Enhancing biodiversity in vineyards
Resources for winegrowers
Presented by Amy Retallack

Vineyard biodiversity and insect interactions
Workshop notes

- Sections 1 to 2 – Background information
  - The importance of enhancing biodiversity in the vineyard.
- Sections 3 to 4 – Plant species (insecta)
  - Biodiversity, insects and how to go about selecting appropriate plant species when establishing insectaria.
- Sections 5 to 9 – Arthropods (vineyard pests and beneficials)
  - Encouraging ‘ecosystem services’ in vineyards, integrated pest management options and the identification of arthropods (both pest and beneficial species) commonly found in vineyards.
- Sections 10 to 12 – Reference material
  - This section includes checklists and links to supporting resources

Enhancing biodiversity in vineyards
What does this mean for you?

A system high in biodiversity tends to be more resilient against change.

The more complex the system is, the better buffered it is likely to be and the more able to adapt to a change in its dynamics.

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Enhancing biodiversity in vineyards

Vineyard scaping

The incorporation of alternative vegetation in and around a vineyard property can be referred to as 'vineyard scaping'.

Vineyard production area
- Mid-row and under-vine areas
- Vineyard corners
- Headlands (not producing land / machinery access)
- Borders (including windbreaks and shelter belts)
- Non-producing areas around infrastructure (ditches, winery, tanking pits), water storage
- Riparian zones along waterways (in tree lines, rivers), and
- Land unsuitable for productive grape growing (salt-ends).

Vineyard biodiversity and insect interactions

What does this mean for you?

There are potentially thousands of free little workers helping to control pest and diseases within the vineyard.

‘When we kill off the natural enemies of a pest, we inherit their work’

Consider ways of bolstering the value and performance of existing vineyard structures.

Vineyard biodiversity and insect interactions

What to look for?

Vineyard biodiversity and insect interactions

When are beneficials active?

Fig. 1: Approximate periods of high abundance of beneficials in the study vineyard

Here are some actions to consider:
- Reduce chemical pressure on ecosystems
- Introduce new species
- Enhance habitat diversity
- Improve soil health
- Implement Integrated Pest Management (IPM)
- Promote biodiversity

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Vineyard biodiversity and insect interactions
What do insectaria offer beneficiaries? Food and shelter

Vineyard Biodiversity and Insect Interactions
What do insectaria offer beneficiaries? Food

Nectar
Pollen

Vineyard biodiversity and insect interactions
What do (introduced/native) insectaria offer beneficiaries?

Ways of encouraging biodiversity
In the vineyard
- Preserve areas of remnant vegetation on the property, as habitat for plants and animals.
- Apply composted mulch or other soil amendments to enhance soil biodiversity.
- Reduce mowing to increase beneficial numbers, or mow alternate rows to retain a short stubble -- this may act as habitat for a 'beetle bank'.
- Think about how you can attract the ‘right’ bird species.
- Territorial insect-eating birds may help to patrol the vineyard, discouraging fruit eating bird species from entering.
- Where possible replace agrochemical applications with more resource efficient methods of managing nutrients and pests.

Sourcing information about local SA plant species
Go to http://www.facebook.com/RetallackWine and follow the directions provided on the website.

Potential disadvantages
Potential disadvantages of planting native vegetation in and around vineyards, may include:
- The attraction of vineyard pests, potentially increasing their populations in the vineyard.
- Vegetation can shade vines, and compete for water and nutrients; this can have a negative effect on the growth and development of vines.
- Greater frequency of sapling growth in the vineyard from species such as red gums, located near the vineyard (remove using a ‘tree popper’),
- An increased frost risk (if not managed properly), and
- An erosion risk may be created when preparing seedbeds.

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Case studies
From South Australia (Falkenberg Vineyard)

Knowledge and technology for planting native grasses in vineyards has improved.

Pelletised wallaby grass (four species mix) ready for seeding.

Second season of growth.

Case studies
From South Australia (The Terraces)

Not all insectoria species will be suited to vineyard situations and may be especially difficult to establish in dry years.

Further study
PhD studies to commence in February 2012

Project
1. Evaluating pre-European (native) insectoria species to boost beneficial arthropod populations throughout the year, providing greater biological pest control options in vineyards.

Downloads
Workshop notes (including native grasses uite guide and case studies)
www.gandi.com.au > Initiatives > Regional > SA Control

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