Plunge 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. Plunge 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 sheep in poor condition
- Consider the extra weight of wet fleece when assessing the ability of sheep to climb out of plunge dips
- Do not plunge dip heavily pregnant ewes
- Do not plunge dip severely struck or weak sheep. These sheep should be clipped and hand dressed individually.

Plunge dips

There are in-ground plunge dips, mobile plunge dips and immersion cage dips. In-ground and mobile plunge dips require manual sheep dunking. Automated operation of immersion cage dips removes the need for manual dunking. Cyromazine is a non-stripping product so label directions are simple. Plunge 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.

Recommended design and operation of conventional plunge dips

Penetration of the dip solution to skin level is essential for optimum flystrike protection. The dip should be sufficiently deep that the sheep must swim at all times - including when *'dipping out*' i.e. when allowing the amount of solution in the dip sump to decrease in order to minimise the volume of spent dip wash for disposal.

Sheep flow into the dip needs to be regulated. It is not a race against time. Pileups slow the operation and can result in some sheep not being dunked correctly. Sheep entering the dip should run around a corner to achieve separation e.g. around a bugle race. A slatted or concrete floor will help remove dirt from hoofs and inhibit fouling of the dip. Side slip entrances with decoy pen are suitable for in-ground dips. Mechanical conveyors eg. V.E. machines are suitable for mobile dips. Woolly sheep require more time to climb out of, and leave the dip, than short wool sheep so care must be taken to prevent pile ups at the dip exit.

When filling the dip, flow meters can be used to measure water volumes added to the sump and 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 sight tube or graduated dip stick or sump.

When dipping, appropriate personal protective clothing should be worn. Cotton overalls, waterproof gauntlets, waterproof boots and a washable hat are recommended. Waterproof trousers or a waterproof apron are recommended to protect the operator from splash contamination.

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, along the length of the dip or into the supply tank(s). The dip and tanks then need to be mixed thoroughly to ensure even distribution of insecticide. Although manual agitation using a shovel is suitable for the supply tanks a recirculating pump run for around 5 minutes is required for the main sump. Never use the first few sheep to mix the dip. Label instructions must be followed.

The maximum number of sheep that should be dipped before the dip is cleaned should be no more than one sheep for every 2 L of dip wash, based on the full volume of the dip. For example; 2000 sheep when using a 4000 L capacity dip. It may be necessary to clean out more frequently to avoid a dip stain in the wool. Take care to handle and dispose of the dip wash and sump sludge safely according to label

directions.

Cage dipping systems

There are several immersion cage dipping machines being used by contractors throughout eastern Australia. In general terms these comprise a sump containing the dip solution, a mesh cage with removable lid to hold the sheep. Sheep are coerced into the cage, the lid is closed shut and the cage with the sheep is lowered into the dip sump. Hydraulic operation of the cage allows the operator to fully immerse the cage so that the heads are fully covered. This can be repeated if necessary. After being held in the dip wash for up to 10 seconds the cage is lifted to allow the treated sheep to drain. While draining, the sheep act as decoys for the next pen of sheep. There are welfare risks associated with dipping sheep in poor condition that must be considered carefully. Only sheep capable of tolerating the treatment should be dipped. If in doubt, a backline is a more appropriate choice. If wet dipping is chosen cage dips are more suitable for treatment of sheep in poorer condition than conventional plunge dips as the sheep do not need to climb out of the dip. These systems vary in sophistocation and detail but can be extremely efficient, one person operations are easily capable of treating in excess of 2000 sheep per day.