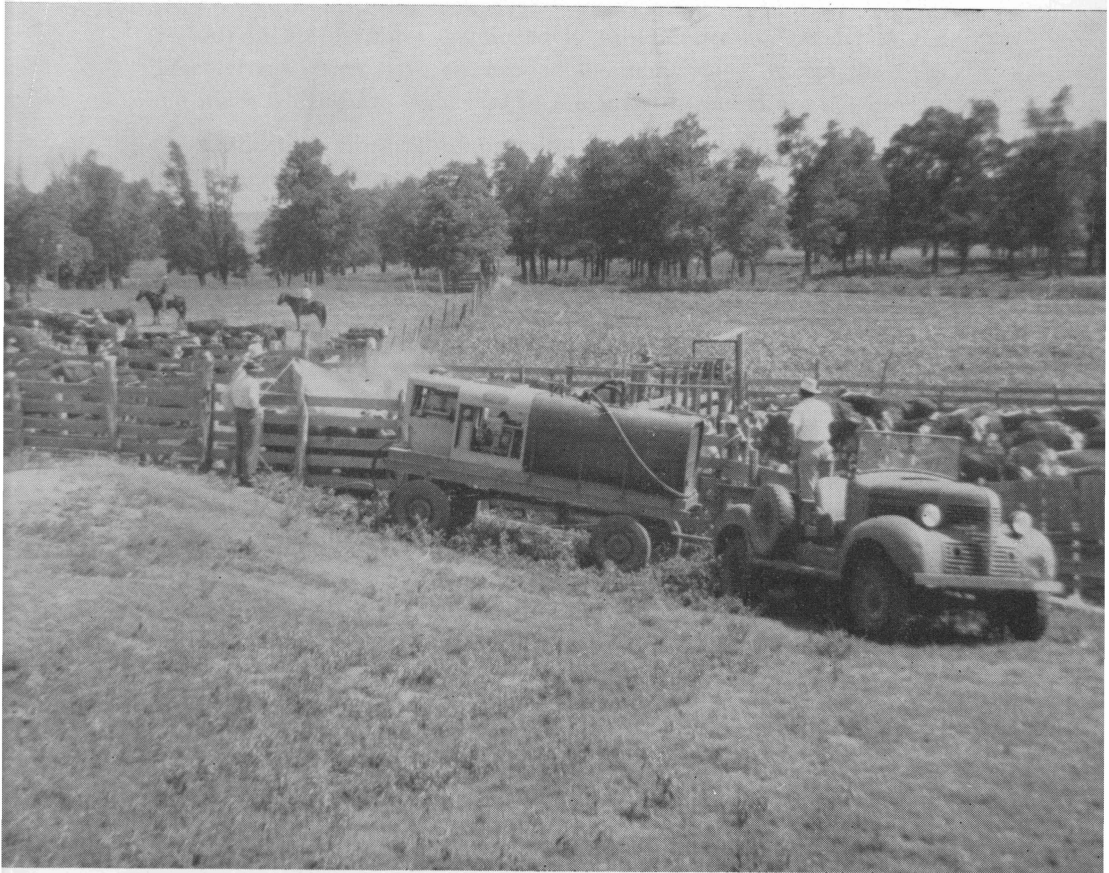


External Parasites Of Livestock And Their Control

TERRY A. & M. COLLINS



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External Parasites Of Livestock And Their Control

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All of the parasites mentioned in this publication belong to the insect group which have six legs in the adult stage, except the ticks and mites which have eight legs in the adult stage and are not insects.

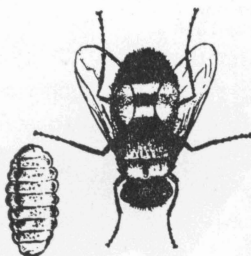
Cattle that are free of parasites have a better appearance, are healthier, and more productive than infested cattle.

The habits, damage, and control for the more important external parasites that attack livestock are discussed in this publication.

