



Wellcome Film Project

Modern Sheep Dipping

**Presented by Cooper, McDougall & Robertson Ltd, c.1960,
in collaboration with The Cooper Technical Bureau.**

A Cinechrome Film

Colour

Duration: 00:17:58:24

00:00:00:00

<Opening titles>

<Narration over film, unspecified narrator. Opening shots of herds of sheep on farmland>

Since earliest times sheep have been attacked by a number of parasites of the skin and fleece and the damage and the losses they cause have long been a heavy burden to the sheep farmer. Today the increased stocking necessary to meet the constantly expanding demand for food and clothing throughout the world provides even greater opportunities of survival for sheep parasites and the diseases they cause.

General effects of infestation in a flock are loss of condition and lowered vitality, impaired growth and quality of wool, and lowered resistance to other diseases. Strict control measures must be maintained and in all the main sheep-raising countries of the world, dipping and spraying are an essential part of the sheep farmer's routine.

Sheep are dipped for three reasons: first, to destroy external parasites and to protect the animals against them; secondly, to control the diseases which parasites cause or transmit; thirdly, to improve the wool and freshen up the sheep. But, it is not definitely

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known who originated dipping as opposed to smearing or washing. But about the year 1800, Lord Somerville in Norfolk, England, was immersing his sheep in a mixture of arsenic, soft soap and water. In 1810, a Frenchman named Tessier also used a mixture of arsenious acid and sulphate of iron, but dipping did not become a general practice until after William Cooper invented the first arsenic sulphur powder dip in 1843. William Cooper practised as a veterinary surgeon at Berkhamsted in Hertfordshire and his dip eventually penetrated to all the main sheep-raising countries of the world.

Today one of the most troublesome pests of sheep in many countries is probably the maggot fly. This feeds on carrion and lays its eggs on the dead carcasses and the living sheep. It is attracted by the odours of decomposition such as droppings and urine in the fleece. Wounds, shear cuts and similar injuries also attract the maggot fly. The female lays her eggs in quick succession, 120 to 250 at a time, and may produce some 2000 during her lifetime. These eggs hatch into maggots which immediately begin to feed; and in neglected cases, the sheep may be literally eaten alive. In a few days when the maggots are fully grown, they drop to the ground. Here they bury themselves and change into pupae from which the flies emerge later.

The sheep ked is a true insect, in fact a wingless fly, which passes all its life on the sheep. It lives by sucking blood and causes great irritation with consequent loss of condition and lowered resistance to bacterial infections. Like other parasites it is also responsible for considerable wool damage. The female gives birth to a mature maggot or larva which almost immediately changes into a hard-skinned pupa. This is the so-called egg of the ked which is attached to the fleece by a gummy secretion.

Sheep lice are another cause of loss. They're particularly troublesome in Australia and New Zealand, and in recent years have become an increasing problem in Britain. The biting or body louse seen here is found almost everywhere and does the most damage. Lice cause sheep to rub and nibble at the wool. Serious damage is done to fleece and heavily infested lambs become stunted in growth. Feeding is interrupted and the loss of wool makes the sheep less able to withstand bad weather conditions.

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Ticks, of which there are many different kinds, cause much loss of blood, irritation and unthriftiness. Great losses are also caused through the tick's ability to transmit such diseases as louping ill, tick-borne fever and heartwater. Unlike keds, ticks are difficult parasites to control since only a short part of their very long life cycle is passed on the sheep. They can also infest other animals so their chance of survival is great. The fertilised female lays 500 to 2000 eggs on the ground. From these, larvae emerge which must feed on blood at each of their several stages of development. Between each stage, they drop to the ground until finally the adult stage is reached. Pairing then takes place on the sheep or other host.

A number of skin parasites of the genus Acari or mite can also be controlled by dipping. These include certain types of mange which cause trouble in goats, camels and other animals. Seen here is the itch mite of sheep. The mite which causes sheep scab was at one time very widespread, but persistent measures have wiped out scab in Great Britain, Australia and New Zealand. However, this disease still occurs in Europe and other sheep-raising areas of the world. Scab mites cause great irritation and loss of the wool, all through sheep biting, scratching and rubbing themselves. The fleece falls off, large scabby areas of skin are exposed and the animal may die if left untreated. If a scabby sheep is scratched, it shows its pleasure by twitching its head and smacking its lips.

Since earliest times, attempts were made to control external parasites of sheep with salves and smears. It was difficult to penetrate the fleece with these and none was particularly effective. Total immersion of the sheep in a dip wash finally solved the problem of control. The equipment necessary for dipping is quite simple. The first necessity is a bath in which the sheep can be completely immersed and a water supply from which it can be filled. Suitable catching and draining pens save time and labour. The only other essentials are a plunger or broom for keeping the wash stirred and a crutch for controlling the sheep in the bath and for ducking their heads under the wash. The size and type of bath to install depends on the number of sheep to be dipped. A bath of 240 gallons is suitable for flocks of up to 800 sheep, but for small breeds one holding up to 170 gallons may be preferred.

