

# finalreport

**Project code:** WEE.0136

**Prepared by:** Raelene Kwong

DPI Victoria

**Date published:** June 2008

**ISBN:** 9 781 741 912 593

**PUBLISHED BY**

Meat & Livestock Australia Limited  
Locked Bag 991  
NORTH SYDNEY NSW 2059

## **Biological control of Paterson's curse - an interactive guide**

Meat & Livestock Australia acknowledges the matching funds provided by the Australian Government to support the research and development detailed in this publication.

This publication is published by Meat & Livestock Australia Limited ABN 39 081 678 364 (MLA). Care is taken to ensure the accuracy of the information contained in this publication. However MLA cannot accept responsibility for the accuracy or completeness of the information or opinions contained in the publication. You should make your own enquiries before making decisions concerning your interests. Reproduction in whole or in part of this publication is prohibited without prior written consent of MLA.

## Abstract

Primary producers, agronomists and weed extension officers require easy to access information to facilitate the ongoing biological control of Paterson's curse. An interactive guide, in the form of a CD, has been developed to provide a comprehensive biological control resource. The CD incorporates data and expertise from researchers and end-users in all States and territories involved in the national biological control program, ensuring it will become a unique national resource.

Structurally, the CD comprises a multi-level cascade that can be navigated spatially (clickable maps) or through standard dynamic menus and/or static links.

The CD will be especially useful to Weed Officers, landholders and Landcare groups as a one-stop shop of information on Paterson's curse and the use of biological control, including:

- how to identify sites suitable for biological control,
- information on how to source, collect and redistribute biological control agents,
- how to maintain biological control sites, including managing agent populations through wet and dry periods,
- guidelines on how to monitor biological control agent progress, and
- information on Paterson's curse, the general principles of biological control and integrated weed management, and relevant brochures and publications relating to the weed and agents.

The CD will provide all the information needed to enable the ongoing delivery of biological control of Paterson's curse to the farming community via community groups and extension agents. This will contribute to maintaining pressure on the spread of Paterson's curse, resulting in reduced costs in weed control and improved pasture and animal production.

## Executive Summary

For more than a decade the State Departments of Agriculture in Victoria, NSW, South and Western Australia and CSIRO with support from MLA and AWI, have progressed the development and delivery of a suite of biological control agents for the control of Paterson's curse. Impacts of the agents are now being realised.

Primary producers, agronomists and weed extension officers require easy to access information to facilitate the ongoing biological control of Paterson's curse. An interactive guide, in the form of a CD, has been developed to provide a comprehensive biological control resource. The CD incorporates data and expertise from researchers and end-users in all States and territories involved in the national biological control program, ensuring it will become a unique national resource.

Users are able to drill down to regional scales to discover, maps of biological control release site locations for redistribution purposes, or to find specific information about biological control agents. A section is dedicated to the integration of biological control with other farm management practices, including a visual 'calendar of activity'. This section contains a series of case studies highlighting real farmer experiences living with biological control. The CD will be especially useful to landholders and Landcare groups by detailing opportunities for biological control including:

- how to identify sites suitable for biological control,
- information on how to source, collect and redistribute biological control agents,
- how to maintain biological control sites, including managing agent populations through wet and dry periods,
- guidelines on how to monitor biological control agent progress, and
- information on Paterson's curse, the general principles of biological control and integrated weed management, and relevant brochures and publications relating to the weed and agents.

Included in the CD are links to further information about weeds and biological control, including the legal responsibilities of land managers to manage weeds.

The CD has been produced and provided to Agency partners in the project for distribution through NRM, agricultural industry and existing Biological Control of Paterson's curse farmer networks.

