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Controlling Insects and Mites on Horses  
Michigan State University  
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Extension Specialist in Entomology  
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# Controlling Insects and Mites ON HORSES

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## WARNINGS AND INFORMATION

Pest control in livestock requires year-round management. Livestock are never free of insects and mites.

Pests can lower meat and milk production and make animals more susceptible to disease. Further injury occurs when animals rub against fences, barbed wire, etc., to relieve itching. Improperly used pesticides can injure humans and animals or result in harmful and illegal residues in meat and milk.

Pest control clearly requires that you take the following precautions:

1. Use only the suggested dosages; measure carefully.
2. Do not apply chemicals closer to slaughter than the days given in this bulletin.
3. Read labels before using, and follow all instructions on labels.
4. Provide ventilation while using pesticides.
5. Prevent drift to adjacent cropland, yards, woodlots, lakes or ponds. Some materials may kill fish or wildlife.
6. Avoid treatment when animals are sick (especially in winter), overheated or stressed (shipping, dehorning, castration, recent weaning).
7. Use dust if possible instead of spray on sick or weak animals in winter, or spray on warm day. If sprayed indoors, turn out immediately to dry. Avoid undue exposure of animals to mists and vapors. Do not apply material directly on animals unless directions permit. Read label.
8. Avoid contamination of feed and water.
9. Do not breathe any form of insecticide. Use face masks.
10. If you spill any form of insecticide on the skin, wash immediately with soap and water.

11. Do not add chemical to old dipping water. Start with fresh water to avoid poisoning animals and excess residues in meat.

12. Keep meat and milk away from contaminating chemical.

13. Do not spread treated manure on vegetable cropland unless specific materials are approved. Read label.

14. Do not contaminate feed, mangers, watering cups, milking equipment, milk, wells, ponds or streams with pesticides.

15. Store pesticides in the original, plainly labeled containers, safely locked away from livestock, pets, and children.

16. Provide ventilation during the use of all materials.

## FLY CONTROL IN BARN AND BARNYARDS

For best results, use a combination of formulations such as baits, residual sprays, larvicides, barn atomizers, etc., during the fly season. Act promptly. Treat as fly populations begin to build-up. Treat regularly.

### SANITATION

- Clean out pens as frequently as possible.
- Spread manure thinly outdoors to kill fly eggs and larvae by drying.
- Get rid of silage seepage areas, wet litter, manure stacks, wet hay or straw and other organic matter.
- Provide proper drainage in barnyards.

### SPRAYS

Barn surfaces vary in how much spray can be applied to them. Smooth surfaces take less, rough ones more. Follow instructions for each insecti-



cide. NOTE: Use no more gallons of spray than given in the tables to 1,000 square feet.

Add one of the insecticides to water as indicated in Table 1.

### BAITS

Apply baits to clean concrete or wherever flies gather. Baits can be used alone, but should be used in conjunction with wall and ceiling sprays.

Use one of the following:

**DRY BAITS** — 1% ronnel (Korlan) or dichlorvos; or 1% trichlorfon (Dipterex, Dylox, Neguvon); or 3½% malathion; or ½% naled (Dibrom). Follow manufacturers' label directions. Do not use Diazinon in dairy barns or milkrooms.

**WET BAITS** — (1) Add ½ pint of a malathion 57% EC plus 1 cup of sugar syrup to 2½ gallons of water; or 2 ounces of Diazinon 50% WP plus 1 pound of sugar in 5 gallons of water. Apply with a sprinkling can or other suitable equipment. (2) Use 1/10% trichlorfon (Dipterex, Dylox, Neguvon); or 1/10% dichlorvos; or 2% ronnel (Korlan) liquid bait. Follow label directions carefully. Do not use Diazinon in dairy barns or milkrooms.

