

Obtaining Maximum Effectiveness from Modern Insecticides

By J. E. DUNCAN,
Chief Advisory Officer (Wool),
Department of Agriculture, Wellington

THE last five years have seen a bigger upheaval in dipping methods in New Zealand than all the previous years of our history. The revolution is by no means finished yet, and no one can tell what the end will be. However, the objective remains the same—to achieve the most efficient way of ridding sheep of external parasites.

THE two parties chiefly concerned are the farmer and the dip maker.

FARMER

If possible, he wants his sheep freed of parasites and protected against reinfestation for the maximum period at a reasonable cost. Preferably the operation should be easy, foolproof, and not unpleasant or dangerous to either sheep or men.

If these ideals could be realised, there would be no problems, but because they cannot, maker and user must collaborate to get the best results. That is why the labels on dipping materials at times appear complicated or on the longside to ensure that dips are used as safely and efficiently as possible. The maker knows the nature and performance of his product better than the user. The farmer ignores the instructions at his own risk.

Though the modern insecticides are infinitely more potent against parasites, they are not nearly as poisonous to warm-blooded animals as the old arsenical dips. In those days there was an uncomfortably small margin between killing the parasites and killing the sheep as well. Nevertheless the modern dipping materials cannot be treated entirely with impunity, and

MAKER

He also seeks the most efficient material, which should be cheap and easy to manufacture, deadly to parasites but innocuous to sheep and men, foolproof, and easy to use.



many of the directions on the label are designed to avoid any remaining risk of poisoning. The others are mainly to ensure that the dipping material is mixed at the correct strength for best results, that the sheep are handled in a reasonable manner, that the dip is applied as effectively as possible, and that sundry other conditions are as favourable as possible. These directions can be considered under the following headings:

POISONING

Sheep may be poisoned by swallowing an arsenical dip or by absorbing it through cuts or even unbroken skin if the dip is overstrength. The modern chlorinated hydrocarbon type dips such as BHC, aldrin, and dieldrin are much less deadly when swallowed, but in concentrated form can quickly be absorbed through the unbroken skin. So can the organic phosphorus compounds such as diazinon and "Delnav". Hence the need for care on the operator's part in handling concentrated materials and for the directions to wear protective clothing, including a mask, when using dusts. That is also the reason behind the direction to remove wet clothes at the first opportunity and to wash off concentrated dip that has come in contact with the skin.

The labels usually carry warnings against less obvious forms of poisoning, such as calves chewing empty arsenical dip packets and fish being killed by running used dip into a stream.



MIXING

Directions for mixing are generally very clearly set out and must be faithfully followed for best results. In the old days dips were mixed pretty well in a standard way to deal only with lice and keds. Now they can be mixed at various concentrations according to how they are to be applied (for example, by plunge, shower, or tip spray) and to whether prolonged protection against fly strike is desired beside killing keds and lice. Tip spraying machines