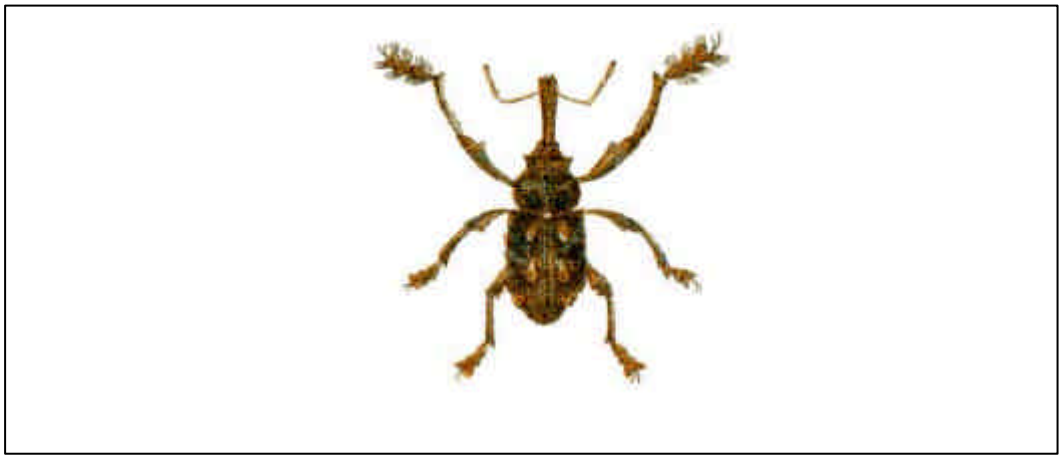
Elephant Weevil impact and control in vineyards – Stage 1: literature review of recent findings about Elephant Weevil (*Orthorhinus cylindrirostris*).



FINAL REPORT to

GRAPE AND WINE RESEARCH & DEVELOPMENT CORPORATION

Project Number: **RT 02/34-4**

Principal Investigator: **Ms Mary Retallack**

Research Organisation: **Langhorne Creek Vine Improvement**

Date: **11th April 2003**

Executive Summary:

This project has resulted in a concise compilation of all recent and relevant information about the vineyard pest – Elephant Weevil (*Orthorhinus Cylindrirostris*). It highlights the basic biology, breeding cycle and known behaviour of this insect as well as some useful vine symptoms and damage to expect to find in locations where this pest has been active.

There appears to be a possible link between vine health and incidence and level of damage caused by the Elephant Weevil in grape vines. This could have implications for vineyard management, location choices for vineyard establishment and even variety choice.

The information gleaned from this review will enable detailed grower education about the Elephant Weevil, hopefully leading to successful regional assessment of activity of this pest. The ultimate aim is to inform growers and help them best manage if not eradicate Elephant Weevil from vineyards, thus reducing crop losses and allowing efficient vineyard maintenance.

Background:

There has been an Elephant Weevil problem in Langhorne Creek for several years. In the spring of 2001 it was noted that the problem seemed to be escalating, though in a regionally inconsistent manner. It was estimated that yield was reduced by 15% in some vineyards (vintage 2002) due to damage caused by this pest. This loss in yield may continue for 2-3 years in affected vine blocks due to the requirement to retrain or at worst re-establish vines. The incidence of Elephant Weevil damage is not unique to Langhorne Creek and any project outcomes will be of benefit to the whole industry. The unpredictable nature of pest levels, potential yield losses and lack of grower knowledge about this pest warranted further investigation.

Greater knowledge of the biology of Elephant Weevil will hopefully allow future biological control &/or vineyard management control methods.

A previous review of literature was conducted with limited time and resources and focussed on Australian studies and knowledge of Elephant Weevil, particularly in the Hunter Valley (NSW). A more extensive review of both Australian and overseas research on Elephant and other weevils was conducted in order to gain a fuller understanding of the insect's behaviour, breeding cycles, incidence, favoured conditions and vegetation targets/host plants.

This project has highlighted the limited and scattered information available about the Elephant Weevil in Australia. There is a need to educate growers about the pest so that they know what to look for in their vineyards. A possible link between vine vigour &/or growing conditions and the incidence of weevil infestation is one area to be considered more closely. Ultimately, the question of vineyard management and control of this pest must be addressed.

Objectives:

To obtain a reference source of known research and findings about the biology, behaviour, control, and identification of Elephant Weevil (*Orthorhinus cylindrirostris*) that will assist future project stages (stages 2-4) with the aim of preventing losses to wine grapegrowers due to this pest.

To compile a summary report of the major findings for distribution to local grape growers, Technical & Training and Vine Improvement members, as well as other

regional grape grower and Vine Improvement groups. All finding will be filed at the Langhorne Creek Wine Industry Council to provide a public and industry resource.

The summary report will be made available to interested regional groups via email &/or hardcopy (upon request to the Langhorne Creek Wine Industry Council), newsletter feature, and for viewing at the Langhorne Creek Wine Industry Council office. All regional grape grower and Vine Improvement groups will be contacted via email or letter to notify the availability of the information. The information collected is to form the basis for development of a 'glove box' guide for grape growers to assist with identification and monitoring of the pest and resultant vine damage. It will also form the basis for grower seminars. These education outcomes form part of a proposed Stage 2 element of the major Weevil project.

Outcome/Conclusion: (see Attached document)

The compiled literature review has been attached to this report for consideration.
It is hoped that information from this review can be used to raise grower awareness of this pest in local vineyards so that ultimately a regional survey and field assessments can be conducted to best effect.