Shower dipping to prevent flystrike

General principles for sheep dipping for flystrike prevention

Irrespective of the equipment or product chosen to treat sheep, success will be determined by the correct application of insecticide and good farm management. Wet dipping is usually reserved for lice control but there are cyromazine products that are registered for application via plunge and shower dips for the control of flystrike on sheep. Unlike the situation with lice, sheep must be carrying at least 6 weeks wool growth to retain sufficient cyromazine for flystrike protection and cannot be treated later than 2 months before shearing.

There are several management principles that must be observed:

- Before dipping, sheep should be allowed to empty out by being held in yards overnight with water only.
- Whatever equipment is being used to treat sheep, it must be thoroughly clean, in good working order and capable of doing the job
- Do not dip through muddy yards
- Do not hold wet sheep in yards after dipping
- Do not dip in cold, windy weather
- Do not dip weak or severely struck sheep. Struck sheep should be drafted off and treated individually

Shower dips

Penetration of the dip solution to skin level is essential for optimum flystrike protection. Sheep in longer wool are harder to wet than short wool sheep and so must remain in the shower for longer. Shower dipping will use more solution than hand jetting and fleece will retain higher cyromazine residues. In this regard it can be a wasteful application method and is perhaps better considered an emergency treatment for times when a lot of sheep need to be treated quickly and labour is scarce. Even so, in terms of throughput, shower dipping is very inefficient. Information provided below will allow producers to get the best results from their shower dips but should not be construed as an endorsement of shower dipping.

Ad hoc tests undertaken by manufacturers, government agencies and others indicate that few shower dips examined in the field, including new units, achieve thorough, uniform wetting of sheep. Anecdotal evidence suggests pump performance and spray patterns are far from adequate in many cases, particularly

with the older, tractor driven units. Rectangular shower dips are not recommended.

When filling the dip, flow meters can be used to measure water volumes added to the sump. Alternatively, overall dip capacity can be calculated arithmetically. It is essential to calibrate the dip and to be able to measure the volume of dip wash remaining either by a graduated dip stick or sump. Dipping efficiency can be improved by adopting constant replenishment principles. Cyromazine is a non-stripping product so label directions are simple. The 'initial charge' of the dip and the supply tanks should be done by distributing a pre-mix of the correct volume of product diluted in 20 L of water into the dip sump and the supply tank(s). Fluid in the dip and tanks then need to be mixed thoroughly to ensure even distribution of insecticide. Although manual agitation using a shovel is adequate for the supply tanks, the shower dip pump should run for around 5 minutes to thoroughly mix the sump contents. Label instructions must be followed.

Sheep crowding at the exit (mesh) gate during showering is a welfare issue and impacts on wetting efficiency. A closed-in exit gate results in a more even distribution of sheep within the shower arena and improved sheep movement in response to the top spray arm rotation. These features improve fleece wetting.

Design improvements:
The recommended design specifications for optimum efficacy and operator safety are:

- A pump unit capable of supplying 18 L per second and a nozzle pressure of over 230 kPa., with a suitable suction system and discharge and suction pressure gauges.
- Re-plumbing of the over-head piping to 80 mm nb (nominal bore) and a larger bore rotating head.
- 50 mm nominal bore booms.
- Single slot Buzacott® nozzles operated at a flow rate of 18 L per second and at a nozzle pressure over230 kPa. Sunbeam® nozzles are not recommended on the basis of spray drift under high flow conditions.
- A secondary cover over the exit gate to prevent sheep crowding at this point and avoiding thorough wetting.
- Extended side walls to protect operators from spray drift.
- Removal of the bottom spray bars and associated plumbing and change-over valves.
- An operation time sufficient to achieve wetting to skin level. This may exceed 12 minutes.

The estimated cost of modifying an existing shower dip to the new design specifications are considerable and should be thought through very carefully. The

decision to modify a shower dip should be based on a number of factors including:

- the age of the existing equipment and its ability to last after modification (the basic structure must be sound)

- the investment cost versus the cost and convenience of employing a contractor

- cost of alternative application methods

Work rates are another issue which impact on costs. If sheep are showered for 12 minutes fewer than 4 lots can be put through the dip per hour, allowing for sheep in and out and re-filling the dip. The number of sheep that can be dipped per hour is therefore 210 (3.5 x 60) or 105 (3.5 x 30), depending on the dip model.

Occupational Health and Safety

There are a number of hazards for operators using circular shower dips. The most significant issue is dermal and inhalation exposure to pesticide from spray drift, especially from the bottom sprays. Raising the wall height and removing the bottom sprays greatly reduces the exposure risk however, appropriate personal protective clothing should be worn. Cotton overalls, waterproof gauntlets, waterproof boots and a washable hat are recommended. Waterproof trousers are recommended to protect the operator when letting sheep out of the dip enclosure.