

BARLEY GRASS

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SUMMARY

BARLEY Grass can be eradicated in the Waikato by spraying twice in the one season, using 15.8 lb a.i. per acre of TCA in June and then 1.5 lb a.i. per acre of dalapon in September. This method is suitable only for small areas because of the cost (£7 10s.) per acre, and the three months' pasture depression caused.

To ensure accurate spraying the patches to be sprayed must be pegged out in summer before treatment.

As yet there is no satisfactory way of treating barley grass while it is in the seed-head stage.

We have always had odd patches of barley grass (*Hordeum murinum*) in the Waikato, but it is only in the last few years that these patches have spread to any degree. Having seen what has happened in Hawke's Bay we are rather frightened of barley grass and would like to get rid of it before it becomes a problem weed in our district.

So far most of the barley grass in the Waikato is in well defined patches, usually stock camps, with half a dozen or so patches on each property and the total area on any one farm is generally less than an acre. We seldom see barley grass scattered over a large area.

SOLUTION

Some way of spraying barley grass is required for use on these odd patches and in unploughable places.

Further, we are interested in eradication rather than control, for if there are 100 barley grass seed-heads to the square foot and only 99 are killed there will still be enough seed set to grow a full scale crop again next year. We want 100 per cent eradication or as near to that as possible.

The aim of the investigation was to find a spraying technique that would eradicate well defined patches of barley grass in one season.

MATERIALS USED

Dalapon and TCA were chosen for intensive study.

All plots were laid down in duplicate and were checked over a period of two seasons.

TIME OF SPRAYING

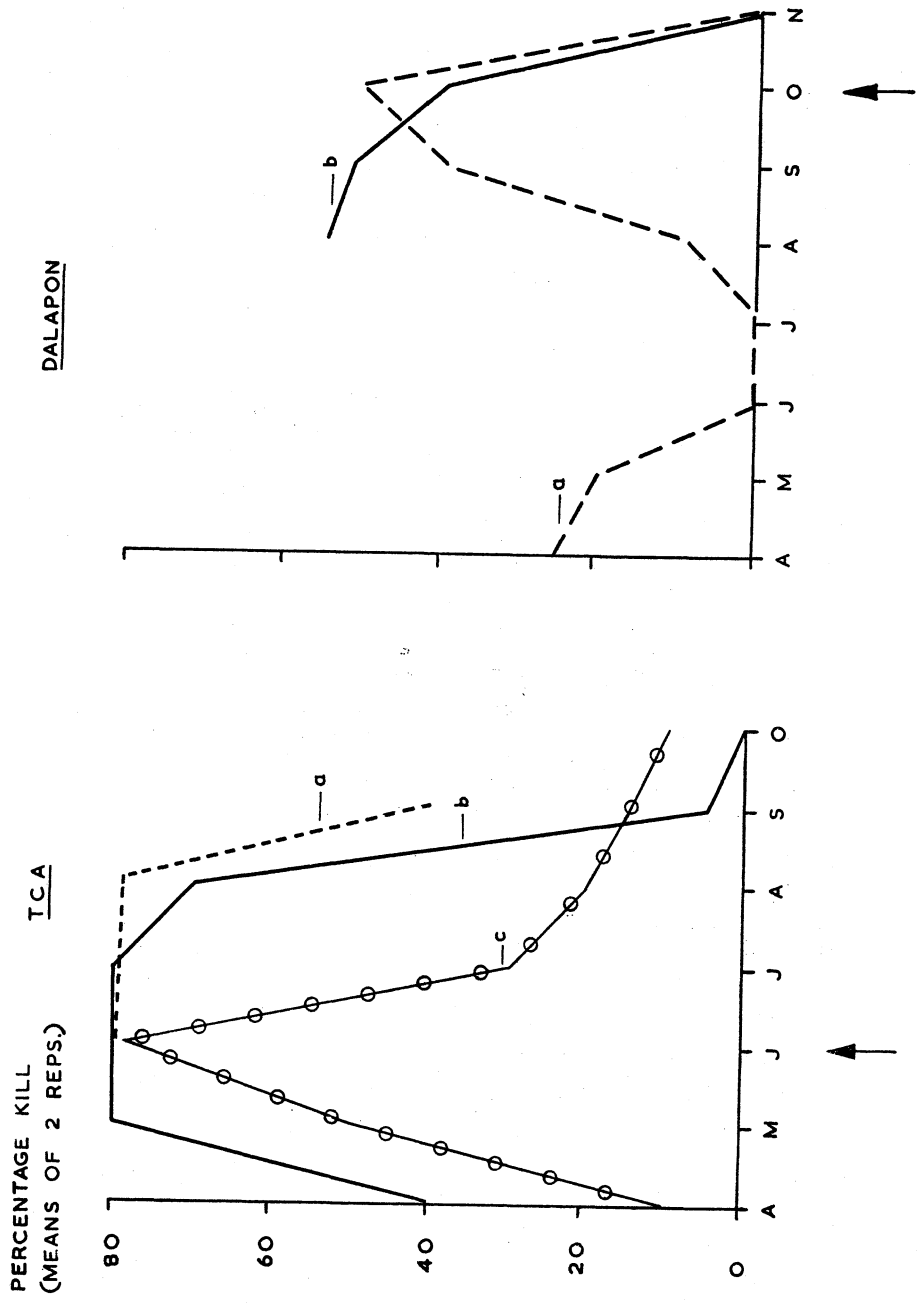
Our experiments using TCA and dalapon month by month for three years showed that the time of spraying is critical. The graph of the three years' results shows that TCA works best when applied in winter and dalapon works best when applied in spring.

