

Pasture seedlings respond to fungicides on Northern Tablelands of N.S.W.

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Field observations over recent years have indicated that seedling losses in pastures during establishment on the Northern Tablelands of N.S.W. can be extreme, particularly in areas dominated by rat's tail fescue (*Vulpia myuros*). In a glasshouse trial, the use of a fungicide seed treatment markedly enhanced seedling emergence and early survival. A field trial was conducted to evaluate the effectiveness of a range of fungicides in controlling damping-off in pastures.

Methods

After intensive grazing, the field site, which was dominated by rat's tail fescue, was sprayed with glyphosate and direct drilled 10 days later under cool, damp conditions on a granite soil near Armidale. The pasture species sown were Redquin red clover (at 6 kg/ha) and Demeter tall fescue (at 8 kg/ha), each treated with one of 10 fungicides (Table 1) applied at their respective recommended rates.

Results and discussion

Extreme seedling losses were not observed in this trial. Nevertheless, at 39 days after sowing, five of the fungicide treatments (Table 1) significantly increased the number of red clover seedlings (by up to 100%) compared to the untreated control whilst for tall fescue, two fungicides significantly improved seedling numbers.

Table 1. Effect of fungicide seed treatment on the emergence and early growth of red clover and tall fescue.

Fungicide	Emergence		Dry matter yield of red clover	
	red clover (%)	fescue (%)	at 19 weeks (kg/ha)	at 30 weeks (kg/ha)
Oxadixyl	42.7*	22.6*	158*	572
Fosetyl-Al	41.4*	26.4*	159*	727
Metalaxyl	34.8*	21.3	133	397
Euparen	34.4*	21.8	67	233
Hymexazol	34.2*	14.5	146*	666
Captan	31.7	15.5	87	503
Iprodione	27.8	18.7	99	439
Thiram	26.5	20.2	92	294
Tolclofos-methyl	25.5	19.3	81	229
Raxil	25.5	18.2	98	387
Nil	21.9	14.8	58	165

* significantly greater than the nil control ($P < 0.05$) (Dunnett's *t* test).

With three of the fungicides, the increased seedling numbers were reflected in significantly higher yields of red clover at 19 weeks after sowing: however, at 30 weeks after sowing, in spite of a four-fold increase in red clover yield, the differences were not significant. No significant differences in fescue yield were observed. The high variability associated with this trial is thought to be due to infestations of scarab larvae which seriously damaged two of the replicates in early summer. Further work is necessary to identify the fungal organism(s) responsible, to document how serious and widespread seedling damping-off is and to identify the most effective control strategy.

