

THE ALLELOPATHIC IMPACT OF GOOSEFOOT ON CROPS AND PASTURES

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Goosefoot (*Chenopodium pumilio*), a widespread weed of southern Australia, was examined for its allelopathic impact on crops and pastures following reports of massive establishment problems in goosefoot residues in Western Australia. Germination suppression from 0-100% and growth inhibition from 70-90% were recorded for the pasture species. However, the overall impact on wheat and lupins was more drastic because of their greater sensitivity. Wheat was less susceptible than lupins, probably because of its shorter fibrous root system. With lupins, the rapid growth of its tap root is thought to enhance the uptake of the rain-soluble allelochemicals being leached down the soil profile. This explanation was supported by a field experiment which showed that shallow seeding of wheat into the goosefoot residues could overcome the allelopathic impact.

HYDROCOTYLE RANUNCULOIDES IN THE CANNING RIVER, WESTERN AUSTRALIA

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The floating aquatic weed *Hydrocotyle ranunculoides* infested the lower reaches of the Canning River in Perth, Western Australia between 1983 and 1993, probably as a result of careless disposal of aquaria waste. *Hydrocotyle* has not previously been recorded as a serious weed in Australian waterways although a close relative, *H. bonariensis*, has caused problems in Singapore, southern USA and South America.

In November 1991 a removal program was successful in removing the bulk of the weed but due to the lack of follow-up treatment the mats regrew.

In the absence of a recognised control protocol a working group of state and local government agencies and special interest groups was formed to develop an effective control program. An integrated strategy was adopted, in the first instance a short term program to physically remove the bulk of the weed, and a longer term program aimed at eradication. The river was cleared of the weed during the first phase using a combination of physical and chemical methods in 1993 at a cost estimated at \$150,000.