**Warnings** — Do not apply where animals can slip and fall. Keep away from children.

**Table 1. — INSECTICIDE MATERIALS FOR SPRAY APPLICATION IN BARN.**

| Chemical   | Amount per 1,000 sq. ft. | Comments and Warnings   |
|--|--------------------------|---|
| Dimethoate, 1% in water spray.                           | 1 gal.                   | Mix 1 gal. of 23.4% EC in 25 gal. of water. Apply thoroughly as a surface spray to interior and exterior surfaces. Remove animals before spraying. Do not contaminate milk or milking equipment.                        |
| Fenthion (Baytex), 1.25% in water spray.                 | 2 gals.                  | Mix 1 quart of 93% LC in 25 gals. of water. Apply thoroughly to walls, ceilings, etc. Do not apply directly to animals. Do not use as a space spray. Do not contaminate milk or milking equipment.                      |
| Malathion, 1% in water spray.                            | 1 to 2 gals.             | Mix 8 lbs. of 25% WP or 2 quarts of 57% EC in 25 gals. of water. Apply thoroughly to walls, ceilings, etc. Do not contaminate milk or milking equipment.  |
| Ronnel (Korlan), 1% in water spray.                      | 1 gal.                   | Mix 1 gal. 24% EC in 25 gals. of water. Apply to walls, ceilings, etc. Do not contaminate milk or milking equipment.  |
| Diazinon, ½% in water spray.                             | 1 to 2 gals.             | Mix 2 lbs. of 50% WP in 25 gals. of water. Apply thoroughly to walls, ceilings and other areas where flies congregate. Do not use in dairy barns, milkrooms or poultry houses. Do not contaminate food, feed, or water. |
| Ravap (23% Rabon and 5.3% dichlorvos) 1% in water spray. | 1 gal.                   | Mix 1 gal. Ravap in 25 gals. water. Apply to walls, ceilings, etc. of beef and dairy barns, livestock sheds, calf and hog barns and other farm buildings. Do not contaminate milk or milking equipment.                 |

### FLY MAGGOTS IN MANURE

Treat manure piles with one of the following mixed in 25 gallons of water:

**Dimethoate** — 1 gallon emulsion containing 2 pounds chemical per gallon.

**Malathion** — 3 pints emulsion containing 5 pounds chemical per gallon or 8 pounds 25% wettable powder.

**Rabon** — 4 pounds 50% wettable powder.

**Ronnel (Korlan)** — 1 gallon emulsion containing 2 pounds active ingredient per gallon.

**Diazinon** — 10 ounces of 50% wettable powder. Wet the surface of the manure. It is not necessary to soak it. Repeat as needed.

**Warnings:** — Do not apply dimethoate, malathion, ronnel or Rabon to livestock unless the package label or Michigan State University literature gives instructions to do so. Do not apply chemically treated manure to vegetable cropland unless specific materials are approved.

### SPRAYS FOR FEED LOTS

Removal of manure from feedlots is a must. For sprays around fences, over manure piles and inside walls of loafing pens, use Rabon or ronnel as given for treating inside walls and ceilings of barns.

**Warnings:** — Do not spray animals directly with these materials unless other sections of this bulletin give approval. Avoid treating livestock-resting areas. Keep these clean and well bedded.

### SPRAY FOR OUTSIDE BARN

Use dimethoate, malathion, ronnel, or Fenthion as given for treating inside walls and ceilings. Follow all label instructions for use outside dairy barns. Do not apply to water and feed crops. Do not use Diazinon in dairy barns or milkrooms.

### SPACE OR AEROSOL SPRAYS

Space sprays or aerosols containing 0.1% pyrethrins and 1% piperonyl butoxide (½ fluid ounce per 1,000 cubic feet) give satisfactory knock-down and kill of flies. A 1% dichlorvos (Vapona) or naled (Dibrom) insecticide applied as a fog or mist is effective. One pint of a 1% solution will treat 8,000 cubic feet (40 x 20 x 10). Do not use this fogging solution in areas where animals have received a direct application within the previous 8 hours. Avoid contamination of milk and milk utensils. Daily use of atomizers or foggers is necessary when they are used alone. Read the label for mixing instructions.

### Abbreviations in this bulletin:

|       |   |
|-------|---|
| WP    | means Wettable Powder                       |
| EC    | means Emulsifiable Concentrate, or Emulsion |
| LC    | means Liquid Concentrate                    |
| SC    | means Suspension Concentrate                |
| D     | means Dust                                  |
| Tbsp. | means tablespoon                            |
| tsp.  | means teaspoons                             |

### HORSE PESTS

A number of different flies attack horses, mules, donkeys and ponies. The most bothersome are horse flies, stable flies, horn flies, house flies and bot flies.

