #2 fuel or similar oil. Do not mix insecticides with used motor oil.***	Toxaphene 7 fat. Methoxychlor 3 fat.	For use on backrubbers. Use 1 gal. mixture/20 ft. of cable. Where toxaphene is used, do not allow cattle access to backrubbers within 28 days of slaughter.
	Ronnel (Korlan) - 1% in oil	Mix 1 gal. Korlan 24E with 27 gals. #2 fuel or similar oil. Do not mix with used motor oil.***	10 fat. 4 meat and meat by-products.	Use 1 gal. mixture/20 ft. of cable.
Lice A single treatment may not give complete seasonal control. A second treatment may be necessary. <i>NOTE:</i> Any of the materials suggested for use on dairy animals may, where practical, be used on beef animals. <i>NOTE:</i> In areas where lice are a significant problem backrubbers should be considered only as supplementary to a spray or dip treatment. Continued on next page	Toxaphene - 0.5% as spray or dip; - 5% as dust	10 lbs. 40% W.P., or 0.5 gal. E.C. containing 8 lbs. toxaphene per gallon.	7 fat.	Do not apply spray within 28 days, or dust within 30 days of slaughter.
	Malathion - 0.5% as spray - 4.0-5.0% dust	16 lbs. 25% W.P., or 1 gal. 57% E.C.	4 meat & meat by-products.	No time limitation between application and slaughter. Do not apply to calves less than 1 mo. old.
	Methoxychlor - 0.5% as spray	8 lbs. 50% W.P.	3 fat.	No time limitations between application and slaughter.
	Ronnel (Korlan) - 0.25% as spray	1 gal. 24% E.C.	10 fat. 4 meat and meat by-products.	Do not retreat within 2 weeks. Do not treat sick animals.
	Co-Ral - 0.06% as spray or dip	2 lbs. 25% W.P., (4 lbs. if both ticks and lice are present) or 2 qts. 1 lb./gal. E.L. (4 qts. if both ticks and lice are present.)	1 meat, fat & meat by-products. 0.5 milk fat.	When used in fall for combined grub and louse control, use 0.375% to 0.5% concentration as spray and 0.25% as dip. No time limitation between application and slaughter.

* W.P. - wettable powder

* E.C. - emulsifiable concentrate

** Observe label precautions

*** Mineral oils are less irritating and odorous and may be substituted for diesel or fuel oil.

* E.L.—Emulsifiable liquid.

LIVESTOCK PEST CONTROL—BEEF CATTLE (Continued)

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Interval between application and slaughter —remarks**
Lice (Cont.)	- 1% in oil	Use 1 gal. Co-Ral 1 lb./gal. E.C. per 13 gals. #2 diesel or fuel oil. Use 1 gal. mixture/20 lineal ft. of backrubber.		Apply by backrubbers. Do not mix Co-Ral with used motor oil.***
	- 1% dust	Dust Bags—Apply in dust bags suspended in livestock holding pens, feed lots, loafing sheds, near mineral or salt licks, between pasture and water, or other situations where cattle are forced to use frequently. See <i>Manufacturer's Recommendations</i> .		Apply in dust bags. Do not contaminate feed or water.
	- 1% dust	Shaker Can—Dust evenly into hair over the head, neck, shoulders, back and tail-head. Apply not more than 2 ozs/animal.		Repeat as necessary.
	Ruelene - 0.375% as spray - 6.2% as pour-on - 9.4% ready-to-use	1.5 gallons 25% E.C. Pour-on treatment as used for grub control appears to be helpful in suppressing lice. If louse problem is severe spray is preferred.	1 meat, fat, & meat by-products.	Do not apply to meat animals within 7 days of slaughter. Observe other precautions on label.
	Ciodrin - 0.25% as spray	Use 1 qt. Ciodrin 1.1 lb./gal. E.C./12 gals. water. Spray adult animals thoroughly using 1 gal. of spray per animal. Use proportionately less spray for smaller animals. Use high pressure equipment. Avoid excessive spraying of the head.	.02 meat, fat & meat by-products.	Repeat no more often than every 7 days. <i>NOTE:</i> <i>Other formulations of Ciodrin may be available. Use these according to manufacturer's directions.</i>
	- 1% on backrubber	Mix 1 qt. 1.1 lbs/gal. E.C./4 gals. of backrubber base oil. Use 1 gal/20 ft. of cable.		
	Toxaphene - 8% in oil, or	Follow label directions for mixing.***	7 fat.	For use on backrubbers. Use 1 gal/20 ft. of cable. Do not allow cattle access to toxaphene backrubbers within 28 days of slaughter, or access to ronnel backrubbers within 14 days of slaughter. Do not mix insecticides with used motor oil.
	Methoxychlor - 5% in oil or	Follow label directions for mixing.***	3 fat.	
	Ronnel (Korlan) - 1% in oil	Mix 1 gal. Korlan 24E or similar oil with 27 gals. #2 fuel.***	10 fat. 4 meat and meat by-products.	
Ticks	Toxaphene - 0.5% as spray or dip	10 lbs. 40% W.P., or 0.5 gal. E.C. containing 8 lbs. toxaphene per gallon.	7 fat.	Do not apply spray within 28 days of slaughter.
	Malathion - 0.5% -1% spray	16-32 lbs. 25% W.P., or 1-2 gallons 57% E.C.	4 meat & meat by-products.	No time limitation. Do not spray calves less than 1 mo. old.
	Co-Ral - 0.125% as spray or dip	4 lbs. 25% W.P. or 4 qts. 1 lb./gal. E.L.	1 meat, fat & meat by-products.	No time limitation between application and slaughter.
	Ronnel (Korlan) - 0.75% as spray	3 gals. 24% E.C.	10 fat. 4 meat & meat by-products.	Do not apply spray within 14 days of slaughter. Do not treat sick animals.

