

ERADICATION OF ALLIGATOR WEED IN QUEENSLAND WITH (ETHNIC) COMMUNITY SUPPORT: CURRENT PROGRESS

S.A. Vitelli^A, M. Bryannah^B, J. Reberger^C, and K.A. Noble^D

^A Department of Natural Resources, Alan Fletcher Research Station, PO Box 36, Sherwood, Queensland 4075, Australia

^B Department of Natural Resources, Landcentre, Locked Bag 40, Coorparoo DC, Queensland 4151, Australia

^C Department of Natural Resources, PO Box 864, Ipswich, Queensland 4305, Australia

^D Department of Natural Resources, PO Box 5318 MC, Townsville, Queensland 4810, Australia

Summary On 22 December 1995, an infestation of alligator weed (*Alternanthera philoxeroides*) was located in Brisbane, which required immediate action to prevent its spread. Subsequently, it was found that alligator weed and a non-weedy native (*Alternanthera sessilis*) were being used within some ethnic groups as both a vegetable and medicinal herb. A strong association between the presence of alligator weed and certain sections of the public presented particular challenges to the extension response.

Alligator weed is declared a P1 and P2 plant in Queensland. These categories prohibit introduction and require immediate destruction of the plant. While legislation allowed the immediate destruction of the plant, other issues had to be considered by the Department of Natural Resources (DNR). It was likely that alligator weed was introduced to Queensland by these communities, and has been actively distributed by them. A strong legislative approach could have resulted in the communities feeling ostracised, leading to them withholding information or disposing of the plant inappropriately. Recognizing the complexity of the situation, DNR adopted a community communication approach to win support and locate further infestations.

Cultural values and language barriers had to be addressed. From the communities' perspective, alligator weed, which was a plant of significant cultural value, had been described as a weed and was being taken from them. The potential impact of alligator weed as a pest had to be explained to gain maximum community co-operation in locating infestations and treating them. This was encouraged by providing *A. sessilis* plants in exchange for alligator weed, thus returning something of value to the community.

The extension campaign involved personal contact with the community and its leaders to design and produce appropriate media materials. The success of this approach has been reflected by the detection of high numbers of confirmed alligator weed sites through community contacts.

The alligator weed situation highlights both the potential for introduction and distribution of exotic plants by ethnic communities, and the necessity of involving their representatives in extension planning.

INTRODUCTION

Alligator weed was thought to have been introduced into Botany Bay and Newcastle in the ballast of a ship (Auld and Medd 1987). It has established well in south-east New South Wales (NSW) and across the Great Dividing Range at Barron Box Swamp near Griffith. Experience in NSW shows that the weed is difficult and expensive to control, especially in its terrestrial form.

Alligator weed threatens agriculture, the natural environment and recreation facilities through its ability to out-compete other species in any situation where water is not limiting. As Figure 1 shows that the potential for alligator weed to spread through Queensland is high (Julien *et al.* 1995). DNR has responsibility for management of declared weeds and, with the assistance of local authorities, was required to prevent the establishment of alligator weed in Queensland through a rapid, strategic response to the weed.

A technique using community feedback is being employed to educate and promote action in the control of alligator weed. This paper is an account of the methods currently being employed. The process is not complete and is constantly undergoing development and refinement.

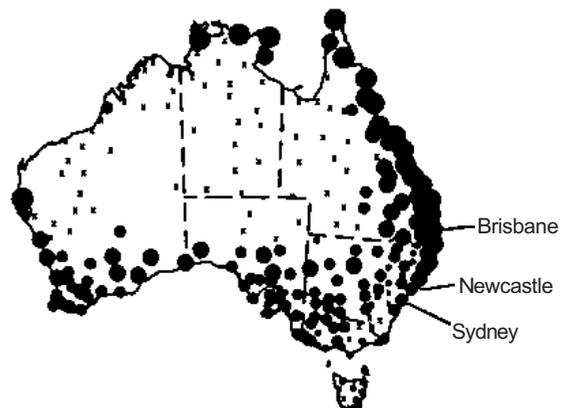


Figure 1. Potential distribution of alligator weed in Australia (Julien *et al.* 1995). Dot size indicates suitability – smallest = not suitable, largest = highly suitable.

METHODS

The Communications for Technology Transfer (CTTA) model was developed in 1985 through a USAID funded project and introduced new concepts derived from various disciplines involved in social change (McClure 1991). These concepts were added to the conventional Network Model (Rhoades 1984) and Chambers *et al.* (1989) Farmer-Back-to-Farmer model. The resulting model is as follows:

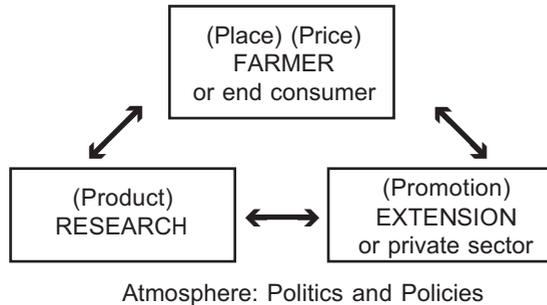


Figure 2. The CTTA Model (McClure 1991, p. 183).