PESTS OF CATTLE

HEEL FLIES AND CATTLE GRUBS

Heel flies are the parents of the cattle grub. Cattle are often seen in the spring running from heel flies, or standing in water to themselves running from flies, and the wounds often become infested with screw worms. There is a tremendous reduction in milk flow in the spring for six to eight weeks during the heel fly season. Infestation of these flies begins on farms where they are protect themselves from the flies which are trying to lay their eggs. Cattle lose weight by excessive running, or standing in water and not feeding. Many times cattle injure found since they do not fly over a distance of one-half mile.



Heel Fly and
Cattle Grub

The grubs hatch from the eggs laid usually below the hock, and bore into the flesh at the point of hatching. They spend seven to eight months tunneling around in the animal's body. This causes a loss of ten to fifteen percent in feed. Two pounds of choice meat from every grubby animal slaughtered must be trimmed away. Hides with

grub holes are not useful for shoe leather and many other purposes. The grubs move up to the back in the fall and winter and finish their development there.

The first treatment for cattle grub control should be given in the fall of the year when grubs are mature and ready to drop to the ground. Mature grubs are dark brown to black when ready to drop out. Two additional treatments at 30-day intervals should be given, because all grubs do not mature at the same time. For complete control, four applications must be given at 21-day intervals.

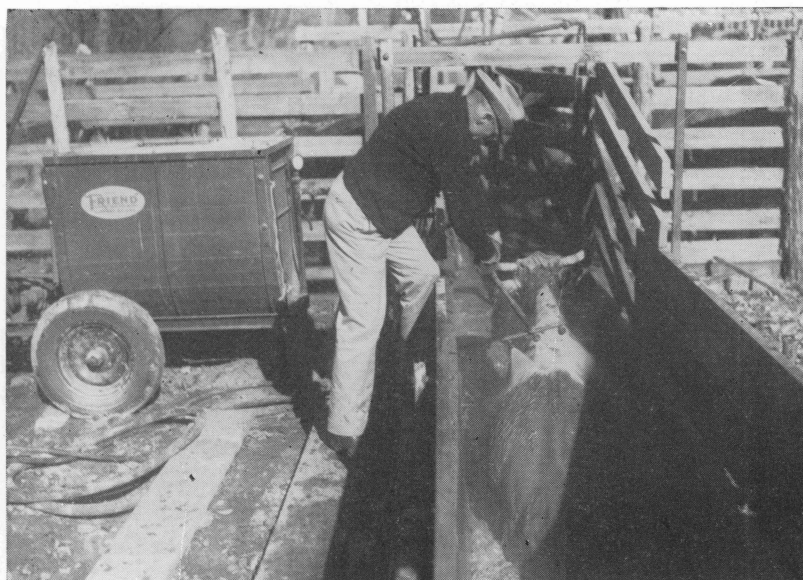
Rotenone is the most effective insecticide against the cattle grub. It can be applied either as a dust for small herds, or as a spray for large herds.

1. Dust backs of animals thoroughly with three ounces of a mixture consisting of one part by weight of five percent rotenone to two parts by weight of either pyrophyllite, tripoli earth, or volcanic ash. A fruit jar with 15 holes in the lid one-fourth inch in diameter is best for applying dust. Rub dust down to the skin with finger tips.

2. Spray backs of animals with one-half gallon per animal using seven and one-half pounds of five percent rotenone per 100 gallons of



Treating backs with rotenone powder for cattle grubs.



Spraying for cattle grubs.

water. A sprayer producing not less than 250 pounds of pressure is desirable.

CATTLE LICE

Three species of lice found on cattle are blood suckers. The other one is a biting louse. Lousy cattle are unthrifty and do not gain or even maintain their weight. The hair is rough and coarse and sometimes large hairless patches on the neck and body are caused by the animal rubbing the irritated area. Animals rubbing on fences often injure themselves making it possible for screw worms to get into the wounds.



