

Business Case Study

Taltarni Vineyard & Winery



Background

The Taltarni Vineyard and Winery was established in 1969 at Moonambel, in Victoria's Pyrenees region. In 1972, this 241 acre vineyard (97.5 hectares) was discovered and purchased by owner John Goelet, who had undertaken a worldwide search for a site comparable to the great vineyards of Bordeaux, France.

Taltarni began commercial production of its wines in 1977, and now produces approximately 100,000 cases (9 litres equivalent) of a range of sparkling, red and white wines annually. Taltarni Vineyards employs approximately 30 permanent staff within Australia and casual staff as required.

Summary

Between 2006 and 2009, Taltarni's Pyrenees manager and viticulturist, Matthew Bailey, researched, developed and implemented a plan to establish an insectarium at their Moonambel Vineyard. The insectarium was the central component of their Integrated Pest Management (IPM) strategy, which involved the planting of vegetation corridors within 50 metres of the grape vines to build large populations of beneficial insects. Many of these beneficial insects are natural predators of vineyard pests such as LBAM (light brown apple moth) and grape vine moth, which has assisted the vineyard to control these pests and substantially reduced the requirement for the spraying of chemical pesticides.

Taltarni's Moonambel Vineyard has now established 3 vegetation corridors, each with 1,000-2,000 native bushes and shrubs. **It is estimated the beneficial insects in the insectarium save the vineyard around \$12,000 per annum in chemical, fuel, machinery and labour costs associated the spraying of herbicides, insecticides and fungicides to control vineyard pests.**

Insectarium Objectives

Matthew had a keen interest enhancing the viability, sustainability and biodiversity of the viticulture industry and the implementation of a more ecologically and environmentally friendly approach to wine production. Taltarni recycles poly pipe, steel and wire, and is exploring energy efficiency options. **In this case, Matthew wanted to apply a systems approach to their pest management.**

The conventional approach to pest control in the viticulture industry has been heavily reliant on the spraying of chemicals, which carried a substantial financial cost, as well as an environmental cost. The application of pesticides kills not only the pest insects, but also the beneficial insects, reducing the overall biodiversity of the vineyard.

Establishing an Insectarium

Matthew and the Taltarni team undertook extensive research and consulted with experts to determine which insects they wanted to attract, which plants were suitable for the vineyard and would also provide suitable habitat for the beneficial insects, and where these vegetation corridors should be situated.



A vegetation corridor at the Moonambel vineyard. Many native and indigenous species were planted, including Grevilleas, Banksias, Melaleucas, Eucalypts, Acacias and Callistemon. Source: www.taltarni.com.au

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Vegetation Corridors

Taltarni established 3 vegetation corridors at strategic locations around the vineyard, all within the recommended 50-150 metres of the vines. The plant species chosen for the insectarium were required to be:

- beneficial to a wide range of natural predators;
- easy to grow and manage, requiring minimal inputs (water, labour);
- provide little or no competition to the vines for water and nutrients;
- plants that would flower for extended periods during the growing season, including native plants, self-sowing annuals or perennial plants;
- not suitable hosts for pests (LBAM, Vine Moth)
- not growing bigger than 2-3 metres.

The range of plants selected included various cottage garden plant mixes, several groundcover species of sub clover and medics, white alyssum, several herbs, nasturtium and fennel.

The costs associated with establishing an insectarium will vary according to the number and cost of the plants used, but a 2,000 plant vegetation corridor could cost around \$9,000 and take 1-2 years to become established. Matthew estimated an insectarium with 2000 plants (1-2 metres apart) could be planted by four staff over two days, with minimal maintenance required after planting, depending on rainfall and plants selected.

Establishing a 2000-plant insectarium			
	Units	Price/unit	Total
Plants	1000	\$2.00	\$2,000
Plants	1000	\$3.50	\$3,500
Labour	2000	\$1.50/plant	\$3,000
Site preparation (ripping, water optional)			\$500
			\$9,000

For more information, visit:

- <http://www.taltarni.com.au/our-environment>
- <http://www.abc.net.au/landline/content/2010/s3180923.htm>
- http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0010/110998/Grapevine-pests-and-their-management.pdf

Insects

Once established, the habitat provided by the insectarium plantings has substantially increased the populations of beneficial insects that were already present at the Moonambel vineyard.

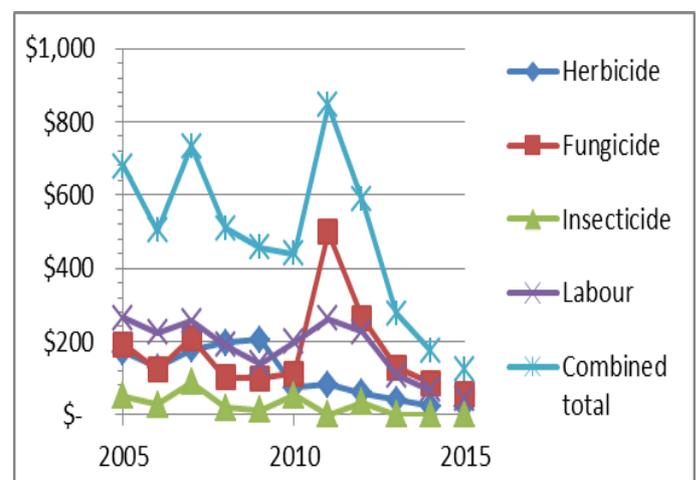
These beneficial predators include parasitoids wasps (trichogramma and dolichovespula), beetles (Coleoptera latrididae and staphylinida), hoverflies (Diptera, empididae, sciaridae) and lacewings, assassin bugs, praying mantis, dragonflies, predator shield bugs, lady birds, spiders and predator thrips/mites.

There has also been a noticeable increase in the numbers of lizards and frogs seen around the vineyard.

Outcomes

The establishment of the insectarium has resulted in a dramatic reduction of vine moth caterpillars and Matthew expects to be able to contain the LBAM pest to an acceptable level with increased insectarium plantings.

The reduced requirement for chemical pest control has delivered substantial cost savings to the vineyard. **Applications of chemical sprays have dropped from 3-4 applications per year to one, saving approximately \$120/ha in chemical, labour, fuel, electricity and machinery costs. On the 100 hectare Moonambel vineyard, this equated to a \$12,000 saving in 2014, compared with the costs from 2005.**



Taltarni spraying costs per hectare, by year.