* W.P. - wettable powder * EC - emulsifiable concentrate ** Observe label precautions
*** Mineral oils are less irritating and odorless and may be substituted for diesel or fuel oil.
* E.L.—Emulsifiable liquid.

LIVESTOCK PEST CONTROL—BEEF CATTLE (Continued)

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Interval between application and slaughter —remarks**
Ticks (Cont.)	Ciodrin - 0.1%-0.25% as spray	Use 1-2 pts. Ciodrin 1.1 lb/ gal. E.C./16 gals. water. Spray adult animals thor- oughly using 2 gals. of spray per animal for 0.1% concen- tration and up to 1 gal. spray per animal for 0.25% concen- tration. Use proportion- ately less spray for smaller animals.	.02 meat, fat & meat by-prod- ucts.	Do not apply more often than once/wk. Do not contaminate food or feed. <i>NOTE:</i> Other formulations of Ciodrin may be avail- able. Use these accord- ing manufacturer's direc- tions.
Spinose ear tick	Malathion - 0.5% as spray	16 lbs. 25% W.P., or 1 gal. 57% E.C.	4 meat and meat by-products.	Use low pressure and apply lightly inside ears. Also treat adjacent head area. No time limitation between application and slaughter.
	Ronnel (Korlan) - 5% smear	Pour or brush in ears, or apply with a swab according to manufacturer's recommen- dations.	10 fat. 4 meat and meat by-products.	
	Co-Ral - 5% dust	Dust into ear and treat ad- jacent head area. See Manufacturer's Recom- mendations	1 meat, fat & meat by-prod- ucts.	Repeat as necessary.

LIVESTOCK PEST CONTROL—SHEEP AND GOATS

By R. L. Goulding and R. R. Robinson
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Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Interval between application and slaughter —remarks**
Sheep Keds <i>NOTE:</i> <i>Preferred treat- ments are Co-Ral and diazinon dusts. These may be used conveniently at shearing time.</i>	Diazinon - 0.03% as spray - 2% as dust	0.5 lb. 50% W.P. 1.5 oz. per animal	.75 in or on fat, meat & meat by-prod- ucts.	Do not treat within 14 days of slaughter. Do not use on goats.
	Co-Ral - 0.125% as spray or dip - 0.5% as dust	4 lbs. 25% W.P. (sheep and goats) 1 to 2 ozs. per animal (sheep only)	1 meat, fat & meat by-prod- ucts.	Do not apply within 15 days of slaughter. Do not use on lactating dairy goats. Do not use within 14 days of freshening of dairy goats.
	Toxaphene - 0.5% as spray - 0.25% as dip - 5.0% as dust	<i>As spray</i> —10 lbs. 40% W.P., or ½ gal. 8 lb/gal. E.C. <i>As dip</i> —5 lbs. 40% W.P., or 0.25 gal. 8 lb/gal. E.C. <i>As dust</i> —1 to 2 oz. per an- imal	7 fat.	Do not apply within 28 days of slaughter. Do not use on dairy goats.
	Malathion - 0.5% as spray - 5% as dust	16 lbs. 25% W.P., or 1 gal. 57% E.C. 1 to 2 oz. per head	4 meat & meat by-products.	No time limitation be- tween application and slaughter. Do not apply to dairy goats.
	Ronnel (Korlan) - 0.25% as spray	1 gal. 24% E.C.	10 fat. 4 meat and meat by-products. 1.25 milk fat.	Do not apply within 28 days of slaughter. Do not use on lactating dairy goats. Do not use within 7 days of freshening of dairy goats.