Cattle Lice

Lice are more abundant and injurious to cattle during the winter and spring months when the hair is long. Therefore, the best time to treat cattle for lice is in the fall of the year. Both rotenone and DDT are effective for lice control. If rotenone is used, two treatment at 14-day intervals must be given for control. The animals can be dipped or sprayed with one pound of five percent rotenone, ten pounds of wettable sulphur per 100 gallons of water, or with eight pounds of 50



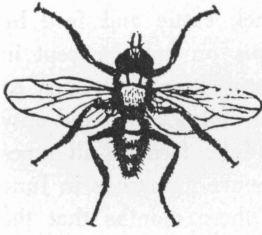
Steer rubbing to relieve irritation caused by cattle lice.

percent DDT wettable powder per 100 gallons of water. A single treatment thoroughly applied with DDT will control the lice. When animals are treated for hornfly control in the spring at least twice at 14 to 16-day intervals and thoroughly wet with 8 pounds of 50 percent DDT wettable powder per 100 gallons of water, the lice are also controlled. No treatment for lice is necessary the following fall unless lousy infested animals are added to the herd.

The low toxicity of methoxychlor (the methoxy analogue of DDT) to animals is an important point in favor of this insecticide. Also this chemical may be considered for controlling lice, hornflies, house flies and other parasites except ticks and mites, under conditions where DDT has not given satisfactory control. This material is not readily absorbed through the animal's body nor does it show up in the milk as is true for other chlorinated hydrocarbon insecticides. For this reason it is recommended that methoxychlor be substituted for DDT at the same dosage on dairy cattle producing milk.

HORNFLIES

Hornflies are blood sucking flies and when animals are heavily infested they lose weight. There is a considerable loss in milk flow



Horn Fly

when the flies are present. Hornflies feeding in clusters often cause wounds that are readily infested with screw worms. Treated animals have gained as much as one-third to one pound per day during the fly season over untreated animals.

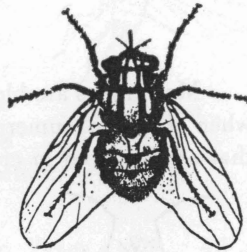
DDT is the most effective control for hornflies. Animals sprayed or dipped with eight pounds of 50 percent DDT wettable powder per 100 gallons of water are protected from hornflies for at least ten to fifteen days. Usually two or three treatments with DDT in the spring and early summer and one in the fall protects the cattle from hornflies for the year. However, more treatments are necessary in the southern part of Texas. The animals should be treated when 20 to 25 flies per animal are present.

For dairy animals in milk production, use methoxychlor in place of DDT at the same strength and apply at the same interval.

STABLE FLIES

Stable flies are blood sucking flies and cattle do not gain, or even maintain their weight when stable flies are abundant. There is also a loss in milk flow when they are abundant.

Treating cattle is not the most effective control for stable flies. They breed in straw and other moist litter on the ground and spend most of their time in the adult stage resting on the walls and other surfaces around the barn or stable. Spraying the interior of the barn with five percent DDT at six to eight week intervals during the fly season is the most

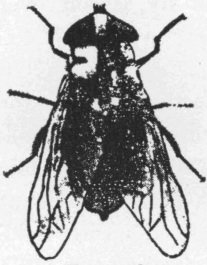


Stable Fly

effective control for the stable fly. The spray may be either DDT in oil or emulsions. Use one gallon of five percent DDT spray per 1,000 square feet of surface. Removing the straw and other litter from in and around the barn at weekly intervals is most important in reducing the stable fly population.

HORSE FLIES

Horse flies are the largest flies that attack cattle and feed by sucking the blood. They are seldom numerous on cattle except in areas where cattle are pastured near streams or marsh areas. The immature stages are found only in water or mud and the adults feed on all types of livestock. The flies are more numerous in June and July and it is during these months that the principal damage is done.



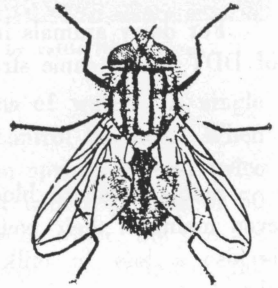
Horse Fly

Unfortunately, there is no practical treatment that can be given to cattle to control the horse fly, although several insecticides are now under investigation for horse fly control.

HOUSE FLIES

House flies do not suck blood, but when they are numerous on livestock they are annoying. It has been reported that house flies may spread pink eye from one animal to another.

Treatment as suggested for stable fly control is the best control for house flies.

