

THE USE OF DIURON FOR WEED CONTROL IN MATURE LOW-GROWN TEA

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The only herbicide that is presently used on a large scale to control weeds in low-grown tea is Gramoxone.¹ It is being used by some estates at the rate of half pint per acre every other month. Some weeds, particularly *Paspalum conjugatum* (Sour Grass) and *Spermacoce latifolia* are not adequately controlled by Gramoxone used in this manner. It has been observed that on a number of estates which use Gramoxone as the only means of weed control, these two species have become predominant and have become a serious weed problem. Higher rates and frequencies of application of Gramoxone, or the use of additional labour between gramoxone rounds may be more effective against these weeds but would considerably increase expenditure. A number of other herbicides which may be useful in dealing with this problem have, therefore, been evaluated. Promising results have been obtained with diuron, a substituted urea herbicide, and its use on estates can now be suggested, but strictly on an experimental basis. *The experiments should be carried out on limited extents not exceeding two acres.*

The following scheme is suggested for mature tea fields which carry a very dense stand of weeds :

- 1 — Apply one pint Gramoxone plus 15 fl. oz Lissapol² 'N' in 100 gallons water per acre. The cost of chemicals for this treatment is approximately Rs 16.50.
- 2 — Follow about two to three weeks later, *ie* when the weeds show signs of recovery, with $\frac{3}{4}$ lb Karmex³, plus 15 fl. oz Surfactant 'N' in 60 gallons water per acre. It is preferable to apply this treatment on a clear day, but when rains are expected so that the herbicide will reach the soil through the debris on the soil surface. The cost of chemicals for this treatment is approximately Rs 15.00.
- 3 — It would be necessary to remove manually, the weeds growing through the bushes and which have, therefore, escaped the spray.
- 4 — Treatment 2 should be repeated when weed control breaks down. This programme of weed control is likely to cost about Rs 85.00 spread over a period of four to five months, and may appear prohibitive. It is, therefore, emphasized that this scheme is suggested only for those areas in which the weeds have continued to build up and get out of hand in spite of regular applications of the methods presently employed. We have in mind tea land which, if weeded manually, would cost upwards of Rs 75.00 per acre for the first cleaning up.

1 — Gramoxone is a formulation marketed by Plant Protection Ltd. and said to contain 20% w/v paraquat and 10% w/v wetting agents. It can be obtained from Chemical Industries (Colombo) Ltd.

2 — Lissapol is marketed by Chemical Industries (Colombo) Ltd.

3 — Karmex is a formulation marketed by Du Pont and said to contain 80% w/w diuron. Karmex and surfactant 'N' can be obtained from the Shell Co. of Ceylon Ltd.

In lesser stands of weeds, four or five well-timed applications of treatment 2 may be sufficient for year-round weed control. The interval between two successive applications of diuron should not be less than two months.

It should also be noted that with residual herbicides such as diuron, the initial expenditure is generally high but economies may be expected over a period of time. Diuron with the added Surfactant 'N' is capable of both foliar action as well as residual action. This herbicide should, therefore, be applied evenly over the area being treated, covering both weed foliage as well as bare ground. Spraying it on the tea foliage must be avoided. The usual precautions adopted in this regard when spraying Gramoxone should suffice. Leaves of trailing branches which come into contact with the spray are likely to turn chlorotic.

Hand-operated knapsack sprayers fitted with agitators are recommended when spraying diuron. Estates are advised to contact the Institute for any further details they may require. It would be greatly appreciated if estates keep the TRI informed of their results.

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Editor's Note — The costs of herbicides do not take into account the FEEC scheme operating in Ceylon, as this scheme was implemented after the preparation of this publication.