* W.P. - wettable powder * EC - emulsifiable concentrate ** Observe label precautions
* E.L.—Emulsifiable liquid.

LIVESTOCK PEST CONTROL—SHEEP AND GOATS (Continued)

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Interval between application and slaughter —remarks**
Lice	Toxaphene - 0.5% as spray - 0.25% as dip - 5.0% as dust	As <i>spray</i> —10 lbs. 40% W.P., or 0.5 gal. 8 lbs./gal. E.C. As <i>dip</i> —5 lbs. 40% W.P., or 0.25 gal. 8 lbs./gal. E.C. As <i>dust</i> —1 to 2 oz. per ani- mal.	7 fat.	Do not apply within 28 days of slaughter. Do not use on dairy goats.
	Malathion - 0.5% as spray - 5% as dust	16 lbs. 25% W.P. 1 to 2 oz. per animal.	4 meat & meat by-products.	No time limitation be- tween application and slaughter. Do not apply to dairy goats.
	Ronnel (Korlan) - 0.25% to .5% as spray or dip	1 to 2 gals. 24% E.C.	10 fat. 4 meat and meat by-products. 1.25 milk fat.	Do not apply within 28 days of slaughter. Do not use on lactating dairy goats. Do not use within 7 days of freshening of dairy goats.
	Diazinon - 0.03% as spray - 2% as dust	0.5 lb. 50% W.P. (sheep only) 1.5 oz. per animal (sheep only)	0.75 fat, meat & meat by-prod- ucts.	Do not apply within 14 days of slaughter. Do not use on goats.
	Co-Ral - 0.06% as spray or dip	2 lbs. 25% W.P. (sheep and goats)	1 meat, fat & meat by-prod- ucts.	Do not apply within 15 days of slaughter. Do not use on lactating dairy goats. Do not use within 14 days of freshening of dairy goats.
Wool Maggots	Co-Ral - 0.125% as spray	4 lbs. 25% W.P. (sheep and goats)	1 meat, fat & meat by-prod- ucts.	Do not apply within 15 days of slaughter. Do not use within 14 days of freshening of dairy goats.
	Ronnel (Korlan) - 0.5% as spray	2 gals. of 24% E.C.	10 fat. 4 meat and meat by-products. 1.25 milk fat.	Do not apply within 28 days of slaughter. Do not use within 14 days of freshening of dairy goats.
	Ciodrin - 0.5% as spray	Mix 1 qt. 1.1 lbs./gal. E.C./6 gals. water. Spray animal completely with 1 pt. of mix- ture.	0.02 milk, meat, fat & meat by- products.	Repeat as required but not more often than once every 7 days.
	Ciovap - 0.25% as spray (Mixture of 1% Ciodrin & ¼ % Vapona.	Mix 2.5 pts. Ciovap E.C./16 gals. water. Spray animal completely with up to 1 gal. of solution. Apply second application 14 days later.	0.02 (Ciodrin), 0.02 (Vapona) in milk, meat, fat & meat by-prod- ucts.	Repeat as required but not more often than once every 7 days.

* W.P. - wettable powder * EC - emulsifiable concentrate ** Observe label precautions
* E.L.—Emulsifiable liquid.

