

that a more complete evaluation of the dormancy requirements of *G. parviflora* might allow other cultural measures to be used, such as repeated cultivation as a means of stimulating emergence and then destruction of seedlings before planting a crop.

SOME BIOLOGICAL ASPECTS OF BRACKEN IN VICTORIA

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Several features contribute to the importance of bracken (*Pteridium esculentum*) as a weed. The extensive underground rhizome system enables the plant to respond quickly to favourable growth conditions at any time of the year. As the fronds are partially developed, but not emerged, by the end of winter, this facilitates their quick emergence in spring, giving the plant an advantage over plants which need to germinate before emerging. The large fronds so formed exert a considerable shading effect on the subordinate flora with the resultant suppression and gradual elimination of these plants. Eventually, a litter layer of dead fronds builds up which effectively excludes most other plants. The plant also constitutes a hazard to stock because of toxic constituents which include cyanogenetic glycosides, ecdysone, antheridiagens, thiaminase and radiomimetic toxins. Recent work indicates that some of these poisons are cumulative whilst others have been traced in the milk of lactating cattle.

The majority, 60-80%, of the annual production of new fronds in an unmolested stand emerge in the spring (October to December). Occasionally fronds emerge over the summer, however the only other substantial emergence, 20-40%, occurs in the autumn (April-May), following the autumn rains. Generally the fronds emerging in spring senesce over the summer and finally die off over the winter whilst those which emerge in the autumn gradually senesce over the winter and finally die off in the spring. Estimates of photosynthetic