The above model utilizes the marketing concepts of product, place, price and promotion and also incorporates policies and politics which McClure (1991) suggests are important dynamic aspects in the environment of this communication model.

The model relies on an assessment of place, price, promotion, product, policies and politics as they relate to the audience (McClure 1991). A DNR task force was formed to undertake these studies using interviews and surveys into the community structures.

The model has been adapted to suit the requirements of DNR. The farmer in this case can be considered the ethnic communities which are made up of a number of sub-sets with active cultural/political differences. The research is the operation of the emergency response team including information collection with extension being the actual development and delivery of information to the communities involved.

Place is the cultural context of alligator weed with price being the loss of a valued plant to the community. The promotion or information phase begins with messages being tailored to the respective consumer (in this case the ethnic community) through the use of multimedia approaches. It is important these messages continue and follow an order which reinforces the previous message.

The model incorporates ongoing evaluation and is flexible enough to change direction as new issues arise from contact with the ethnic community (that is, it allows for flux in the atmosphere – policies and politics).

Issue definition and information collection A weed ecologist of the same ethnic background to the primary stakeholders was appointed in the first instance to collect information and outline the problem to the community.

Telephone surveys were undertaken to identify possible infestations within these community groups. Telephone numbers provided by the ethnic communities were used to undertake short interviews to assess the presence of alligator weed. Information gathered was used to construct a genealogy of spread of alligator weed through the community. Ethnic markets were also searched for the presence of alligator weed.

Semi-structured interviews with individuals and small groups were important in determining the attitudes of the community towards the alligator weed problem.

The instigation of an alligator weed telephone hotline was another method used to collect information. Respondents names and addresses were recorded and follow up checks were conducted to determine whether alligator weed was present at reported locations.

Information promotion A number of methods were chosen to promote information to the ethnic communities. Ethnic radio stations and community newsletters were a means to disseminate information in the relevant languages for the communities. Ethnic community gatherings were formally addressed to outline the importance of this weed to Queensland and the community's role in preventing its establishment and spread.

An alligator weed warning/identification brochure was developed and is still being used as the primary information tool. This brochure was produced using good quality colour photography. The associated text provided a brief description of alligator weed, the problems associated with alligator weed, potential distribution of alligator weed and what actions people were to take if they found alligator weed. A copy of the alligator weed identification brochure was forwarded to callers of the alligator weed hotline.

Electronic media has been used for the general public. New infestations have been reported in relevant local newspapers as infestations were located. Television was used in the public awareness phase with segments being filmed for news reports and a children's program which focused on environmental education.

Evaluation The CTTA model requires formative and summative evaluation throughout the process, and requires feedback from the end consumer to assist with evaluation. Formative evaluation is the constant evaluation of the situation which allows for adjustments to be made (McClure 1991). Summative evaluation is defined as the assessment of pilot projects against the final change (McClure 1991).

Proposals and options to improve the information flow and provide information relevant to the needs of the community were gathered through interaction with committee groups, such as social/cultural groups, school groups and through personal contact with community members and religious leaders. Issues which arose were implemented into the extension program. This aptly illustrates the dynamic nature of the CTTA model in action.

RESULTS AND DISCUSSION

When alligator weed was first identified DNR quickly established a working task force to identify how and why alligator weed was found in Queensland. It became obvious through research that the means of introduction and spread of alligator weed was different to other weeds present in Queensland and that it was being used by some ethnic communities as a vegetable or herb. Unlike any agricultural extension program used to improve awareness and instigate action the alligator weed situation for DNR was more complex. DNR needed to gain support from the ethnic community to identify all locations of alligator weed prior to implementation of the control program.

The DNR task force group decided that it would not publicly identify the groups who were using alligator weed. If the ethnic communities had been singled out in this way, further complexities relating to racial and political issues (the environment) may have interfered with community co-operation.

A primary concern was that the ethnic communities may dispose of alligator weed in an inappropriate manner in response to fear, causing the further spread of the weed. Other factors DNR considered included the attitude of the ethnic communities to the plant. A plant of significant cultural value was being targeted for removal. Although the community were using both *A. sessilis* and alligator weed, they were not aware that one was a declared weed in Australia. It was of vital importance that this plant was identified as a weed with an explanation from DNR legitimizing the removal of a food plant from the community. The option of replacing it with a non-weedy alternative was, therefore, extremely attractive.