LIVESTOCK PEST CONTROL—SWINE
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Pest	Insecticide	Dosage*		Interval between application and slaughter—remarks**
		Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	
Lice <i>NOTE:</i> <i>Do not use rotenone on swine. It may cause serious reaction.</i>	Malathion - 0.5% as spray	16 lbs. 25% W.P., or 1 gal. 57% E.C.	4 meat & meat by-products.	No time limitation.
	- 4-5% as dust	Treat thoroughly		
	Methoxychlor - 0.5% as spray	8 lbs. 50% W.P.	3 fat.	No time limitation.
	Co-Ral - 0.06% as spray	2 lbs. 25% W.P.	1 meat, fat & meat by-products.	No time limitation.
	- 1% dust	Shaker Can—Direct Application. Apply not more than 2 ozs./animal as a uniform coat to shoulders and back. Bedding Treatment. Apply 2 ozs. uniformly over each 30 sq. ft. of fresh, dry bedding. If severe infestation treat both animals and bedding as directed above.		Direct Application. Repeat as necessary but not more often than once every 10 days.
	Ronnel (Korlan) - 0.25% as spray	1 gal. 24% E.C.	3 fat. 2 meat and meat by-products.	No time limitation.
	- 5% granules	0.5 lb. granules/100 sq. ft. applied evenly over bedding.	3 fat. 2 meat and meat by-products.	Remove treated bedding 14 days prior to slaughter.
Toxaphene - 0.5% as spray - 5% as dust	10 lbs. 40% W.P., or 0.5 gal. 8 lbs./ gallon E.C.	7 fat.	Do not apply within 28 days of slaughter.	
Ciodrin - 0.25% as spray	2 pts. 1.1 lb/gal. E.C./12 gals. water. Spray animals thoroughly with 1-2 qts.	.02 meat, fat & meat by-products.	Repeat within 2-3 weeks but not more often than once every 7 days.	
- 3% dust	Dust thoroughly, especially the neck and around the ears with 1-2 ozs. of dust/animal or area.		Repeat in 3-4 weeks if necessary.	
Hog Mange	Malathion - 0.5% as spray	16 lbs. 25% W.P., or 1 gal. 57% E.C.	4 meat & meat by-products.	No time limitation.

LIVESTOCK PEST CONTROL—HORSES
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Pest	Insecticide	Dosage*		Restrictions—remarks**
		Amt. of insecticide per 100 gallons spray or other as indicated		
Biting Flies (horn flies) (stable flies)	Co-Ral - 0.06% as spray	2 lbs. 25% W.P.		Dusts may be the preferred treatment. Horses often react violently to higher spray pressures. It may be safer to apply dilute sprays with a sponge. Repeat if necessary but not more often than once every 4 days.
	Malathion - 0.5% as spray or	16 lbs. 25% W.P.		
Lice and Ticks	- 4-5% as dust			
	Sevin - 0.5% as spray	5 lbs. 80% sprayable insecticide.		
Bots	Anthon (90% trichlorfon)	5 grams per 250 lbs. body weight. Use required dosage dry or dissolved in water and mix with the amount of feed to be consumed at one feeding. Allow horse to consume all of the medicated feed before additional feed is given. Withdrawal of feed 12 to 18 hours prior to treatment will assure complete ingestion.		Do not treat sick or debilitated horses, colts less than 4 mos. old, or mares in the last month of pregnancy. Do not exceed recommended dose. Do not administer in conjunction with, or for 10 days after, organic phosphates or cholinesterase inhibitors. Do not administer intravenous anesthetics, especially muscle relaxants for a period of 2 weeks after treatment. Do not treat horses to be used for food.

* W.P. - wettable powder
** Observe label precautions

CAT AND DOG PEST CONTROL
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Pest	Insecticide and dosage***	Remarks**
Fleas Ticks	Sevin - 5% as dust	Rub into the hair coat to the skin and apply to sleeping quarters weekly. Do not treat kittens under 4 weeks old. Infested lawn areas may be sprayed using Sevin at the rate of 2 lbs. 50% W.P. in 150 to 200 gals. for each 5,000 sq. ft. of established lawn area.
Fleas Lice Ticks	Malathion - 5% pressurized spray - 4 to 5% dust - 57% E.C. as spray	Follow label directions for use. Malathion 4-5% dust may be used to treat animals bedding or sleeping quarters. Malathion 57% E.C. at the rate of 5 ozs./gal. of water applied at rate of 1 gal. spray per 1000 sq. ft. of surface to treat pet quarters.
	Vapona*** - 0.2% as spray or sponge on.	Follow label directions for dilution. <i>For Veterinarian Use Only.</i> Spray or sponge to thoroughly wet animal. Follow the manufacturer's precautions.
Fleas (In lawns and kennel runs)	Ronnel (Korlan) - 1% as spray 1 pt. 24% E.C. per gallons of water	Spray infested areas. Keep children off area until spray has dried.
Dog Mange	Effective treatment of mange is best carried out under the supervision of a veterinarian.	

