WEEDS IN PASTURE AND GRAZING LANDS IN VICTORIA

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THE SIGNIFICANCE OF PASTURE WEEDS IN VICTORIAN PRIMARY PRODUCTION

In Victoria, the species commonly regarded as major weeds of pasture include heliotrope, ragwort, bracken fern, thistles, rushes, blackberry, St John's wort, sorrel, Paterson's curse, docks, onion grass, and bent grass, and in some circumstances, also capeweed, Erodium species, Poa annua and barley grass. The overall impact of such species on animal production is small, even though they are important in more or less localized areas in various parts of the State, and on individual farms may cause serious economic loss. Where weeds are present, stock management can often be used to avoid all or most of their undesirable effects, and where inedible weeds are occupying a significant proportion of potentially pasture land, some of the loss in animal production can in most cases be absorbed by upward adjustment of stocking rate on the remaining area.

The concept of a 'weed' in pasture has been changing. It has been recognized in recent years that a number of species previously classified as weeds - e.g., capeweed, Erodium, barley grass - possess valuable characteristics as fodder plants. Such species are usually unavailable, unattractive, dangerous or otherwise undesirable for stock for only part of the year (during which time they can often be avoided by appropriate management) and are useful contributors to the feed pool at other times. In this sense, they are little different from even the more highly regarded sown species: e.g., subterranean clover can cause bloat or infertility, phalaris can cause 'staggers' or 'sudden death'.

PRESENT PRACTICE OF WEED CONTROL

The main emphasis by farmers in current weed control is on the use of herbicides. In the case of a few weeds (e.g., bracken fern, rushes) mowing or slashing is the favoured control measure in the absence of effective chemicals. Occasionally stock are deliberately (rather than accidentally) managed so as to control seeding or growth of weeds. In relatively few instances are pastures cultivated specifically to destroy weeds.

The use of chemicals for weed control was stimulated in the early 1950's following the commercial production of selective

hormone-type weedicides. Further impetus has been provided by introduction since then of a variety of herbicides with greater specificity and selectivity. A comparatively recent boost was given when the non-residual bipyridyl herbicides came on the market - these materials are mainly used either to selectively destroy unwanted species or to suppress or destroy existing pasture preparatory to oversowing a new pasture mixture.

Control of weeds (other than proclaimed noxious weeds) in pastures rests upon the decision of the individual farmer, and is often haphazardly practised without much regard for economics. Frequently no alternative species are sown after a weed has been destroyed - this results in an unproductive pasture which is often quickly re-invaded by the same or other weeds. Often the decision to control a weed is based on consideration only of its undesirable features rather than by balancing its good and bad points against an economic background.

EFFECTIVENESS OF RESEARCH, EXTENSION, AND LEGISLATION IN CONTROLLING WEEDS

A considerable amount of research has been conducted by Government and commercial interests into aspects of the chemical control of a wide range of weed species, but few such studies have taken into account the overall economics of the operation, including damage to associated useful species. There has been much less research devoted to ecological, biological, and mechanical approaches to weed control; and even less to investigation of the question of whether a particular 'weed' warrants control or encouragement.

Generally, any effective method of killing or suppressing a weed, particularly by chemical means, has been well publicized through Government and private channels, and widely accepted. In this sense, extension has been effective. It has been less effective in that there has been a general failure to point out the high indirect costs of some weed control methods; and too seldom is it stressed that provision of an alternate plant community to supplant the weed is an essential part of any weed control procedure.

In Victoria, administration of the Act of Parliament, enforcing the control of weeds designated 'noxious' is in the hands of the Department of Crown Lands and Survey. Field officers of this Department are based in about 140 districts, and policing of the legislation, covering about 90 proclaimed species, is on the whole reasonably effective. However, emphasis is upon destruction of the weed rather than upon modification of the conditions favouring its presence - to this extent the legislation tends to result in suppression of

a weed rather than its eradication, and any relaxation of the campaign is likely to be followed by rapid re-infestation. A further factor limiting the effectiveness of legislation is the sometimes prohibitive cost of eradicating heavy infestations of hard-to-kill weeds.