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## SHEEP TICK CONTROL

by

Dr. Don C. Mote and Robert W. Every.

The sheep tick or "ked" is a common external insect parasite of sheep in Oregon. The sheep tick is not a true tick but a wingless fly. True ticks are not insects but are spider-like animals which have eight legs in the adult stage. The adult sheep tick, like all true insects, has six legs. Sheep ticks feed upon the blood of their hosts, causing irritation and reducing the vitality of the animal. There may be loss of wool by rubbing. Lambs are most noticeably affected and when heavily infested are retarded in their growth and do not gain normally.

Life History of Sheep Tick Unique

The eggs hatch within the body of the female sheep tick and the larvae complete their development within the body of the tick. When fully developed, the larva is extruded from the body of the tick and at the time of birth the larva is covered with a soft white membrane, which turns brown in a few hours and becomes a hard shell or puparium. The puparia are attached to the wool fibers of the host. The period of larval development is usually about eight or ten days and it usually requires from 19-24 days before the young tick emerges from the puparium. Mating normally occurs four to five days after emergence. When accidentally detached from the body of the sheep, emergence from the puparium may not take place for six weeks or more. The pupae are unable to withstand freezing weather.

Control Methods

During the past, control has been accomplished by means of dipping. Dipping, while entirely satisfactory from the standpoint of giving good control, has certain disadvantages which are to some extent overcome by spraying with a high pressure sprayer. Spraying has been demonstrated to give good practical control of sheep ticks and the method is being well received by a number of sheep raisers. Thus far, spraying has been done at pressures of 350 to 400 pounds per square inch. Spraying with low pressure sprayers has not yet been sufficiently tested to be recommended. A spray rig with good agitation is essential.

The sheep to be sprayed may be placed in a chute or small pen made of paneling. If a chute is used it should be about 28 to 30 inches wide and 32 to 36 inches high. The length of the chute will vary, but ordinarily 25 to 30 feet is adequate. The sheep are crowded into the chute and sprayed. What is perhaps more convenient to use is a pen some 10 to 12 feet square. The sheep should not be crowded too tightly into the pen. It is necessary for the operator to get into the pen with the sheep to do the spraying and this becomes a bit of a sloppy, wet job, but not uncomfortable if water repellent clothing is worn.

It is important that the spray gun be held close to the fleece while spraying. Best results may be expected if the animal's body is thoroughly wetted. The spray should be applied particularly along the back, around the back of head and ears, around the dock and as much around the neck, breast, brisket and flanks as can be reached. A thorough spray job is essential.

Several types of spray guns have been used satisfactorily. A three-nozzle gun with about a three-foot handle is very convenient for pen spraying. A short, two-nozzle gun especially built for sheep spraying can be used to advantage although the more conventional type single nozzle orchard spray gun is adequate. When using a two- or three-nozzle gun, a size 3 or 4 disc works very well, and for the single nozzle gun a size 5 or larger disc is generally preferred.

Several types of spray booms for rapid spraying of sheep have been built by various persons. To date we have not done sufficient work with these types of equipment to make definite statements regarding their construction or efficiency. Our experience to date indicates, however, that with a spray boom, as with spraying by hand guns, thorough wetting of the sheep is essential for effective control. Individuals interested in building a spray boom may get some helpful suggestions from their county agents.

Ordinarily it is difficult to get farm flock sheep to go through the spray boom and in the time it takes to set up the boom one can spray by hand a hundred head or so, which is the average size farm flock.

If only a few head are to be treated, they may be dusted with a ten percent DDT dust. The dust should be rubbed into the fleece, covering as much of the body as is possible.

#### Suggested Control Materials and Concentrations

Experience under our Oregon conditions indicates that for spraying, the most satisfactory results may be expected using a DDT concentration of not less than 0.5 percent. It is suggested that not less than eight pounds of 50 percent wetttable DDT powder per 100 gallons of water be used in preparing the spray mixture. For those

who prefer dipping, a DDT mixture containing 0.25 to 0.5 percent DDT is suggested. Such a mixture would contain from 4 to 8 pounds of the 50 percent wettable DDT powder to 100 gallons of water. Rotenone has also been used effectively as a dip containing eight ounces of 5 percent rotenone powder to 100 gallons of water. For hand treating a few animals a 10 percent DDT dust is suggested.

#### Time and Number of Treatments

Treatment may be made any time when weather conditions are not severe. Experience thus far indicates that perhaps the best time would be during the fall months of September and October. Sheep treated at this time should be relatively free of ticks all winter and populations will not increase greatly on the ewes in the winter and move onto the lambs in the spring. New animals should be treated before putting them in the flock.

#### Amount of Material Required and Approximate Cost

The amount of spray solution required for each animal will vary, of course, but usually about two to four quarts are needed to give adequate coverage. At current prices of DDT the cost of the insecticide will be around three or four cents per head. About two or three ounces of dust will be needed for the average animal and the cost will be about that of the spray. Dipping, particularly with rotenone, would be less expensive.

#### Other Control Materials

There are proprietary dips and several of the newer insecticides which are currently being recommended by their manufacturers for the control of sheep ticks. If these are used, the manufacturer's recommendations should be followed. Our present information regarding the newer insecticides is limited, and until such time as further knowledge regarding their use in the control of sheep ticks is available, they are not being recommended.