ERADICATION OF BARLEY GRASS FROM A SMALL FARM

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Summary

Barley grass (*Hordeum* sp) has been eradicated from a small farm carrying sheep bred on the place by control measures which minimise ripe seed being formed or carried in wool.

INTRODUCTION

The author farms 14 ha of gently-to-steeply sloping land in the Moutere Hills of Nelson, stocked with fifty breeding ewes raised on the property. Ten hectares of orchard take most of the author's time, and the small area of pasture can receive no more attention per hectare than on most large farms.

A big effort was made to control barley grass (*Hordeum* sp) following its first appearance about 1960, but during the next few years infested areas became large and more numerous until plants in seed were being gathered by the sack-full. Control measures were then successfully changed. Barley grass continued to decline and has not appeared on the property for the last two seasons. It is now opportune to emphasise factors which are considered important in this success.

METHODS

Herbicide

Reliance was placed initially on pulling plants out or plucking seed-heads before seed could fall, but many plants broke above ground and later formed seed on low stems. In later years infestations were sprayed with paraquat at 1.2 g/litre as soon as they were discovered.

A few days later the seed-heads and whole plants — if they would pull out — were gathered and burnt. Spraying with paraquat had the advantage of marking infested areas for several months, and of preventing seed ripening provided infested areas were noticed soon enough and sprayed immediately. An appreciable number of barley grass plants sprayed thoroughly with paraquat grew again, and one plant produced viable seed in May after spraying on five occasions. Notwithstanding this serious weakness of paraquat it was considered useful especially in dealing with dense patches of barley grass. There is little doubt that barley grass would have got out of control if herbicides had not been used. A great deal of musky storksbill (*Erodium moschatum*) invaded areas sprayed with paraquat, but it declined after a few years and did not cause any lamb pelt to be down-graded. It was decided to persevere with paraquat rather than use other chemicals in order to test more fully the efficacy of control methods used.

Fire

On several occasions, new infestations of barley grass, discovered after a lot of seed had fallen, were made the sites of fires where wind-blown trees were burnt. No barley grass has appeared in these areas.

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Fencing off

In more recent years the denser or more persistent patches of barley grass were fenced off to minimise seed being carried in wool. The success of this measure was reported to the N.Z. Weed and Pest Conference in 1971 (Taylor 1971) but can now be more strongly advocated for those farms where barley grass occurs mainly in well-defined small patches. Sheep have usually been kept off infected areas during September and October. Where this was done, the first barley grass seed heads have appeared on long ascending stems, always between 3 and 10 October, and have been easy to find. On the other hand barley grass grazed heavily in spring has seeded later and over a long period. Under heavy grazing seed-heads form on short low stems, and are likely to drop seed before they are noticed.

Trees

Most barley grass on the farm has grown near trees — all wattle (*Acacia* spp) Such infestations have been much harder to control than those in the open. Where trees have been removed on account of root-rot or wind damage, barley grass has quickly been brought under control. Barley grass provides a good reason for removing shelter trees, but as there are better reasons for keeping them, most have been retained.

Wool

Barley-grass seed carried in wool appears to cause most new infestations. Sheep bought in late summer from infected areas carry a lot of seed, even though it is only a small fraction of that formed where the sheep were run. The risk of infestation from sheep brought in can be greatly reduced, but not eliminated, by shearing them on arrival. A Romney ram purchased in February from a farm lightly infested with barley grass retained over twenty intact barley grass seeds after machine shearing, half of which were viable. Seeds cut in half by the shearing machine failed to grow.

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REFERENCES

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