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Organochlorine residues in soil, plant and in the body and wool fat of wethers.

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TITLE: Organochlorine residues in soil, plant and in the body and wool fat of wethers.

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The accumulation and rundown of Dieldrin in wethers (5841EX).

The background, aims, experimental method, and the first years results and discussion have been reported in the 1989 experimental summary.

The latter phase of the study was continued until December 1990 on six of the sites (these were Brookhampton, Donnybrook, Jindong, Manjimup, Carburnup and Pemberton) with similar measurements being obtained at regular intervals. The sheep monitored during this phase were the 1989 Main mob and the 1989 Replacement mob.

During 1990 at each site, the level of body fat Dieldrin again increased during summer and autumn and decreased during winter and spring. This seasonal change once more paralleled the levels of Dieldrin in pasture. Importantly, the 1990 body fat Dieldrin levels were very similar to the 1988 and 1989 body fat levels. This trial indicated that there is little risk of long term accumulation of Dieldrin in body fat.

Wool fat levels of Dieldrin during 1990 were similar to those recorded in 1988 and 1989, and were all well below the industry standard limit of 3.0 ppm Dieldrin.

The completed 30 month study has provided a lot of information on Dieldrin contamination in wethers. The most important conclusions are:

- The level of body fat Dieldrin is seasonal. It increases during summer and autumn and decreases during winter and especially during spring.
- This seasonal uptake of Dieldrin is directly related to the seasonal levels of pasture Dieldrin contamination.
- Pasture Dieldrin levels are directly related to the level of soil contamination, soil structure, soil type and inversely related to the availability of pasture.
- Sheep can be grazed on contaminated land during spring in Western Australia when there is a flush in pasture growth which results in a large amount of relatively uncontaminated feed being available.
- MRL levels of Dieldrin in the body fat can be exceeded when sheep graze on contaminated land, especially if there is less than 2,000 kg DM/ha.
- There was no continual accumulation of Dieldrin in the body fat of the wethers in the Mediterranean environment studied where there were marked seasonal variations in the quantity of pasture available and in the level of Dieldrin in the pastures.
- Dieldrin is lost relatively fast from sheep. the rundown times observed were relatively short compared with the results obtained in cattle in Western Australia.
- There was no problem with the level of Dieldrin in the wool fat. The critical level of 3 ppm was not exceeded at any site.