** Observe label precautions

*** Commercial powders containing malathion, methoxychlor, lindane, rotenone or pyrethrum are available. Use these as directed on the label. Lindane should not be used on cats, or on pups under 2 months old.

**** A collar made of a resin containing 10% Vapona is currently available for use on dogs. Extensive tests in Oregon indicate a high level of effectiveness against fleas for as much as 12 weeks. Dogs frequently exposed to rain or who play in water are not well protected by this device. This collar should not be used on cats. A 5% Vapona resin collar is now available for use on cats. Skin reactions on the neck have occasionally been observed in both dogs and cats shortly after collars have been installed. Collars which are too tight and animals subject to wetting appear to be contributing factors. A pendant device containing Vapona which is hung on leather or plastic leash collars is also available for use on dogs only. The same precautions as stated for the 10% collars apply.

CONTROL OF POULTRY PESTS
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Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance	Interval between application and slaughter —remarks**
Lice and Mites <i>For Direct Application To Birds</i> (chickens, ducks, geese and turkeys)	Co-Ral - 0.25% as spray	6 ozs. (2 cupfuls) 25% W.P. in 5 gals. of water. Apply as a low pressure spray using 1 gal/100-125 birds.	1 meat, fat & meat by-products. 0.1 eggs.	No time limitation. Repeat as necessary, but not more often than weekly.
	Malathion - 0.5% as spray	2.5 ozs. 25% W.P., or 2T 57% E.C./gal. water, using 1 gal/100-150 birds.	4 meat & meat by-products. 0.1 eggs.	No time limitation.
	- 4.5% as dust	Use 1 lb. per 100 birds.		Dust birds thoroughly especially under wings and around vent.
	Sevin - 0.5% as spray	6.5 ozs. 50% W.P. in 5 gal. of water. Apply as a low pressure mist spray using 1 gal/100 hens in cages, on litter, or on slatted floor.	5 meat & fat. 0 eggs.	Do not apply within 7 days of slaughter. Do not repeat application within 4 wks. Avoid direct contamination of eggs. Do not treat nest litter. Do not contaminate feed or water.
	- 5% as dust	Use 1 lb. per 100 birds.		
	- 4.0% as water mist	10 ozs. 50% W.P./gal. water. Use 1.5 gals/1000 birds. Apply with electric fog machine.		

* W.P. - wettable powder

** E.C. - emulsifiable concentrate

** Observe label precautions

CONTROL OF POULTRY PESTS (Cont.)

Pest	Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Restrictions - remarks**
Lice and Mites (Cont.)	Rabon - 0.5% as spray	Mix 4 lbs. 50% W.P./50 gals. of water or 1 gal. 2 lbs/gal. E.C./5 gals. of water. Spray vent and fluff areas with high pressure equipment at the rate of 1 gal. per 100 birds.	0.1 eggs, meat & meat by-products. 0.75 fat.	Treat thoroughly but repeat no more often than every 2 weeks, if necessary.
	Co-Ral - 0.25% as spray	6 ozs. 25% W.P. in 5 gals. water. Use about 1 gal. spray/1000 sq. ft. of surface.	1 meat, fat & meat by-products.	No time limitation. For self treatment per 50 birds mix 5T 25% W.P. with 3 lbs. fine sand, dust or talc and place in shallow box.
<i>Application To Litter And Housing</i>	- 0.5% as dust	Apply to litter at the rate of 5 lbs. per 100 sq. ft.	0.1 eggs.	
	Malathion - 0.5% as spray	5 ozs. 25% W.P., or 4T 57% E.C./gal. of water. Use 1-2 gals. spray/1000 sq. ft. of surface.	4 meat & meat by-products. 0.1 eggs.	No time limitations. Apply spray to litter, walls and ceilings. Force spray into cracks and crevices.
	- 4.5% as dust	Use 1 lb/50-60 sq. ft. of litter, floors and walls.		
	Sevin - 0.5% as spray	6.5 ozs. 50% W.P. in 5 gals. water. Use 1-2 gals/1000 sq. ft. of surface.	5 meat and fat. 0 ext. eggs.	Apply to walls, litter or roost surfaces. Repeat as needed. Ventilate while applying. Avoid contamination of nests, eggs, and feeding and water troughs. Do not house birds in treated houses within 7 days of slaughter.
	- 5% as dust	Use 1 lb/40 sq. ft. of litter.		
	Dibrom - 0.3% as spray	1 pt. 37% E.C. in 20 gals. water. (Use only 37% Fly Killer D formulation.)	NR (PP)	Spray roosts, perches, walls of houses, nests, and other areas. Birds may be present while spraying.
	Rabon - 0.5% as spray	Mix 4 lbs. 50% W.P./50 gals. of water or 1 gal. 2 lbs/gal. E.C./ gals. of water. Apply evenly to walls, litter, roosts and cracks at the rate of 1-2 gals/1000 sq. ft.	0.1 eggs, meat & meat by-products. 0.75 fat.	Birds can be present.
Lice and Mites Roost Paints	Rabon - 1% as spray	Mix 4 lbs. 50% W.P./25 gals. of water or 1 gal. 2 lbs/gal. E.C./25 gals. of water. Paint brush or hand spray 1 pt. per 100 ft. of roost. Stir occasionally and apply thoroughly.	0.1 eggs, meat & meat by-products. 0.75 fat.	
	Malathion - 3% as roost paint only	¾ cup 57% E.C./gal. of water. Apply 1 pt. of solution to 150 ft. of roost.	4 meat & meat by-products. 0.1 eggs.	No time limitation.
	Nicotine sulfate - 40% as roost paint only	Apply 1 pt. to 100-200 ft. of roost.	NR (PP)	No time limitation.

