Assessment of the weed potential of rubus cultivars of horticultural significance

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The cultivation of blackberries in Tasmania is a potentially profitable industry. The Australian processing industry requires more than $0.5 million worth per year, and much of this fruit is imported. Economists have estimated an annual rate of return on investment of 32% for a four hectare planting of mechanically harvested blackberry cultivars (Tas. Dept Agric., unpublished data). In addition, blackberry production would increase both farm diversity and the utilization of mechanical harvesters now restricted to raspberry harvesting.

Commercial blackberry production using mechanical harvesting would almost certainly require the importation into Tasmania of selected erect-growing blackberry cultivars from overseas.

European blackberry *(Rubus fruticosus* L. agg.) is regarded as a serious weed in southern Australia. The cost of blackberry as a weed involves both the loss of production due to its presence and the cost of control measures. A 1981 report by the Tasmanian Department of Agriculture estimated the cost of control of, and the loss in production due to, blackberry at up to $2.2 million per annum.

Most of the *Rubus* cultivars suitable for commercial production in Tasmania are related to *R. fruticosus* agg. and their importation into the State could increase the present blackberry weed problem by direct escapes from cultivation, by seedlings or by hybridisation with each other or with naturalised blackberries. Thus, the weed potential of any imported cultivars needs to he assessed at the same time as the horticultural potential.

Amor (1) has presented an empirical method for ranking *Rubus* species on their weed potential, but his method takes no account of important factors such as sexual reproduction, response to varying environmental features, ease of control or ability to hybridise with other *Rubus* species and cultivars.

The assessment of weed potential should be in terms of:-

- i Weed potential of the imported cultivars themselves
  Comparison of morphology, reproduction, seedling characteristics, biological and chemical control and growth in relation to varying environmental factors (light, moisture, soil fertility) of the imported cultivars and a selection of local strains of *R. fruticosus* agg.
- ii Weed potential of hybrids resulting from crossbreeding of the imported cultivars and existing weedy blackberries.
  Mass screening of seedlings resulting from controlled and uncontrolled crossing between different imported cultivars or between imported cultivars and existing weedy strains in terms of the features in (i) above.

Imported cultivars would he maintained under quarantine conditions until considered 'safe' for release. In this way, the chances of releasing cultivars which would enhance the blackberry weed problem in Tasmania by extending the ecological range of blackberry, increasing the weed problem within the present range or developing resistance to chemical or biological control measures would be minimised. At the same time, the horticultural industry would not unneccessarily be deprived of blackberry cultivars of commercial importance.

1. Amor, R.L. 1973. Weed Res. 13, 218-223.