

Alligator weed: from backyards to nature in Victoria

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Summary The discovery of a large number of suburban backyard alligator weed infestations in Victoria in 1996 and 1997 led to the development and implementation of a management program. There are some naturalised infestations established in rivers, creeks, wetlands and reserves as the weed escaped from backyards into the natural environment. The management program is well underway to locate, manage and possibly eradicate all alligator weed infestations from Victoria.

Keywords Alligator weed, backyards, naturalised infestations.

INTRODUCTION

Alligator weed (*Alternanthera philoxeroides* (Mart.) Griseb) is an invasive weed that is native to South America. It was discovered in Australia in the 1940s in New South Wales as a ballast contaminant. It infests a range of water resources in New South Wales, Queensland, ACT and Victoria. Alligator weed is a weed of National Significance (WoNS) and one of Australia's worst weeds due to its invasiveness, spread potential, and economic and environmental impacts. Unlike other aquatic weeds, alligator weed has the ability to grow vigorously under terrestrial situations. It is very difficult to control on land because roots are thick, woody and rhizome-like and can grow up to 60 to 90 cm deep in the soil (Julien 1995).

In the early 1990s, most Sri Lankan expatriates living in Melbourne had their own patch of home grown 'mukunuwenna' (*Alternanthera sessilis*) a traditional leafy vegetable used in Sri Lanka (Gunasekera and Bonilla 2001). However, the Sri Lankan community has actually been growing alligator weed in their backyards by mistake due to its similar appearance. Alligator weed has been declared a State Prohibited Weed in Victoria. The management of State Prohibited Weeds (under the *Catchment and Land Protection Act 1994*) is one of the key components of the Victorian Weed Alert Program.

After the first discovery of the weed in 1996, the Victorian Department of Primary Industries implemented a program to locate and manage the backyard weed infestations in Victoria by establishing a close

relationship with the Sri Lankan community. Later, alligator weed was found in rivers, creeks, reserves and wetlands as it escaped from backyards.

MATERIALS AND METHODS

The alligator weed management program was initiated in the summer of 1996–1997. The main aim of the project was to survey the total extent of alligator weed infestations in Victoria. Firstly, an alligator weed identification leaflet was produced. The next step was to identify all possible Sri Lankan names, addresses and telephone numbers listed in the White Pages. In late 1996, a survey form, identification leaflet and reply paid envelop were mailed out to the collected addresses. Personal contacts, a range of community groups and an ethnic radio program were also used to disseminate further information. A public awareness campaign also spread the message across the State. Five different leaflets, a bookmark and a fridge magnet were produced for distribution to the public. More than 100 newspaper/newsletter articles were published. Radio and TV programs, and seven information workshops were done during this period.

Identifying a replacement plant was one of the key factors that contributed to public participation of the early stages of the program. An Australian native plant (*Alternanthera denticulata*) was selected as it has similar characters to the mukunuwenna and was also used as a vegetable in Sri Lanka. The plant was analysed for chemical composition by the State Chemistry Laboratory, Werribee, Victoria. Samples of the plant were distributed to Sri Lankan families for consideration and they were requested to report on its suitability as a domestic vegetable. Following successful testing, this plant was introduced to the Sri Lankan community.

There was strong demand from the community and more than 5000 seedlings were distributed through the Buddhist temples, food fairs and Sri Lankan grocery shops.

The alligator weed management program started in November 1997. All known infestations were ranked according to the risk of naturalisation using proximity to waterways, size of the infestation and

land status as risk indicators. A total of 225 infestations were ranked as a high priority for treatment over the summer of 1997–1998 with a further 200 planned for the following summer of 1998–1999. As there is no herbicide registered for the control of alligator weed under terrestrial conditions in Victoria, two herbicides (glyphosate and dichlobenil) were used under off-label conditions.

RESULTS

The mail survey was very successful with a greater than 50% response rate. As a result of the intensive media campaign and other contact, 805 backyards containing alligator weed infestations were located in 130 suburbs in Melbourne. New reports of backyard infestations have declined since the year 2000. Only one new backyard infestation has been reported during the past 16 months.

The total number of naturalised infestations located in Victoria during the last 10 years is 42. The majority of these infestations were located by the Melbourne Water operational staff and the Merri Creek Management Committee members in areas managed by them.

In addition, a recent survey conducted by Melbourne Water staff in March 2007 found the largest alligator weed infestation ever discovered in Victoria. It was located at the Patterson River in Carrum. This river belongs to Melbourne Water and they conduct surveys and weed management activities along the river. There were approximately 52 different infestations located along the river over a 4 km stretch which included the National Sports Centre during their recent survey.

DISCUSSION

The management of alligator weed in Victoria has achieved good results. Only five backyards out of a total 805 contained re-growth following initial treatment. As anticipated, the alligator weed problem in backyards has now declined and is a relatively minor issue that requires low level maintenance and public awareness.

There were 42 naturalised infestations located in Victoria during the last 10 years. Repeated application of the herbicide bioactive glyphosate was the only option available for use over water until 2005. An application was submitted to the Australian Pesticides and Veterinary Medicines Authority (APVMA) to grant a permit to use metsulfuron methyl on alligator weed in aquatic environments. A permit was approved in April 2005 to use low concentration of metsulfuron for alligator weed control. Treatments were conducted in summer 2005 and 2006. The total number of naturalised infestations in Hallam Drain and Eumemmering Creek was reduced from 27 to 10 and 24 to 16 respectively. The recently located Patterson River infestation will be treated in the summer of 2007–2008 with glyphosate bioactive as the metsulfuron permit does not cover Patterson River.

An alligator weed task force was re-established in August 2007 to coordinate the program. This taskforce had been disbanded. It would be worthwhile for the taskforce to have continued for few more years.

The Sri Lankan community welcomed the replacement vegetable plant and started to grow it in their backyards. Some people decided to grow the plant on a commercial basis and supply it to local Sri Lankan grocery stores.

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REFERENCES

- Gunasekera, L. and Bonilla, J. (2001). Alligator weed: tasty vegetable in Australian backyards. *Journal of Aquatic Plant Management* 39, 17–20.
- Julien, M.H. (1995). *Alternanthera philoxeroides* (Mart.) Griseb. In 'The biology of Australian weeds, Volume 1', eds R.H. Groves, R.C.H. Shepherd and R.G. Richardson, pp. 1–12. (R.G. and F.J. Richardson, Melbourne).