* W.P. - wettable powder * EC - emulsifiable concentrate ** Observe label precautions

FLY CONTROL

By R. L. Goulding and R. R. Robinson
Entomology Department, Oregon State University

Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	<i>Restrictions remarks**</i>	
IN AND ABOUT DAIRY BARNs NOTE: <i>Under ordinary conditions, use of insecticides in the milk room is unnecessary if effective fly control is carried on in other areas of the dairy.</i>	Dry or wet basis containing Dipterex, Korlan (ronnel), diazinon, DDVP, malathion or Dibrom.	Use as recommended by manufacturer	Read label to determine if use of bait formulation or treated fly cords is permissible in milk rooms. Use dimetilan or Vapona treated fly cords or plastic strips or other devices as recommended by the manufacturer. Do not contaminate water, feed, milk or milking equipment. Apply sprays (except Vapona) at rate of about 1/2-1 gal/1000 sq. ft. The amount of spray needed will vary with the surface. It is generally preferable to avoid using insecticides in milk rooms or milk storage areas. If necessary, any of the sprays listed can be used in these areas except Dibrom, dimethoate, Ciodrin and Rabon.	
	Insecticide treated fly cords and plastic strips.	Use as recommended by manufacturer.		
	Dibrom - 0.3% as spray	2 1/2 qts. 37% E.C. May be sprayed around and above animals, but not directly at them.		NR (PP)
	Dimethoate - 1% as spray	4 gals. 2 lbs/gal. E.C. Remove animals from buildings prior to spraying.		.002 milk. .02 meat, fat & meat by-products.
	Ciodrin - 1% as spray	2 qts. 1.1 lb/gal. E.C./6 gals. water. Apply 1 gal/1000 sq. ft. to walls, eaves, resting and breeding places.		.02 milk, fat, meat & meat by-products.
	Vapona - 0.5% as spray	1 gal. 4 lb/gal. E.C. Use 1 qt. of spray solution/1000 sq. ft. of surface.		.02 milk, fat, meat & meat by-products.
	Rabon - 1-2% as spray	Mix 4-8 lbs. 50% W.P./25 gals. of water or 1-2 gals. 2 lbs/gal. E.C./2 gals. of water. Apply to walls and ceilings to point of run-off at the rate of 1 gal. of mixture/500-1000 sq. ft. of surface area.		1.5 fat. 0.5 meat, meat by-products, and milk fat.
	Ronnel (Korlan) - 0.5% to 1% as spray	2 to 4 gals. 24% E.C.		10 fat. 4 meat and meat by-products. 1.25 in milk fat.
	Malathion - 1% as spray	32 lbs. 25% W.P., or 1 1/2 gals. 25% E.C.		0.5 milk fat.
	Pyrethrins + synergist as spray. 0.1%-0.2% pyrethrins + 1%-2% synergist	Use as space spray in accordance with manufacturer's directions.		0.5 milk fat. 0.1 meat, fat & meat by-products.
GENERAL FLY CONTROL— OTHER THAN DAIRY BARNs, MILK ROOMs OR POULTRY HOUSEs (Agricultural premises) NOTE: <i>The term Ultra Low Volume (ULV) applies when the total volume of spray to be applied per acre is 1/2 gal. or less and is applied undiluted.</i>	Malathion ULV (See note - first column)	Apply by aircraft as undiluted (ultra low volume) spray at the rate of 0.6 lb. per acre to beef feed lots and holding pens.	4 meat & meat by-products.	
	<i>Any of the materials recommended for use in and about dairy barns may be used. In addition, any of the materials listed below may be used outside barns other than dairy.</i>		Apply sprays to the point of runoff usually at rate of about 1/2-1 gal/1000 sq. ft. The amount of spray needed will vary with the surfaces. <i>To eliminate a possible source of trace pesticide residues, dairy men should not use these materials anywhere on their premises.</i>	
	Chlordane - 1-2% as spray	20-40 lbs. 40% W.P., or 1-2 gals. 75% E.C.		non-food.
Toxaphene - 1-2% as spray	20-40 lbs. 40% W.P., or 1-2 gals. E.C. containing 8 lbs. toxaphene per gal.	non-food.		