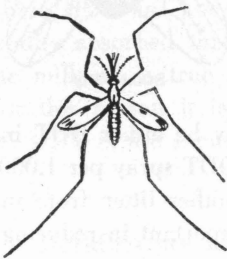


House Fly

MOSQUITOES

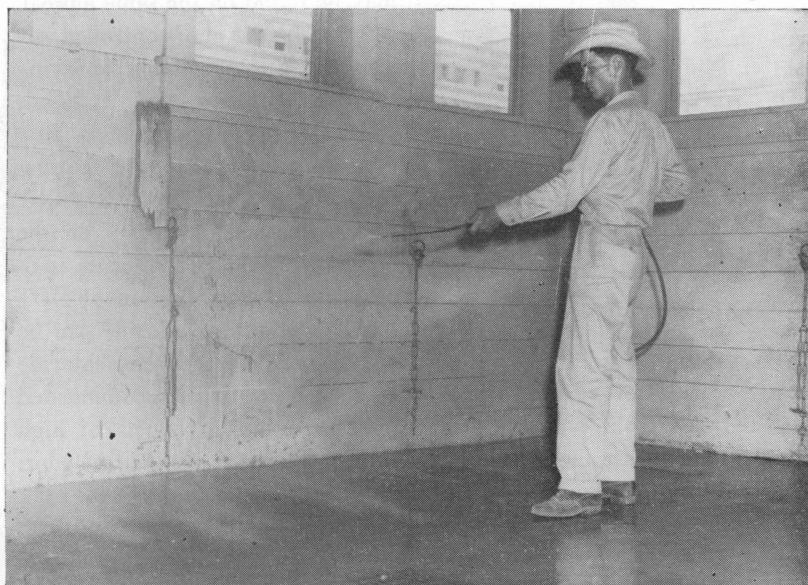
Mosquitoes are blood sucking insects and cause cattle to lose weight when they are numerous. Mosquitoes cause more damage to cattle that are pastured in creek and river bottoms, and along the Gulf Coast.

Animals that are sprayed or dipped at two week intervals during the mosquito season with eight pounds of 50 percent DDT wettable powder per 100 gallons of water have some protection from mosquito attacks.



Mosquito

Substitute methoxychlor for DDT at the same dosage on dairy animals in milk production.



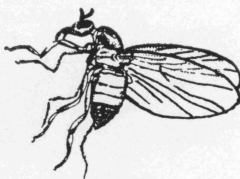
Spraying the interior of barns and stables with DDT to control stable and house flies.

BUFFALO GNATS

Buffalo gnats are tiny black flies that suck blood from cattle. Their habits are similar to the habits of mosquitoes, and they are found in the same areas. Buffalo gnats are seldom a problem except after river overflows and most of the overflows come in the spring.

Treating cattle with eight pounds of 50 percent wettable DDT per 100 gallons of water has given protection to cattle for 12 to 15 days.

Substitute methoxychlor for DDT at the same dosage on dairy animals in milk production.



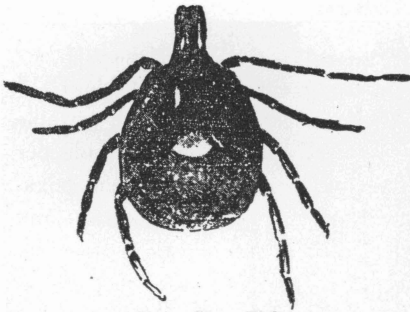
Buffalo Gnat

TICKS

There are four ticks that are common to Texas cattle. All of the ticks are blood suckers and cause the cattle to lose weight if numerous. Screw worms often infest the wounds made by the feeding of the ticks.

LONE STAR TICKS

Lone Star ticks are more injurious to cattle in south, central and East Texas. They may be found on any part of the body. All stages



Lone Star Tick

may be found on the same animal. This tick can be controlled by dipping or thoroughly spraying the cattle at two week intervals starting as soon as the ticks first appear in the spring and continuing until the ticks are controlled. Recent experimental data on the use of benzene hexachloride indicates that a combination of DDT with benzene hexachloride can be

safely recommended for the control of ticks. If benzene hexachloride is to be used for controlling any livestock pests, it is recommended that only wettable powder formulations be used. Products of high gamma content are the least objectionable from the standpoint of odor. This insecticide should not be applied on dairy animals in milk production or on beef animals that are to be slaughtered within 30 days. In view of its toxicity, particularly to young animals, the concentration should be held down to 0.025% to 0.030% gamma isomer.



