

Research Note

NC8438 FOR CONTROL OF SEEDLING BARLEY GRASS

M. J. HARTLEY

Ruakura Agricultural Research Centre, Hamilton

Summary

NC8438 was tested for control of seedling barley grass (*Hordeum murinum*) in a pilot trial in Waikato. Initial control of barley grass was good at all rates of NC8438 and ryegrass was unaffected. Clover was checked but total dry matter production was not depressed.

INTRODUCTION

THIS PAPER reports a pilot trial of a new chemical for control of barley grass in the seedling stage.

METHOD

Four rates of NC8438, wettable powder, were applied to pasture on a pilot trial. Two replicates were applied immediately after the main germination of barley grass in February 1971, and a further two replicates one month later. Bensulide was included in the trial, for comparison, and application was made by an Oxford Precision Sprayer delivering 380 l/ha. The effect on barley grass (*Hordeum murinum*) and other pasture species was observed and total dry matter production recorded either by cutting or the use of the weighted disc technique (Phillips and Clarke, 1971).

RESULTS

The treatments, pasture observations and dry matter production are shown in Table 1.

TABLE 1: TREATMENTS AND EFFECT ON BARLEY GRASS

Treatment (kg/ha)	Treated 9/2/71			Treated 10/3/71		
	Barley Grass Observed	Rating* 10/1/72	DM kg/ha† 9/2/71 to 10/11/71	Barley Grass Observed	Rating* 10/1/72	DM kg/ha† 9/2/71 to 10/11/71
bensulide 9	mass	6.8	7200	mass	6.8	6330
bensulide 18	mass	8.0	7100	mass	6.7	6240
NC8438 1	trace	4.5	7730	some	3.5	6260
NC8438 2	trace	5.0	7860	trace	3.4	6010
NC8438 4	none	3.2	7620	trace	1.7	5410
NC8438 8	none	2.7	7360	none	1.0	6260
Control	mass	6.0	7190	mass	6.7	6450

*Mean of 3 observations on 0-10 scale (0 = none, 10 = moderate amount).

†Total of five cuts.

DISCUSSION

During the winter and spring, NC8438 gave very good control of the barley grass at all rates but the final barley grass assessment in summer was disappointing. However, this was probably an unfair rating because barley grass levels were low on all plots at that stage owing to infrequent pasture measurements, followed by mob-stocking, which had the effect of controlling the etiolated barley grass. Bensulide had no effect on barley grass at either rate.

The effect of NC8438 on ryegrass (*Lolium* sp.) was negligible at all rates used but there was an observed depression of white clover (*Trifolium repens*) growth. This was a cessation of growth rather than a killing of the plants and by January 1972 reasonable new clover growth was apparent on all but the highest rate of NC8438. There was no clear depression of dry matter production by any of the treatments at any cut.

CONCLUSIONS

NC8438 might prove a useful herbicide against barley grass. By removing the bulk of the barley grass early, the ryegrass is not suppressed and remains as a thick sward. This should help to prevent re-invasion by barley grass the following year. The clover suppression may not be too serious as barley grass is frequently associated with high fertility levels (Metson *et al.*, 1971) and ryegrass is often a major component of the associated sward. A prolonged germination period would seriously offset the usefulness of NC8438 but this trial indicated a stronger post-emergence activity than expected. Later application might prove satisfactory provided it were applied before the barley grass became suppressive. Further, more extensive testing is in progress.

REFERENCES

- Metson, A. J.; Saunders, W. M. H.; Nott, J. H., 1971. Some chemical properties of soil from areas of barley grass (*Hordeum murinum* L.) infestation. *N.Z. Jl agric. Res.*, 14: 334-51.
- Phillips, D. S. M.; Clarke, S. E., 1971. The calibration of a weighted disc against pasture dry matter yield. *Proc. N.Z. Grassld Ass.*, 23: 68-75.

NON-SELECTIVE VEGETATION CONTROL

CHAIRMAN'S SUMMARY

L. J. MATTHEWS

Ruakura Agricultural Research Centre, Hamilton

The session was balanced in that two papers covered aspects of vegetation control on railways and road verges. The third paper introduced karbutilate, a relatively new addition to the field of non-selective weed control.

The paper by J. N. Ford met public values of aesthetics, Noxious Weeds Act, and proposed letting of contract spraying. Discussion did not weaken the proposal suggested or detract from the value of the paper. In contrast, the paper on railway weed control dealt largely with track maintenance, the operation involved and the species occurring as problem weeds. The paper did not reflect the same public values or pressures for improvements. Discussion showed that the spraying schedule given for a small geographic location differed so widely that it was highly unrealistic, and that the rapid increase of one species at last indicated the over-use of a particular herbicide. Discussion indicated that contract spraying of railway lines may be a profitable approach.

The paper on karbutilate covered a well balanced comparative series of trials and mainly dealt with paspalum control. Discussion indicated some of the trial sites were on the climatic edge of paspalum growth, that the main standard of 2,2-DPA (6.8 kg late autumn/early winter) was not included and that adequate control only appeared possible when paspalum was making active growth. Trials conducted at this period tended to minimize the effect of other materials. The large range of resistant species warrants the use of a suitable additive to karbutilate.