Info Sheet 2
Resource care guide - August 2002

Managing DDT Residues on sheep and beef farms

Background

DDT is a highly persistent insecticide which was widely used until it was banned in 1970.

It breaks down slowly and has a half-life (the time it takes to fall to half its original concentration) of up to 50 years. It is insoluble and does not leach from the soil.

DDT breaks down into chemicals known as DDD and DDE. DDE accumulates in animal fat and this is what the markets test for. DDE is more persistent than DDT (DDT, DDD and DDE are referred to collectively as DDT-r).

Animal products with excess DDT-r levels are rejected as unfit for human consumption and the presence of DDT-r in export products is a threat to our markets.

Checking for DDT-r levels

Soil test to identify paddocks or blocks with high and low levels. Do not rely on paddock histories.

Minimising DDT-r levels in stock

DDT-r enters animals when they eat contaminated soil. Young stock initially take in DDT-r in their mother's milk.

- Feeding stock well to get high growth rates and carcass weights dilutes DDT-r.
- DDT-r concentration declines when stock are fed on moderate and low-level DDT-r soils.
- DDT-r concentrations increase if the feed supply is less than optimal.
- DDT-r concentrations increase on high DDT-r soils even if stock are fed well.

The key strategies for avoiding DDT-r in carcasses:

- Minimise intake of contaminated soil.
- Feed to get high growth rates and carcass weights. This dilutes DDT-r levels in the fat.
- Identify paddocks with high and low residue levels and work out a management plan.
- Don't slaughter stock immediately after grazing high DDT-r soils. Allow time for DDT-r concentrations to decline, about 4-6 months.

Managing pastures on high DDT-r soils

- Sow persistent cultivars, as bare ground and pasture renewal lead to more soil intake by stock. No-till renovation will help in minimising soil ingestion.
- Use rotational grazing rather than set stocking.
- Consider withdrawing areas with very high DDT-r levels from meat production, and use them for wool, hay, silage, or forestry.
- Avoid pugging and hard grazing.
- Avoid using them for winter-feed crops.

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Winter feeding

- Grow winter feed crops on low residue paddocks because there is greater soil intake from crop than pasture.
- Use kale rather than annual ryegrass, or oats. Kale results in less soil intake as there is less trampling of plants into the soil and cattle only graze the leaves and upper stems.
- Feed hay onto pasture with low DDT-r residues only to avoid soil ingestion.
- Use hayracks to avoid soil ingestion.
- Do not run breeding stock on high DDT-r soils.
- Do not grow root crops on soils with DDT-r residues.

Ewe management for minimising DDT-r in lamb carcasses:

DDT-r in lambs comes initially from mother's milk. If ewes accumulate high levels, they will pass them on to their lambs.

- Graze ewes on lowest DDT-r soils possible, particularly during pregnancy and lactation.
- Have ewes at high body weights at lambing to reduce DDT-r in milk.
- Feed ewes a high allowance during lactation. This will decrease lamb DDT-r concentrations at weaning by up to 50%.
- Don't buy ewes with high DDT-r levels.

Lamb management

- Feed lambs to achieve high growth rates and high carcass weights. Feeding lambs to achieve 19kg carcasses compared to 14 kg over 8 weeks can reduce lamb DDT-r concentration by 45%.
- Feed works lambs on low DDT-r land after weaning. Lambs grazed on areas with 0.5 parts per million (ppm) compared with 1.5ppm can have 40% lower DDT-r concentrations after eight weeks.
- Allow time for residue levels to decline. DDT-r concentrations are lower from lambs on moderate and low DDT-r soils.
- Buy in low DDT-r lambs for finishing.
- Combining grazing on low DDT-r soils, and high carcass weights gives the lowest DDT-r concentrations.

Finishing cattle management

- Use the lowest DDT-r paddocks in the five months prior to slaughter. This will help dilute DDT-r fat concentration.
- Feed to maximise liveweight gain on the lowest DDT-r paddocks. This can reduce fat DDT-r concentration by 0.7ppm in 4-6 months.
- If you can't finish cattle on low DDT-r paddocks, then slaughter when they are older. Even on 1.3ppm soils and normal feeding, fat DDT-r concentration can reduce by 0.7ppm in one year.

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