Treating ears with Stock 1029 for spinose ear ticks.

The recommendation is as follows: When ticks or lice are a problem with livestock producers, the use of a material containing .03% wettable gamma benzene hexachloride and .5% wettable DDT in water is recommended. The formula is: 8 pounds of 50% wettable DDT and 4 pounds of 6% wettable gamma benzene hexachloride per each 100 gallons of water. First mix the DDT and benzene hexachloride in a small amount of water, then add this to the spray tank or dipping vat. Since benzene hexachloride comes in varying percentages of gamma content the following table may be used.

NUMBER OF POUNDS OF BHC POWDER PER 100 GALLONS OF WATER TO OBTAIN .03% GAMMA

<i>If percent gamma to be used is</i>	<i>Use this poundage per each 100 gallons of water</i>
5%	5
6%	4
8%	3
10%	2½
12%	2
25%	1
33%	¾

SPINOSE EAR TICKS

The spinose ear tick is common throughout most of Texas, especially in the west and northwest part of the state. It attacks cattle, horses, sheep, goats, deer, and occasionally man. The immature stages of the tick attach in the ears. When fully fed, the nymph drops to the soil and molts to the adult stage. The adult never feeds.

Treat the area immediately surrounding all salt, mineral and feed troughs with equal parts of kerosene and lubricating oil. The outside of the trough can also be sprayed with the above material.

Treating the ears of livestock with Stock 1029 has proved to be the most effective method in combatting this pest. Best method of application is by using a one-inch paint brush, completely covering the inner and outer surface of the ear. One treatment in the spring and one in the fall is usually all that is necessary if the troughs are treated monthly.



Spinose Ear Tick

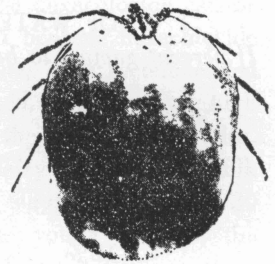
Stock 1029 is a mixture of pyridine containing 45 percent rosin, 40 percent hercolyn, and 15 percent dibutyl phthalate.

The application of the mixture of .5% DDT-.03% gamma BHC as a spray applied thoroughly to the shoulders, neck and head, particularly to the ears may assist in preventing ear ticks from infesting livestock.

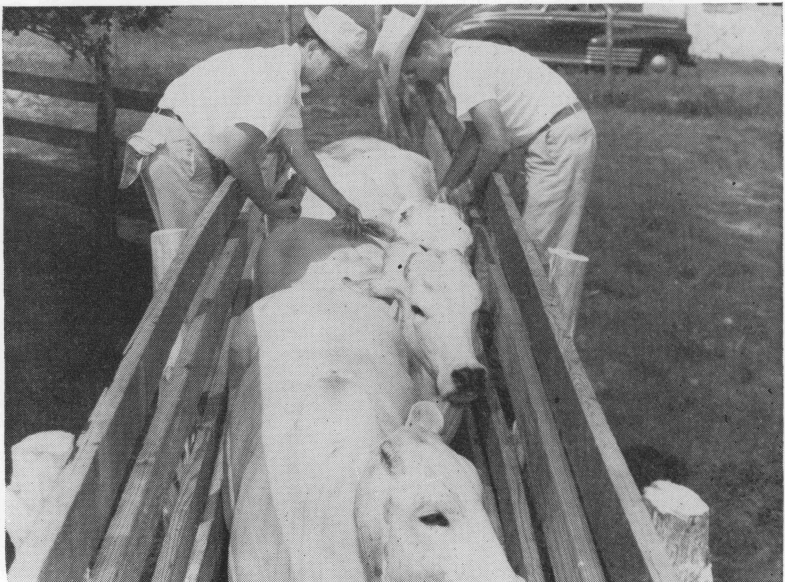
GULF COAST EAR TICK

The Gulf Coast ear tick is found along the Gulf Coast and within an area of 100 miles of the coast. The young ticks feed on birds while the adults feed on cattle and other livestock. The adults usually attach themselves to the tip of the outer ear, but are sometimes found around the eyelid or the base of the horns.