#### HORSE FLIES

Horse flies pass through the winter as nearly full grown larvae in the mud around lakes or water holes. They are pointed at both ends, whitish or banded with black or brown and have a fleshy ring on each body segment. They become full grown in the spring, when they pass through the pupal stage. The flies begin to appear in early summer. The females cut through the skin of the animals with knife-like mouth-parts and feed on the blood for several minutes. Eggs are laid on leaves or stems of plants near moist locations.

#### HORSE BOTS

Three kinds of bot flies are pests of horses. The common bot fly and the throat bot fly occur in northwestern and midwestern states. The third is the nose bot fly. Adult bot flies do not feed. Their sole purpose in life is to reproduce. They live from a few days to three weeks. They begin to appear in June and live until there is a heavy freeze. Eggs usually can be found on horses as soon as flies are seen. Egg laying continues as long as adults are present.

The larval stages of the bot flies develop in the digestive tract and pass out at maturity (by October). The mature bots then burrow into

the soil to pupate and later emerge as adult flies.

The largest of the three species, the common bot fly, is about the size of a honey bee. The body is covered with black and yellow hairs. The female deposits her eggs on the forelegs of the horse or occasionally on the mane, belly, neck and flanks. The throat bot female deposits her eggs

on hair under the horse's jaws. The nose bot deposits her eggs on hair near the lips.

#### LICE

Horses and other equines are attacked by two kinds of lice — a biting louse and a sucking louse. The coat about the head, withers and base of the tail becomes unkempt and full of

scurf. Parts of the body may be rubbed raw because of the irritation.

#### MANGE

Mange is caused by a small oval mite. These mites burrow beneath the skin and lay their eggs in the burrow. Excretions and the tunneling cause extreme pain and the animals rub the area until it is raw. The trouble is most evident in winter.

#### HORN FLY

**Horn Fly** — grayish-black, half the size of house fly; sucking mouth parts. Feed primarily on withers, around horns, along back. In hot weather or rain, may move to belly; on cool nights may cluster between hind legs. Eggs laid in fresh manure; hatch in about 20 hours; maggots grow for about 5 days before pupating; 5-days later adults emerge.

**Note:** Back rubbers used with year-round control will help control

horn flies, possibly other pests. Place back rubbers so as to force animals to use them — near feed supplements, water or along fenced run where animals must pass.

#### FACE FLY

**Face Flies** — resembles house flies, but darker, larger. Females have a grayish-green abdomen; hard to tell from house flies. Male abdomen has black line down center; eyes almost

touch. Males not found on animals. Female feeds around eyes, lips, in and around nostrils, and may aid spread of eye diseases. Larvae feed in fresh cow dung.

#### STABLE FLY

**Stable Fly** — ¼ in. long, grayish, seven rounded dark spots on top of abdomen; piercing and sucking beak. Lays eggs in manure, decaying vegetation. When not on animal, rests in

shade on wooden posts, trees, buildings. Prefers active animals, ears and legs.

#### HORSE FLY, DEER FLY

**Horse and Deer Fly** — ½ to 1 in. long; usually brown with brilliantly colored eyes. Smaller kinds have brown-banded wings. Females feed on blood. Maggots live in mud at bottom of shallow lakes, ponds and swamps.

**Table 2. — INSECT AND MITE CONTROL PROGRAM FOR HORSES**

| Pest           | Material and Formulation                           | Amount per Animal or Area, if Appropriate    | Comments  |
|----------------|--|--|---|
| FLIES          | pyrethrins, 0.1% in oil or EC, with 1% synergist.  | 1 fl. oz.                                    | Apply as a mist spray. Follow label directions.   |
|                | Malathion, 4% or 5% dust. (Use as bought)          | 3 to 4 tablespoons per animal                | Apply to back and neck of animals. Repeat at 10 to 14 day intervals.  |
|                | malathion, ¾% in water spray.                      | Depends on animal size and hair coat.        | Mix 1 pint 57% EC in 10 gals. of water. Apply on back and neck of animals. Repeat in about 10 to 14 days. READ THE LABEL.   |
| HORSE BOTS     | Trichlorfon (Anthon)                               | 1 packet (5 grams) per 250 lbs. body weight. | Apply after killing frost. Repeat after 3 to 4 months, but never more frequently than every 30 days. Do not treat colts under 4 months old, or mares in the last month of pregnancy. Single dose orally in feed. Feed additive. |
| LICE AND TICKS | malathion, ¾% in water spray.                      | Same as for flies (above)                    |   |
|                | Malathion, 4% dust. (Use as bought)                | Same as for flies (above)                    |   |
|                | coumaphos (Co-Ral), 0.06% to 0.12% in water spray. | Depends on animal size and hair coat.        | Mix 6.0 to 12.8 ounces Co-Ral 11.6% EC in 10 gals. of water. Repeat as necessary. READ THE LABEL.   |

