

BRACKEN CONTROL IN PASTURES WITH ASULAM

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In Australia, bracken has been rated as a serious weed of pasture by many authors, including O'Brien (1963), Whittet (1968), Auld (1971) and Hoskin (1973). A number of features contribute to its importance as a weed in pasture. Because of its vigorous growth potential it is able to rapidly encroach less intensively utilized land. Its extensive underground rhizome system provides an excellent source of nutrients, enabling it to respond to the opening rainfall in a new season. Its quick emergence gives it an advantage over slower establishing species. The large fronds which form a canopy exert a considerable shading effect on subordinate vegetation, and effectively exclude most other flora. Where deep cultivation is not possible, such as on steep hilly country, stony soils and rocky outcrops, or where cultivation would cause erosion, bracken survives and reduces available grazing acreages.

The activity of asulam on bracken (*Pteridium aquilinum*) was first reported by Holroyd *et al.* (1970) and has been confirmed since. Trials were thus initiated in Victoria in 1972 on *P. esculentum* at 70 sites using two dilutions, one part 'Asulox' (400 g asulam per litre) in 99 parts water, and one part in 149 parts water, using three times of application, viz late spring, early autumn and late autumn. The results indicated that asulam at the lower dilution reliably controlled bracken if applied in the late autumn, when the autumn germinating fronds were fully expanded. Excellent control was obtained with late spring applications in the Western District, though this was not confirmed in other regions of Victoria. The 1 in 149 dilution was not sufficiently reliable in any region or at any time of application.

Further work was carried out in late autumn 1974. Sites in New South Wales, Victoria and South Australia were sprayed with 'Asulox' at 1 in 99, 1 in 149, 12 litres per hectare (4.8 kg a.c.) and 8 litres per hectare (3.2 kg a.c.). Earlier findings were substantiated, and this work also concluded that 4.8 kg a.c. per hectare also gave reliable control. A 92.5% frond reduction occurred after 12 months at this rate using boom spray and misting equipment. It was noted that a high percentage of senescing fronds at spraying reduced the long-term effect by lowering the asulam uptake. Spraying after frosts had similar effects.

Grass species showed variable responses to treatment with asulam. Major grass species such as *Lolium perenne*, *Phalaris*