

dormancy and percentage germination of seeds from these plants. Times of panicle emergence, flowering and maturity are being recorded, together with a number of vegetative, spikelet and seed characters. The raw data will be analysed using multivariate techniques.

It is hoped that by using many characters the predictive value of the classification may be superior to that achieved previously. Alternatively, by introducing into the process of classification information about dormancy and susceptibility to triallate, single purpose classifications may be produced which can be used to predict the behaviour of wild oat populations under various systems of management.

#### DIFFERENCES IN THE WEED STATUS AND BIOLOGY OF FIDDLE DOCK AND CURLED DOCK

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Fiddle dock (*Rumex pulcher*) is a serious weed of permanent annual pastures in the south west of Western Australia. One way of assessing why it is adapted to these pastures is to compare and contrast its weed status and biology with other species.

#### DISTRIBUTION AND WEED STATUS

In most parts of the world docks are weeds of sporadic occurrence in arable land, wasteland and wet areas. Curled dock (*R. crispus*) is common in these situations throughout the world. It is widespread in Western Australia, but is of little consequence as an agricultural weed.

Docks can also be serious weeds over large areas of pasture. Examples, apart from fiddle dock in Western Australia, are *R. obtusifolius* in Britain and southern Europe and *R. alpinus* at higher altitudes in southern Europe as reported by Carpenter (1972). In contrast to curled dock these species are restricted in their distribution. Fiddle dock originated in the Mediterranean region and is restricted to parts of the world with cool temperate winter-rainfall climates.

## COMPARATIVE BIOLOGY

Fiddle dock and curled dock have been compared in Western Australian studies. The aim of this work has been to determine what ecological advantage fiddle dock has over curled dock, to facilitate its more serious colonization of pasture. Comparisons were made on the regenerative capacity of their rootstocks, the seed germination patterns and the establishment and persistence of their seedlings in different environments.

The results show that there is no significant difference between the species in the resistance of their rootstocks to dehydration. Both survive the hot, dry Western Australian summers in an environmentally induced dormant state.

When sown with annual ryegrass, *Lolium rigidum*, curled dock seedlings established as well or better than fiddle dock seedlings; however, both species are poor competitors in the seedling year. British studies gave similar results when comparing *R. obtusifolius* - the British grassland weed pest - with curled dock.

Results of preliminary evaluations on the seed germination pattern show that fiddle dock seed germinates more readily than curled dock in the autumn in Western Australia. This pattern has been evident with seed collected in the field in the autumn and with seed collected at the end of the growing season and stored in the laboratory. This aspect warrants further study as it may explain why curled dock is unable to become established in pasture.

## CONCLUSION

Fiddle dock is a serious weed pest in permanent annual pastures in the south west of Western Australia. One reason for its dominance in this situation compared with the ubiquitous curled dock may be that its pattern of seed germination is better suited to the environment.