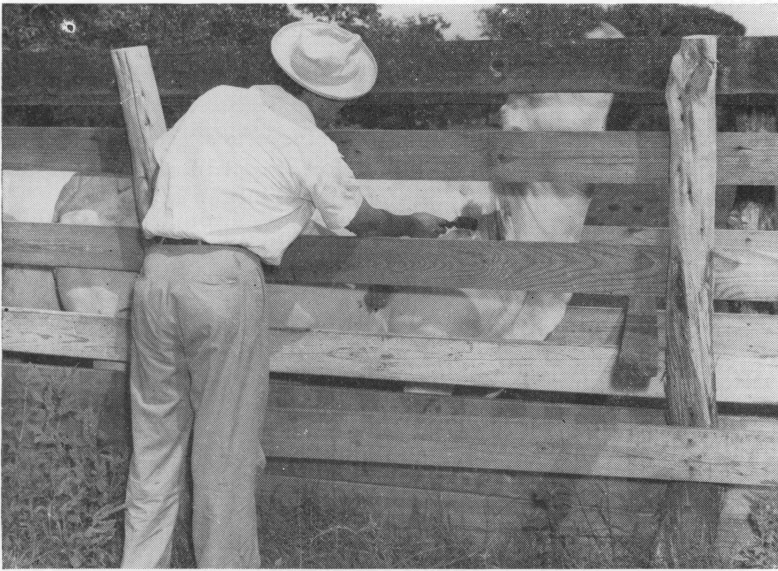
Treating inside and outside of the ear and around the base of the horns with Stock 1037 kills any ticks present and gives protection for three to six weeks. Repeat the application when ticks begin to attach themselves to the ear again. A container labeled as Stock 1037 should contain the following ingredients: Five percent



Gulf Coast Ear Tick



Treating ears with Stock 1037 to control Gulf Coast ticks.



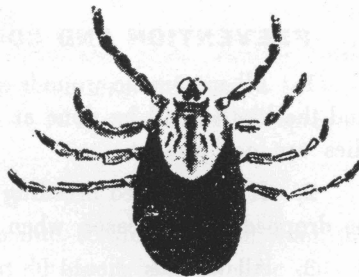
Treating wound with Smear 62 for screw worms.

technical DDT; 47 percent rosin; 33 percent hercolyn; and 15 percent dibutyl phthalate. Unless the mixture contains these exact ingredients, it is not 1037 and therefore is not recommended.

The application of the mixture of .5% DDT-.03% gamma BHC as a spray applied thoroughly to the shoulders, neck and head, particularly to the ears, may assist in preventing Gulf Coast ear ticks from infesting livestock. The humps on the back of Brahma cattle should also be thoroughly treated because the Gulf Coast ear tick sometimes attach in this area.

WINTER TICKS

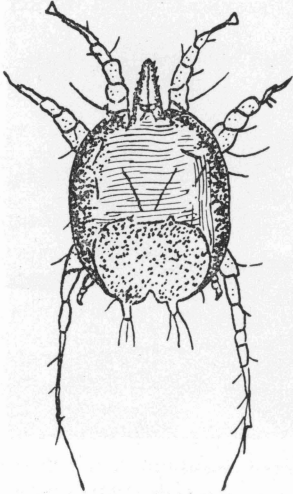
The winter tick is more common on horses, but is often found on cattle. This tick is common within a 100 mile radius of San Antonio. Winter ticks are somewhat dormant during the summer, but numerous in fall and winter. A spray or wash containing .5 percent DDT or .03 percent gamma benzene hexachloride is effective for controlling the pest.



Winter Tick

SCAB OR MANGE MITES

These tiny mites feed under the skin and cause the hair to look rough and coarse. Quite often there are large patches without hair covered with a large scab. This is not common in Texas and seldom found on animals that are treated for other parasites.



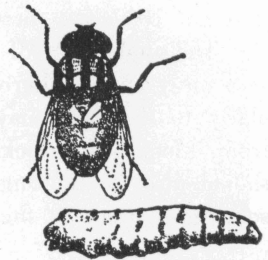
Mange Mite

The application of the mixture of .5% DDT and .03% gamma benzene hexachloride as a spray or dip thoroughly wetting the animal will eliminate the scab and mange mites.