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When installing baths, it is important to have them deep enough. It is better to allow too much depth than too little. The capacity of the bath must also be accurately determined. Carefully measured quantities of water should be added to it and the levels recorded. Small farmers overseas may dip their few sheep or goats in an African Kitui bath, which is merely a drum sunk in the ground. Another type of bath found in East Africa and elsewhere is the circular swim bath holding about 800 gallons. The operator stands on an island in the middle and one or two men can control several sheep together in the bath. Biggest of all are the long swim baths needed for dipping the large flocks of Australia and South America. These are usually of concrete and hold anything up to 3000 gallons of wash, the average being about 2000 gallons.

Against certain parasites, particularly the maggot fly, excellent control has also been achieved by spraying with the Cooper Allman sheep spray race. A similar race is known in some countries as the Portaspray. There's no doubt that spraying saves much time and labour, and handling of the sheep is reduced to a minimum. Less wash is required for spraying than for dipping, but especially formulated spray must be used and applied through equipment that ensures good coverage. As with dipping, correct preparation of the wash is essential.

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This type of race is transportable and can be taken to the sheep if necessary. Driving the flock over a long distance is therefore eliminated. The sheep readily follow each other through the race and they can be sprayed at a rate of up to 60 a minute.

For the control of parasites living close to the skin such as lice, keds and mites, dipping or showering is preferable to spraying owing to greater penetration of the fleece. And in Australia and New Zealand, sheep are often showered on a large scale. With this type of equipment, fixed jets saturate the sheep from below and nozzles on a boom rotate above them.

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Protection against maggot fly can also be achieved by jetting or hand spraying. This is mainly of value for heavily fleeced sheep like the merino. Wash is applied to the parts of the sheep most liable to be struck such as the crutch and along the back.

In the search for better sheep dips and other insecticides, the Cooper Technical Bureau and their colleagues overseas have always played a leading part. Every year many hundreds of chemicals are screened for their possible usefulness in the control of animal parasites. Promising ones are thoroughly examined in the laboratory before being tested under practical farming conditions. This entails the keeping of large colonies of flies and other insects for experimental purposes. Dips can be in powder, paste or liquid form. For over a century arsenic and sulphur or phenols were the main constituents of sheep dips. In arsenic sulphur dips, the insecticide remains in suspension in the wash and much stirring of the bath was necessary to prevent it settling. Correctly formulated, these dips cured scabs in two dippings. Carbolic dips form an emulsion; they're easily mixed, give a clean tarry odour to the fleece and can be reinforced with other insecticides.

After the war, simple arsenic sulphur and carbolic dips were largely superseded by synthetic insecticides such as DDT and BHC. These could be formulated as suspensions or emulsions. Next came other chlorinated hydrocarbons such as dieldrin and aldrin. These had many advantages but they tended to build up deposits in animal fat, and in most countries may no longer be used in sheep dips.

The present trend in dips is towards safe organophosphorus compounds. These have great efficiency and persistence in the fleece but research continues and it's quite possible that still newer compounds may emerge before long.

For a successful dipping or spraying, correct mixing of the wash is essential. Measure the quantities of dip and water accurately, don't guess them. All the manufacturer's skill, to say nothing of the farmer's time and effort, may be wasted through careless preparation of the bath. Compared with the older type dips, modern ones are very easy to mix. Nevertheless, stir the bath thoroughly before beginning to dip and again after any break in dipping.

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Sheep should not be dipped when they're heated, tired, thirsty or full of food. After gathering, allow them to rest before dipping begins. When dipping, bear in mind that it is best to separate lambs from the rest of the flock. Rams and fat sheep should also be dipped separately and treated with special care. Provided they're handled carefully, in lamb ewes can be safely dipped at any time but preferably either very early or very late in pregnancy. A sheep leaving the bath carries a considerable weight of wash in the fleece. Although most of this drains off quickly, the animal may stagger as it climbs out of the bath. If necessary it should be assisted gently.

Sheep remove both water and insecticide from the bath. Some of the insecticide is retained in the fleece, and the wash draining back to the bath is therefore under strength. To restore the bath to its original strength and maintain sufficient depth of wash in it, topping up is necessary. When topping up, pay particular attention to the dilution rate given on the label since this may not be the same as for the original mixing. The appropriate quantity of dip should be measured and after the bath has been restored to its proper working level with water, the dip should be added to it. The bath is then stirred again before dipping is resumed.

After dipping allow the sheep to stand in the draining pens until their fleeces have ceased to drip. When the pen is full remove the sheep to a nearby paddock and let them rest until they're dry. If the day is very warm, allow them to dry in shade if possible, but never crowd them together nor herd them into a closed shed.

Dipping, showering and spraying then make possible the control of all external parasites of sheep: maggot fly, keds, ticks, scab and lice.

Constant vigilance and years of research have gone into the development of effective dips, sprays and equipment. Greatly improved results are now possible. It is for the sheep farmer to apply the measures and methods best suited for his needs. Today he knows that science is constantly adding new and more powerful weapons to his armoury. Sheep parasites and the diseases they cause are being controlled or wiped out through systematic counter measures and good husbandry.



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<End credits>