

Phalaris establishment - sowing alternate rows to overcome perennial ryegrass competition

R.D. Hill

Department of Agriculture and Rural Affairs, Ballarat, Victoria 3350

Perennial ryegrass is frequently sown by farmers in a mixture with phalaris which results in poor phalaris establishment. Two experiments confirmed that the two species are poor companions and preliminary results suggest that sowing alternate rows will overcome the problem.

Methods

A pilot trial, with phalaris/ryegrass and phalaris/tall fescue mixtures, was sown in large unreplicated blocks in 1982. In 1983 a replicated experiment was established to further evaluate the effects of ryegrass competition on phalaris establishment and vigour. 3kg/ha of phalaris was sown with perennial ryegrass at 0, 3 and 6 kg/ha and results of an assessment conducted 18 months after sowing are presented.

Results and discussions

In the 1982 blocks the phalaris establishment was reduced by 41% when sown with 4 kg of perennial ryegrass. At the eight week evaluation the phalaris mean height was 5 cm in the ryegrass plots compared with 22 cm when sown as a pure sward. When sown with tall fescue the phalaris was not adversely affected, even though the fescue was as vigorous as the ryegrass.

The 1983 experiment (Table 1) confirmed that ryegrass was very competitive against phalaris. At the 18 month assessment phalaris numbers had been reduced by 68% when sown with ryegrass at 6kg per hectare and the number and length of the phalaris tillers had also been reduced by 50%.

Table I. The effect of ryegrass competition on phalaris establishment and growth 18 months after sowing.

Treatment kg/ha				Plants/m of row		Phalaris tillers	
Phalaris	Ryegrass			Phalaris	Ryegrass	No./plant	Length (cm)
1	3	+	6	5	18	11	5.5
2	3	+	3	10	7.6	10	5.5
3	3	+	0	15.3	0	22	12.5
L.S.D. 0.05				1.25	1.03		

It was postulated that sowing the phalaris and ryegrass in alternate rows would overcome the problem and allow farmers to benefit from the desirable characteristics of both species. In further work to test this assumption in 1988 it was observed that phalaris establishment, when sown in a mixture with 6 kg ryegrass, was 87% less than when sown in alternate rows with the ryegrass.

Broadacre farmer confirmation of both the competitiveness of perennial ryegrass and the success of alternate rows in overcoming it encourages us to further develop the technique in 1989.