CONTROL OF TALL FESCUE

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Summary

On wet soils under lenient stocking tall fescue (*Festuca arundinacea*) can become a dominant species in pasture. Improved drainage and cultivation are claimed to eradicate the weed but trials indicate that chemical control offers a convenient and cheap method of eradication. 2,2-DPA, at 15 lb a.i. per acre has been used in the past. Recent trials show that paraquat (1 lb a.i. per acre) applied late in the autumn or early winter is an effective method of control. This paper discusses trials investigating rates of paraquat and times of applying chemical.

INTRODUCTION

Tall fescue (*Festuca arundinacea*) is a vigorous, tufted perennial grass which is a persistent invader of heavy, wet and sometimes saline soils. In low-lying, poorly drained areas, where grazing is not intense, the weed will become completely dominant. Pastures subject to pugging, particularly in the vicinity of gateways and water troughs, are susceptible to invasion by tall fescue. During feed shortages tall fescue does provide some rough grazing, but when rank it is quite unpalatable to stock. The toxic qualities of the ergot fungus, commonly present in the seed-head, renders the weed dangerous to cattle if flowering commences.

Some control of tall fescue has been obtained in pastures by drainage, cultivation, mowing and grubbing (Glue and Matthews, 1959). Mowing, to be effective, must be low to damage the crown of the plants. A rotary slasher set at almost ground level will give the desired results. A number of mowings at fairly close intervals will substantially reduce the tall fescue population (Oliver, 1968).

Tall fescue is susceptible to competition from other pasture species. In pastures being invaded by Kikuyu grass (*Pennisetum clandestinum*) Oliver noted that tall fescue is eventually smothered. Bell (1957) stated that in unstocked areas, such as roadsides and stop-banks, tall fescue can be eliminated by the introduction of phalaris tuberosa (*Phalaris tuberosa*).

2,2-DPA at 15 lb (all rates in a.i. per acre) has proved most effective when applied in February and March (Thompson, 1959). Chemical control has proved more effective when the weed is mown prior to treatment. This reduces plant size and removes dead material from tussock centres.

EXPERIMENTAL WORK ON CHEMICAL CONTROL

Bilkey (1964) in an unreplicated trial on the Aka Aka swamp obtained a good kill using paraquat at 0.5 lb in 150 gal water as an April application. Quantities less than 0.5 lb appeared to be inadequate. A further trial was laid down in August and this proved unsuccessful. The tall

fescue recovered quickly and after eight months showed no effect from the chemical treatment.

These trials indicated that the time of applying paraquat to tall fescue was important. In 1965 and 1966, trials were laid down near Helensville on a heavy clay soil derived from marine deposits. The trial area was wet for most of the year; it was only very lightly grazed by dry dairy cattle and was dominant in tall fescue with a trace of *Lotus* spp. The tall fescue had been kept short with mowing.

The three trials were laid down in August, February and June, respectively, and compared rates of paraquat applied with a boom in 40 gal of water with a suitable surfactant. Each trial was replicated four times. No oversowing of desirable species was attempted. The results of one marking of the three trials is shown in Table 1.

TABLE 1: HELENSVILLE TRIALS — PROPORTION OF GROUND COVERED WITH TALL FESCUE

Rate Paraquat (lb)		Trial 1 (%)	Trial 2 (%)	Trial 3 (%)
	Date Application:	20/8/65	25/2/66	1/6/66
	Date Marking:	6/12/65	17/8/67	17/3/67
0		83	98	95
0.25		65	88	80
0.5		53	58	27
0.75		48	48	6
1		43	43	13

The table shows that the August and February trials (Trials 1 and 2, respectively) gave similar results. There was no effective control. After an initial desiccation, regrowths appeared very quickly and six months later most of the plants had almost completely recovered.

Trial 3 (June application) gave good control at 0.75 lb and 1 lb of paraquat. Tall fescue was replaced on these plots by *Lotus* spp.

DISCUSSION

- (1) The use of 0.75 lb of paraquat on tall fescue in the early winter period extends the season of effective chemical control.
- (2) During the February/March period, 2,2-DPA at 15 lb gives useful control. Pasture re-establishment following this treatment may be slow owing to residual effects.
- (3) Mowing the tall fescue a month or two prior to chemical treatment appears worth while.
- (4) Repeated low mowings will also reduce the tall fescue population.
- (5) Competition from other species will prevent reinfestation of tall fescue.

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