This led to DNR directing its research (product development) towards these ethnic communities to build a close association with them. It was thought a person of similar ethnic background would assist with the community liaison in the first instance to gather information from them.

The ethnic weed ecologist was able to obtain a telephone list from the community. The telephone survey served its purpose, in gaining further interaction with the community in locating alligator weed infestations. Some community members acknowledged the fact that they were using alligator weed and they would like it removed. Some comments included 'I have been waiting

for you to ring' and 'I was wondering when you were going to ring me', suggesting that the general awareness campaign had been effective.

Throughout the telephone survey other issues began to emerge, such as the presence of sub-cultures within the community. It was found the sub-groups did not interact well with each other. Because of this factor it became difficult for the appointed weed ecologist to work with all the sub-cultures.

DNR continued to improve its links with the community through public seminars, broadcasts on ethnic radio and by utilizing the ethnic community newsletters. One public seminar was conducted at a school group because it was believed this arena would allow more contact with the female population who used alligator weed for cooking.

It was important that a survey of the ethnic markets be undertaken to establish whether the plant was being sold commercially or was restricted to backyard growing. The survey was unable to locate any alligator weed at ethnic markets. This contradicted what community members had previously said to DNR, suggesting that either the market owners removed alligator weed from their shelves prior to the DNR survey or that there had been some confusion in the community about the sale of alligator weed.

Although information was provided to the general public through electronic media to boost the awareness about new infestations of alligator weed, it was important to develop other strategies to release information should the electronic media lose interest.

The alligator weed warning brochure was designed to be useful to the general community but specific enough to reach the target audience (ethnic communities using alligator weed). A description of the weed using black and white drawings was not considered effective, due to the non-descript nature of alligator weed, especially in a garden situation. The word warning was added to the brochure to further highlight the importance of this weed which is considered a P1 and P2 plant (required immediate destruction) in Queensland.

As part of the campaign an alligator weed hotline was promoted at every opportunity. The hotline was used as a first stop in the early stages to release the alligator weed warning brochure to the caller. The hotline number was also used to keep records of suspected infestations and was effective in providing consistent information to a range of callers regardless of the availability of particular DNR officers.

To encourage further co-operation and provide an arena for product research, DNR met with the community groups and held semi-structured interviews to evaluate the current process. The meetings were held at ethnic community venues to allow the community members to be comfortable and induce information flow. The

community members targeted consisted of community representatives and religious leaders. The information gathered did not vary significantly, whether provided by groups or individuals. Information was also gathered here which improved methods of information dissemination, to bring forward more members from the community who were growing alligator weed.

Feedback from these community members was positive, though they highlighted the need for information dissemination to continue. This approach further improved the link between DNR and the ethnic community and improved DNR's understanding of how the communities functioned. For example, the importance cultural and social values/manners such as graciousness and thankfulness became apparent. The community members also seemed to be avid gardeners, well educated and had respect for the environment. These values were subsequently targeted in the extension (promotion) by DNR.

By working with the ethnic community information promotion gaps were identified. One group wished for more information to be translated into their language and printed in their community newsletters including the regular use of ethnic community radio. Other members of the community requested further information about the control strategy. A leaflet was subsequently developed to explain this procedure clearly, and was considered important since the control strategy is a lengthy process, involving repeated visits and restrictions on the use of privately owned land.

CONCLUSION

The approaches being used are supported by Carter and Batte (1993) who found in a study comparing nineteen education delivery methods, that farm magazines, books and bulletins, newsletters, personal contact and field days in that order are the most preferred means of information dissemination. Hopkins *et al.* (1993) has shown that the percentage uptake of information in the farming sector through the use of mass media to be approximately 25%. This figure was expected to be higher if ethnic media sources were targeted. Contact with the community confirmed that a high proportion of the groups used ethnic newsletters and ethnic radio for information gathering.

The advantages of working with the ethnic communities has been further demonstrated by their willingness to provide contacts in other centres throughout Queensland. It is the intention of DNR, for the local Land Protection Officer to form links with these members and continue the process in a spirit of respect and trust.

The promotion of an *A. sessilis* exchange program has recently commenced and is hoped to further reinforce

the positive links of DNR with the community. This plant is being offered free of charge in return for information on alligator weed.

In the future DNR needs to continue to work with the ethnic community and develop through a decision making process, methods to improve the rate of removal of alligator weed from Queensland. It is important that DNR and the ethnic community continue to work together, evaluate their progress and identify new ways to ensure continued community support.

The alligator weed situation highlights how plants can be easily and unwittingly imported into an area. It is important to note that solutions may not be as simple as they first appear. In a country such as Australia which has a diverse group of inhabitants, cultures and attitudes of individuals must be considered. This situation highlights the advantages of an approach which is dynamic, responsive, sensitive and aimed at maximizing community responsibility for weed awareness.

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