## POISON INFORMATION CENTER

### DETROIT

Detroit City Health Department  
1151 Taylor Avenue 48202  
(313) TR2-1540

### POISON TREATMENT CENTERS (Information and Treatment)

#### ADRIAN

Emma L. Bixby Hospital  
818 Riverside Ave. 49221  
(313) 263-2412

#### FLINT

Hurley Hospital  
6th Ave. & Begole 48502  
(313) 232-1161 ext. 220

#### LANSING

St. Lawrence Hospital  
1210 W. Saginaw Street 48914  
(517) 372-3610 ext. 305

#### ANN ARBOR

University Hospital  
1405 E. Ann Street 48104  
(313) 764-5102

#### GRAND RAPIDS

Blodgett Memorial Hospital  
1840 Wealthy, S.E. 49506  
(616) 774-7740

#### MARQUETTE

Marquette General Hospital  
425 W. Fisher Street 49855  
(906) 228-9440 ext. 416

#### BATTLE CREEK

Community Hospital  
200 Tomkins St. 49016  
(616) 963-5521

Butterworth Hospital  
100 Michigan, N.E. 49503  
(616) 774-1774

#### MIDLAND

Midland Hospital  
4005 Orchard Drive 48640  
(517) 835-6771 ext. 308 or 328

#### BAY CITY

Bay Medical Center  
100 15th Street 48706  
(517) 893-5511

Grand Rapids Osteopathic Hospital  
1919 Boston St., S.E.  
(616) 452-5151

#### MONROE

Mercy-Memorial Hospital Corp.  
700 Stewart Road 48161  
(313) 241-6509

#### BERRIEN CENTER

Berrien General Hospital  
Dean's Hill Road 49102  
(616) 471-7761

#### HANCOCK

St. Joseph's Hospital  
200 Michigan Avenue 49930  
(906) 482-1122

#### PETOSKEY

Little Traverse Hospital  
416 Connable 49770  
(616) 347-7373 ext. 251

#### COLDWATER

Community Health Center  
of Branch County  
274 E. Chicago Street 49036  
(517) 278-7361

#### HOLLAND

Holland City Hospital  
602 Michigan Avenue 49423  
(616) 396-4661

#### PONTIAC

St. Joseph Mercy Hospital  
900 Woodward Avenue 48053  
(313) 858-3000

#### DETROIT

Children's Hospital of Michigan  
3901 Beaubien 48201  
(313) 494-5711

#### JACKSON

W. A. Foote Memorial Hospital  
205 N. East Street 49201  
(517) 783-2771

#### PORT HURON

Port Huron Hospital  
1001 Kearney St. 48060  
(313) 982-8511

Mount Carmel Mercy Hospital  
6071 W. Outer Drive  
(313) 864-5400 ext. 417 or 864-5536

#### KALAMAZOO

Borgess Hospital  
1521 Gull Road 49001  
(616) 383-4815

#### SAGINAW

Saginaw General Hospital  
1447 N. Harrison Road 48602  
(517) 753-3411

#### ELOISE

Wayne County General Hospital  
30712 Michigan Avenue 48132  
(313) 722-3748 8 a.m.-11 p.m.  
274-3000 11 p.m.-8 a.m.

Bronson Methodist Hospital  
252 E. Lovell Street 49006  
(616) 383-6338 — 383-6386

#### TRAVERSE CITY

Munson Medical Center  
Sixth Street 49684  
(616) 947-6140 ext. 280