

## An interactive identification key to the noxious weeds of Australia

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**Summary** This paper outlines an interactive identification and information CD to the *Noxious Weeds of Australia*, which is being developed using LucID. It is hoped that this CD will be an up-to-date resource for those with an interest in managing declared weeds and link to other online resources. This project was instigated by CAWSS (The Council of Australian Weed Science Societies), who have seen the need for such a resource and provided initial funding towards the development of the key.

**Keywords** Weed identification, noxious, LucID.

### INTRODUCTION

There are about 400 species of declared or noxious weeds in Australia. Weed species are declared noxious for a wide variety of reasons (e.g. they invade native ecosystems or are a danger to public health), but they all may cause serious economic, social or environmental impacts if left unchecked. Easy identification of these species is one of the most fundamental requirements to their detection and management.

Unlike regular dichotomous keys, *Noxious Weeds of Australia* is a LucID matrix key. Matrix keys allow the user to decide in which order to work through the characters in the key, depending on the specimen being investigated and the user's ability to distinguish between different character states (Norton *et al.* 2000). Hence, if a user has a weed specimen without certain important taxonomic characters present, such as floral structures, he or she can use the characters that are present to identify the specimen or at least narrow the field of candidates. This is a major advantage over dichotomous keys, where if a certain character is absent one cannot progress further through the key. As the user selects character states, those weeds to which these character states do not apply are rejected, reducing the list of possible weeds. Once a specimen has been identified to a particular species, the key then provides multi-media fact sheets (photos, pictures, and text descriptions) that can be accessed in order to confirm the identification.

### DISCUSSION

The key itself includes all of the declared noxious species in Australia, about 400 species, and uses a relatively basic set of characters so that a great deal of

botanical knowledge is not required for its use. Many vegetative and seed characters are included so that identification will be easier if, as is often the case, floral characters are not present on weed specimens. As well as these noxious species, many other common weeds (i.e. about 300 species) are also included in the key. This is so that a user can identify an unknown species, and determine if it is noxious or otherwise.

All characters present in the key are defined, and their different states illustrated and described. Each species has comprehensive information attached so that once an identification is made it can be checked. This information includes photos of different stages of the plant's life cycle, a distribution map, as well as text descriptions including its declaration status in the various states of Australia and links to appropriate government web sites for control recommendations. In many cases photos of plants that are most commonly confused with these noxious weeds have also been included.

A tutorial can be accessed from the front screen that explains how to use the CD. An interactive tutorial is also included within the LucID key, which provides a step by step demonstration of its use. The CD can also be browsed like a web page to view additional resources such as reference lists, links to weed related web sites, and a glossary. A search function is also provided so that finding information about a certain subject or species is simplified.

It is hoped that the CD will be regularly updated. In subsequent versions, it is anticipated that potential weed threats that are not yet present in Australia will also be added to the product along with any newly declared noxious species.

All those concerned with the management of weeds in Australia should find this product useful. In particular, it is hoped that state and local weed control officers, primary producers, weed scientists, extension officers, and tertiary and secondary teachers will use this resource.

### REFERENCES

- Norton, G.A., Patterson, D.J. and Schneider, M. (2000). 'LucID: A multimedia education tool for identification and diagnostics.' *CAL-laborate*, June 2000, 15-18.