Dipping three or four times at ten-day intervals in rotenone and sulphur will cure light cases of scab or mange. When animals are heavily infested they should be dipped in two percent sulphid sulphur, which is a lime-sulphur dip. At least three treatments at ten-day intervals should be given.

SCREW WORMS

Screw worms are flesh eating worms and will often kill an animal which is not treated. The true screw worm fly lays its eggs only in wounds of living animals. Ordinarily climatic conditions are such that the screw worm fly is eliminated from all parts of Texas during the winter months except in South Texas.



Screw Worm Fly
and Screw Worm

PREVENTION AND CONTROL OF SCREW WORMS

1. All man-made wounds such as branding, dehorning, shearing and the like should be done at a time of the year when screw worm flies are not present.
2. If a controlled breeding program is feasible, the calves should be dropped in the season when screw worm flies are not present.
3. All wounds should be treated as soon as possible with Smear

62 or Smear 82 whether screw worms are present or not, because it is a surgical dressing as well as a "worm" killer.

4. It has been claimed that wounded animals treated for horn-flies or other parasites with DDT, have not been infested with screw worms. This statement has not been substantiated by research workers.

PESTS OF SHEEP AND GOATS

SHEEP TICK

The so-called sheep tick is not a true tick but is a wingless fly which lives on the sheep and feeds by sucking blood. Irritation causes spoiled fleeces, poor gains and an unprofitable flock. Since the insect is transferred from sheep to sheep only by contact, individual flocks may be completely freed from this parasite by dipping or spraying with DDT. Use 8 pounds of 50% DDT wettable powder in 100 gallons water and apply 2 to 4 quarts per animal at 100 to 400 pounds pressure, using a power sprayer. Only the lower pressures should be used on lambs and sheared adults. Spray in late summer or early fall for best results.

Recent tests show that fleeces sprayed with DDT are not attacked in storage by wool pests such as clothes moths.

SCREW WORMS

Serious losses occur in sheep from screw worms nearly every year. Control with Smear 62 or 82; saturate wool around the wound first, then apply smear to wound itself. Repeat as needed.

WOOL MAGGOTS

They usually do not cause death directly as do screw worms; secondary infestations follow wool maggots. They appear around the rump in urine-soaked wool, also around wounds. Treat as for screw worms.

LICE

Several species of lice irritate sheep and goats, causing biting, wool-pulling and poor fleeces, and encouraging infestation by screw worms. Control by using 8 pounds of 50% wettable DDT sprays or dips as for sheep tick.

SCAB

If DDT-treated sheep continue to bite, scratch and pull wool, they may be infested with scab. Positive diagnosis can be made only by

skin scrapings from a rough or scabby area placed on a dark paper and warmed. The mites then can be seen moving about. Control by dipping or spraying, using the DDT-BHC combination which contains 8 pounds of 50% wettable DDT and enough wettable gamma BHC to bring it up to .03% gamma. Refer to the table under cattle ticks for the correct amount to be used. Repeat in 14 days if there are any ticks or mites present. Do not apply this material on lambs or kids that are in the suckling stage. If the adult animals are to be sold as meat later on, do not apply this material within 30 days of slaughter.

PESTS OF SWINE

HOG LICE

These are the largest sucking lice attacking any of the farm animals. They feed and live only on swine. Infested animals are nervous and unprofitable. Control by spraying with 8 pounds of 50% wettable DDT per 100 gallons of water. Dust the litter of the hog house, using 1 pound of 5% DDT dust per 200 square feet of floor surface.

MANGE

Hogs infested with mange scratch and rub vigorously as with lice. The skin about the ears and along the top of the neck and back is inflamed, scabby with small pimples, or cracked and raw. Control by applying as a spray or dip the DDT-BHC combination as outlined in the table under ticks. This material consists of 8 pounds of 50% wettable DDT and enough gamma of the BHC to bring the material up to .03% strength gamma. If there are any indications that the mite is still present 14 days after the treatment, apply again.

Do not apply this material to sows with suckling pigs nor on the suckling pigs. Do not apply this material on animals that are to be slaughtered within 30 days as it may taint the meat.