## Contents

|          | Page   |
|----------|--|
| <b>1</b> | <b>Background..... 5</b>   |
| <b>2</b> | <b>Project Objectives ..... 5</b>  |
| <b>3</b> | <b>Methodology..... 5</b>  |
| <b>4</b> | <b>Results and Discussion ..... 6</b>  |
| <b>5</b> | <b>Success in Achieving Objectives..... 7</b>  |
| <b>6</b> | <b>Impact on Meat and Livestock Industry – now &amp; in five<br/>years time ..... 7</b>                        |
| <b>7</b> | <b>Conclusions and Recommendations..... 8</b>  |
| <b>8</b> | <b>Appendices..... 9</b>   |
| a.       | Appendix 1 Paterson's curse CD Distribution Pathways .....9  |
| b.       | Appendix 2 Poster: Developing a one-stop shop for<br>biological control of Paterson's curse in Australia.....9 |

## 1 Background

---

The objective of the project is to develop and deliver a tool kit in the form of a CD providing a biological control of Paterson's curse resource to support primary producers, agronomists and Weed Extension personnel. By incorporating data and expertise from all states involved in the national biological control program, this CD will become a unique national resource. The CD will contain easy to access information, applicable to all states, which will allow users to facilitate the ongoing biocontrol of Paterson's curse.

## 2 Project Objectives

---

- 1) Develop a CD providing information to the target audience on access and management of biological weed control agents for Paterson's curse.
- 2) Delivery plan implemented for the 500 copies provided to each State

## 3 Methodology

---

- Material for the CD was collated from the Agency partners in the project – DPI Victoria, NSW DPI, SARDI, DAFWA.
- The CD was developed with a multi-level cascade structure which can be navigated spatially (click-on maps) or through standard dynamic menus and/or static links. Information was categorised by user type (ie farmer, weed officer, etc) enabling its users to navigate to information relevant to their needs. Users will be able to drill down to regional scales to discover maps of nursery site locations for redistribution purposes. Information on how to collect, redistribute and monitor biocontrol agents were provided. A section is dedicated to the integration of biological control with other farm management practices, including a visual 'calendar of activity'. This section also contains a series of case studies highlighting real farmer experiences with living with biological control.
- The CD contains information targeted at landholder and Landcare groups seeking opportunities for biocontrol; accessing agents; identification of establishing nursery sites; managing populations through wet and dry periods; estimates of adequate populations; monitoring tools (frequency / method); biocontrol and other control methods; network contact details; maps of where agents are located; where agents could be effective; relevant brochures/ publications relating to the project weeds or agents.
- The structural and graphic design was sub-contracted to Coolatai Technologies Pty Ltd. Coolatai Technologies was responsible for the development of the complex content cascade and the spatial and menu based navigational systems. This included the migration of the content into the cascade as well as providing the graphic design to create individual page templates (branding).
- A CD distribution strategy was formulated based on state needs at the national workshop.

## 4 Results and Discussion

---

Market research was carried out in order to determine who the end users of a CD on the Biological Control of Paterson's curse might be, and what content would be required in such a CD to meet their needs. The research was carried out at the national workshop (held in Victoria on March 28-29, 2006 and in continuing consultation with State collaborators, weeds officers, Landcare facilitators, and other end users. As a result of this work, three groups of end users have been identified; landholder/managers, enforcement officers, and extension officers.

These end user groups require both general information on the biological control of Paterson's curse, and some more specific information for the different end user groups. In order to determine the specific information requirements for each of these groups, a series of questions was put to targeted individuals representing these groups.

*Landholder/managers* – The representatives of this group of end users identified the following information requirements for the CD:

- Biological information about Paterson's curse – how to identify it, life cycle
- What is biological control – how does it work, will it work for me, how much does it cost, how quickly does it work
- Biological control of Paterson's curse – what are the agents being used, are they safe
- Integrated Weed Management (IWM) – what is it, how would it fit in with my farming/grazing regime, where does biological control fit in with IWM, can I use biological control if I'm spraying pesticides
- Key contacts in local area – is biological control available in my area, is it suitable for me, who do I contact, where do I get the agents
- Collection, release and redistribution of biological control agents – what is a nursery site, how do I choose a release site, how do I collect the agents, what equipment will I need, how do I monitor the agents when I have released them
- Frequently Asked Questions

