

The effect of paclobutrazol on the growth of fiord faba beans

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Studies conducted on the growth and development of faba beans by Baldwin (1980) (1) showed that despite good pod set in the cultivar Fiord, pod loss after flowering was high. It was considered that poor pod retention could have been due to intra-plant competition for photosynthates between the developing stem and the young pods during flowering and early pod development.

Attiya et al. (1983) (2) found that foliar applications of the growth regulant paclobutrazol (Cultar?) reduced stem elongation in faba beans and increased both pod retention and grain yield.

Methods

Experiments were conducted on a crop of Fiord faba beans at Roseworthy in 1986 and 1987. In the first experiment on a crop sown on April 27, 1986, paclobutrazol was applied at 500 g/ha at the commencement of flowering. The 1987 experiment involved three times of sowing (Table 2). Paclobutrazol was applied at 500 g/ha at the start of flowering.

Discussion

In the 1986 experiment, 500 g/ha paclobutrazol decreased crop height, reduced lodging, and produced a significant increase in the number of pods per plant and in grain yield compared with an untreated control (Table 1). The seasonal conditions were favourable to growth.

Table 1. The effect of the growth regulant paclobutrazol (at 500 g/ha) on the growth and yield of Fiord faba beans in 1986

	Crop height (mm)	Pods/plant	Grain yield (kg/ha)
Paclobutrazol	695	16.9	4,853
Untreated control	1,015	13.2	3,984
LSD (P = 0.01)	49	3.4	472

The 1987 growing season was less favourable, with severe moisture stress in late September and early October. Paclobutrazol only increased seed yields in the early sown treatments (Table 2). Pod loss was high during late September and early October in all treatments.

Table 2. The effect of 1987 dates of sowing and application of 500 g/ha of paclobutrazol on grain yield (kg/ha) of Fiord faba beans

	Date of sowing		
	8/5	7/6	4/7
Paclobutrazol	2,945	2,427	1,433
Untreated control	2,656	2,431	1,636

LSD for comparing differences within dates of sowing = 278 (P = 0.05).

It is considered that under conditions that favour high yields in faba beans, a determinate habit of growth could be a desirable characteristic.

1. Baldwin, B.J. (1980). International Congress Dryland Farming, 1980.
2. Attiya H.J., et al. (1983). Proc. Agron. Soc. N.Z. 1983.