TWICE PER YEAR SPRAYING

We could not get consistently good kills of barley grass by spraying once per year. We then tried two treatments in the one season, spraying with 15.8 lb a.i. per acre of TCA in June, followed by 1.5 lb a.i. per acre of dalapon in September.

The first year's results from this 15.8 plus 1.5 lb a.i. per acre treatment were quite good and not more than 12 barley grass plants flowered in either of the $\frac{1}{4}$ acre plots used. It was just as successful the following year in a different paddock and only two or three plants flowered on each of the square chain plots.

In this work we did not rate these treatments as successful until the plots had all been inspected three times, in December, January, and February.



FARM MANAGEMENT CONSIDERATIONS

Everybody wants to spray barley grass when the seed-heads make it easy to see, but as yet there is no known way of doing this successfully. Because it is necessary to spray barley grass at a time of the year when it is difficult to recognise, it is essential to peg out the areas first, while they are still easily seen.

In our district it is a waste of time trying to clear barley grass from one paddock at a time. Unless the whole place is cleaned up in one season, the stock just reinfest the clean paddocks with seed from the untreated ones. But in the Waikato, cleaning up the whole farm generally means spot treating a few patches which are less than an acre in total area.

This 15.8 plus 1.5 lb a.i. per acre treatment gives three months' pasture depression and in our experiments hedge mustard (*Sisymbrium officinale*), buttercups (*Ranunculus* spp.), and scotch thistle (*Cirsium lanceolatum*) increased markedly.

The treatment costs £7 10s. per acre for materials and is more expensive than some others being recommended. This will eradicate barley grass not just control it, and there is less than an acre to treat on most Waikato farms. Under these conditions the high cost per acre is not critical, for by this method the majority of Waikato farms could still be rid of barley grass for £7 10s. Where barley grass has spread over large areas this 15.8 lb TCA plus 1.5 lb a.i. per acre of dalapon would not be practical; it is too expensive and causes too much pasture depression.

In most cases barley grass was introduced by bought in sheep and farmers trying to clean up dairy properties should keep this in mind.

WHAT NOT TO DO

We have found it a waste of time to attack barley grass with a flame-thrower or to mow it frequently and rake up the clippings. Saturating with diesel is not always successful and it is too late to start spraying with TCA or dalapon once the seed-heads appear.

RECOMMENDATIONS

Where barley grass occurs in well defined patches and these patches on any one farm comprise an acre or less in total area, the weed can be eradicated from the farm in one year by the following 3-point programme:

1. January—Peg out the patches.
2. June—Spray with 15.8 lb a.i. per acre of TCA when rain is expected.
3. September—Re-treat with 1.5 lb a.i. per acre of dalapon during fine weather.

For knapsack jobs use 1.5 lb a.i. per acre TCA to 2 gallons of water or 1.5 oz a.i. per acre of dalapon to 2 gallons of water and wet to the point of run-off.

Acknowledgment

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