Persistence of Lindane and Dieldrin in treated soil of an opium field.

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During october 1973 Lindane W. P. 25 %, 11.5 Kg. per ha. and Dieldrin W. P. 50%, 6.5 Kg. per ha. were applied to 3 plots total area 500 m2 using a 10 L. sprayer to control *Stenocarus fuliginosus* Marsh., the ground was then turned and opium was planted.

Soil samples representing the top 15 cm profile and the top 30cm profile were taken, 4,6,13, and 21 months after the application. The sampling was done with a special auger. 17 samples were taken from different parts of each plot and mixed together. The weight of this combined sample was between 500 and 1000 grm. The extraction was done as WOOLSON, EA and TEARNEY method. 100 grm. of each sample with hexane - aceton (41:59) azeotrope in a soxhlet extractor was extracted. The extract was treated with water (100ml) to remove the aceton layer and the insecticide concentration in the Hexane layer was determined directly by G.L.C.

The recoveries of the insecticides from soils treated in the laboratory with 10 ppm lindane and 10 ppm Dieldrin were between 80–98% and 91–104% respectively. 32 samples were analysed.

The rate of dissipation of the two insecticides at the two depths is shown in the graph below.

In most of the cases it was found that the residue of both insecticide was greater in the top 15cm depth than in the top 30cm depth.

During the 2 year study period the lindane residues decreased from 5 ppm to 0.001 ppm and Dieidirn decreased from 4.8 to 0.01 ppm. It should be noticed that the rate of loss is more rapid in the first nine months than the following months, and is possibly due to microbial action.

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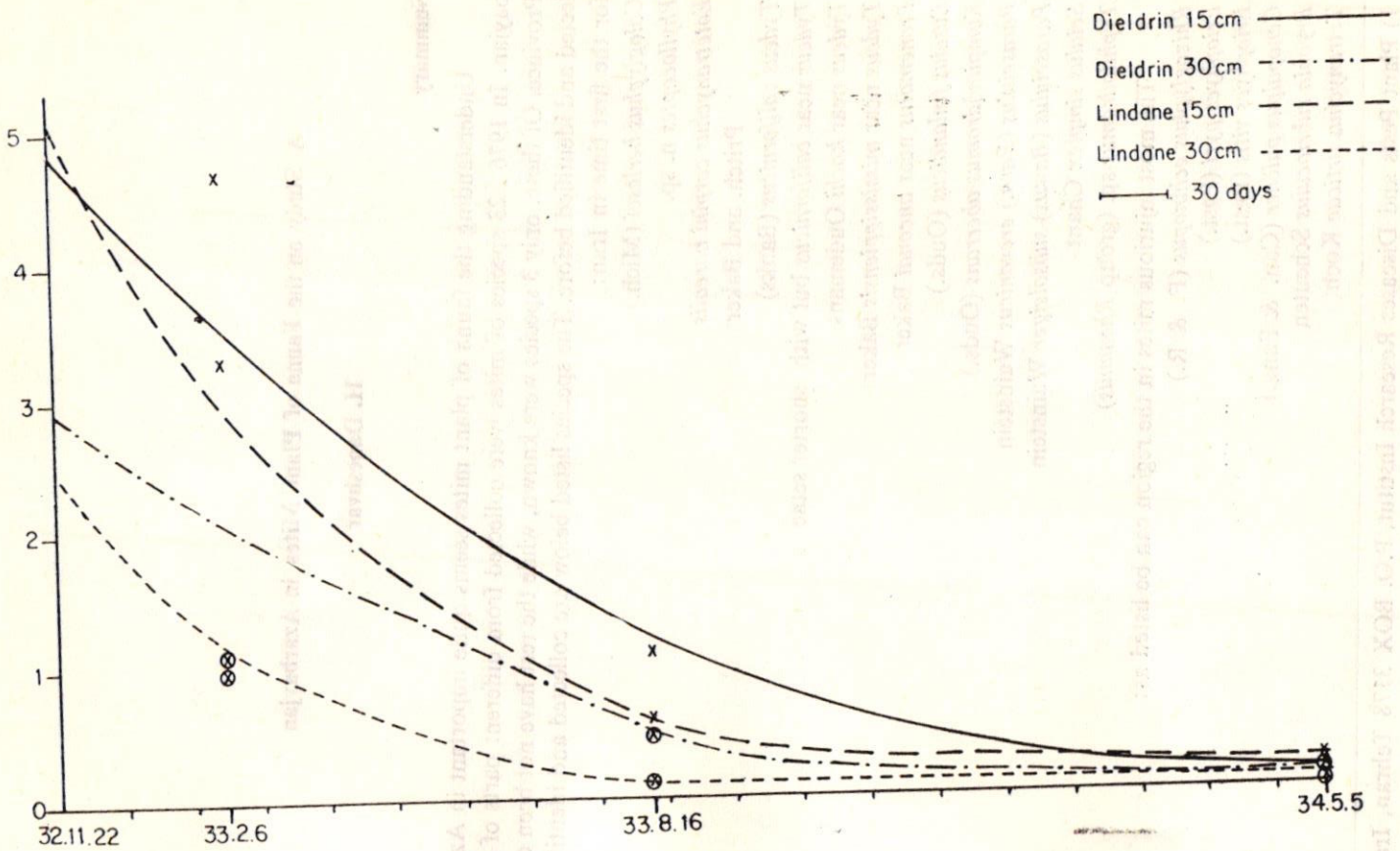
Dieldrin 15 cm
Dieldrin 30 cm
Lindane 15 cm
Lindane 30 cm
30 days
5
4
3
2
1
0
32.11.22
33.2.6
33.8.16
34.5.5