*Enforcement Officers* – Biological control is only one part of an enforcement officer's brief; therefore, the representatives of this group of end users identified the following information requirements for the CD:

- IWM – using biological control with other management techniques
- Biological information about the weed and its lifecycle, and the agents and their lifecycles
- Status of release sites of biological control agents in their area - maps
- Regional contacts
- Landholder/managers obligations in managing Paterson's curse infestations

*Extension Officers* – These individuals are in a position of providing advice about the biological control of Paterson's curse, therefore, the representatives of this group of end users identified the following information requirements for the CD:

- IWM – how to use biological control with other methods of management
- Biological control agents for Paterson's curse – what are the agents, which are suitable, agent lifecycle
- Collection and release technical details– how to choose a nursery site, how many insects are required for release, when do I collect and release

- Maps of releases – localities of nursery sites
- Regional contacts – building networks across areas/regions

A series of consultative meetings with the sub-contractor, Coolatai Technologies Pty Ltd, were undertaken in order to design the structure and content of the CD. The CD was designed as a multi-level cascade structure which can be navigated spatially (click-on maps) or through standard dynamic menus and static links. Because the information requirements for end user groups have common themes, rather than organising the content and structure by end user groups, this has been organised by themes, enabling users to navigate to information relevant to their needs.

CD development completed in April 2008 with a total of 2,500 copies printed. 500 copies were provided to each of the following:

Ken Henry, South Australian Research and Development Institute  
Paul Wilson, Department of Agriculture and Food, Western Australia,  
Paul Sullivan, NSW Department of Primary Industries  
Tom Morley/Raelene Kwong, Victorian Department of Primary Industries

A further 500 copies were provided to MLA.

The distribution of the CD's to end-users will be conducted through an extension of funding from MLA commencing 2008 using the Distribution Pathways Plan (see Appendix 1). Through a series of 'train-the-trainer'-type workshops, weed officers will be trained in the use of the CD, to enable the redistribution of Paterson's curse through farmer groups to continue. As a broad indication, the CD's will be allocated to user groups as outlined below:

| <b>CD Distribution to User Groups</b> | <b>Estimated Quantity of CD's</b>   |
|---------------------------------------|---|
| NRM Board/Ag Weed Officers            | 30-50   |
| Local Government                      | 10-20   |
| Agronomists                           | 10  |
| Landcare Groups                       | 10-20   |
| Field days, workshops etc             | 200-250   |
| Other (please specify)                | 100-200 Schools, community groups, small land holders, general public enquiries |

## **5 Success in Achieving Objectives**

---

All objectives of the project were successfully completed

## **6 Impact on Meat and Livestock Industry – now & in five years time**

---

This project represents the culmination of a very significant funding commitment (since 1987) by the wool and meat industries in Australia into the biological control of Paterson's curse.

The project has provided a resource for delivery of agents and brings together a range of control options as a resource to support primary producers and advisors.

By incorporating data and expertise from all states involved in the national biological control program, this CD will become a unique national resource. The CD will become a true 'One Stop Pato Shop'.

This legacy of the biocontrol project will allow ongoing delivery via community groups, and extension agents. It will contribute to maintaining pressure on the spread of Paterson's curse, resulting in reduced costs of weed control and improved pasture and animal production.

## **7 Conclusions and Recommendations**

---

In the process of undertaking the market research for the CD, many end users identified the desirability of having the information collated for the CD available as a web page. In fact, a number of interviewees suggested that their first step in finding information about Paterson's curse and biological control would have been a web search. There is currently no on-line comprehensive guide to the biological control of Paterson's curse. We therefore recommend that the Paterson's curse CD be made available through the internet.



## **8 Appendices**

- a. Appendix 1 Paterson's curse CD Distribution Pathways**
  - b. Appendix 2 Poster: Developing a one-stop shop for biological control of Paterson's curse in Australia**
-

**Appendix 1. Paterson's Curse CD Distribution Pathway Plan**



