THE CONTROL OF GRASS CATERPILLARS.

Psara licarsisalis (Walk.), under the common name of the grass moth, has been discussed in the Queensland Agricultural and Pastoral Handbook (Officers of the Department of Agriculture and Stock 1951).

Although this insect has a State-wide distribution it is responsible for serious damage to pastures and lawns only in the south-eastern coastal areas of the State in the late summer and autumn. Recent Departmental records list severe outbreaks in 1947 and 1949, but during the grass caterpillar outbreak in the autumn of 1947 *Prodenia litura* (F.) appeared as the predominant species. This occurrence is rather unusual in Queensland but was recorded again during March and April of 1954.

Although for some years DDT has been used successfully to control *P. licarsisalis* and several Noctuids (Passlow 1952; May 1953; May and Passlow 1954), this opportunity was taken to establish trials against *P. litura* functioning as a grass pest.

A typical example of this work is as follows. An 8 x 4 randomised block with a plot size of 10 feet square was set out at Tingalpa where kikuyu grass (*Pennisetum clandestinum* Hochst.) and couch grasses (*Digitaria didactylon* Willd. and *Cynodon dactylon* Pers.) were being grown and harvested for poultry green feed. The soil, though on a slope with an easterly aspect, was poorly drained; the ground cover in all places was at least four to six inches deep.

Table 1.

Treatment.	2-Day Count.		5-Day Count.
	Transformed Mean.*	Equivalent Percentage Survival.†	Percentage Survival.†
DDT $\frac{1}{4}$ lb./ac.	13·6	5·5	3·1
DDT $\frac{1}{2}$ lb./ac.	13·7	5·6	1·3
DDT 1 lb./ac	8·4	2·1	0·9
Dieldrin $\frac{1}{8}$ lb./ac.	27·6	21·5	2·7
Dieldrin $\frac{1}{4}$ lb./ac.	17·8	9·3	0·7
Dieldrin $\frac{1}{2}$ lb./ac.	12·9	5·0	0·0
Differences necessary for significance { 5%	9·2	..	Not analysed.
Differences necessary for significance { 1%	12·8	..	Not analysed.

* Inverse sine transformation.

† Survival percentages, based on pre-treatment counts on April 2, have been adjusted to 100% survival for the control plots. The observed survival percentages on the control plots were 74% and 55% on the second and fifth days respectively.

In the assessment of larval populations, counting was facilitated by spreading wet Chapman bags in each plot late in the afternoon. Next morning the larvae beneath these bags were counted. Details of the spray treatments, dosage rates as pounds of active ingredient per acre, and the results are given in Table 1.

In these trials all treatments gave satisfactory control. Under the wider application of commercial practice, DDT at the dosage rate of $\frac{1}{4}$ lb. per acre, increased to $\frac{1}{2}$ lb. per acre when a thick body of grass was present, was found satisfactory under the ruling prices of the insecticides concerned.

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