* W.P. - wettable powder * E.C. - emulsifiable concentrate ** Observe label precautions

FLY CONTROL (Continued)

Insecticide	Dosage* Amt. of insecticide per 100 gallons as spray or other as indicated	Tolerance p.p.m.	Restrictions remarks**
<i>The term Low Volume or "Concentrate Spray" applies when the total volume of spray to be applied is adequate to uniformly cover the crop being treated, but not to the point of runoff.</i>	Baytex - 0.75-1.5% as spray	1½ to 3 gals. E.C. containing 4 lbs. per gallon.	0.1 meat, fat & meat by-products of cattle.
	Rabon - 1-2% as spray	4-8 lbs. 50% W.P./25 gals. of water for a 1-2% concentration. Apply 1 gal/500-1000 sq. ft. with a sprayer, to walls and ceilings to the point of runoff.	0.1 meat, fat & meat by-products.
FLY CONTROL IN POULTRY BUILDINGS	Malathion - 1% as spray	32 lbs. 25% W.P., or 1½ gals. 57% E.C.	4 meat, fat & meat by-products. 0.1 in eggs.
	Ronnel (Korlan) - 0.5% to 1% as spray	2-4 gallons 24% E.C.	0.3 eggs. 0.01 meat and meat by-products.
	Dibrom - 0.32% as spray	2½ qts. 41% E.C.	NR (PP)
	Dimethoate - 1% as spray	2 gallons 40% E.C.	NR (PP)
	Vapona - 0.5% as spray	Use ½ pt. Vapona 4 lb/gal. E.C. per 6 gals. water.	0.05 eggs, meat, fat, and meat by-products.
	Rabon - 1% concentration as a spray	4 lbs. 50% W.P./25 gals. of water. Apply 1 gal/500-1000 sq. ft. with a sprayer to the point of runoff.	0.1 meat, eggs & meat by products. 0.75 fat.
	Insecticide treated fly cords and plastic strips.	Use as recommended by the manufacturer.	Use dimetilan or Vapona treated fly cords or plastic strips as recommended by the manufacturer.
CONTROL OF FLY LARVAE	Diazinon - 50% E.C.	2 fluid ozs. in 5 gals. of water.	Apply as coarse spray or with sprinkling can at the rate of about 5 gals. per 500 square feet of fly breeding area, such as garbage dumps and poultry droppings. Do not apply in a manner that will permit birds coming in contact with diazinon, dimethoate, Korlan, Vapona, or Rabon treated manure.
	Malathion - 57% E.C.	10 fluid ozs. in 5 gals. of water.	
	Dimethoate - 2E	2 pts. in 5 gals. of water.	
	Ronnel (Korlan) - 24% E.C.	3 pts. in 5 gals. of water.	
	Vapona - 4 lb/gal. E.C.	6 fluid ozs. in 5 gals. of water.	
	Rabon - 50% W.P.	4 lbs/25 gals. of water.	

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OREGON STATE UNIVERSITY
EXTENSION SERVICE

Extension Service, Oregon State University, Corvallis, Joseph R. Cox, director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U. S. Department of Agriculture, and Oregon counties.