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Biosecurity: A Significant Issue for Wine Tourism?

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ABSTRACT

People may be significant vectors for vine diseases and pests. Yet despite the potential biosecurity risks of visitation few New Zealand wineries have biosecurity strategies in place. The paper therefore aims to examine biosecurity threats to wineries in terms of first, visitor understanding of terms used in customs declaration and their relation to their perception of vineyards; and second, the behaviours of winery visitors.

In order to undertake an exploratory assessment of biosecurity risks associated with wine tourism a short convenience survey was undertaken of winery visitors in the Canterbury, Marlborough and Central Otago wine regions of the South Island of New Zealand in January-March 2002. The survey had 324 respondents of which 69 were international visitors. The demographic profile of respondents was similar to previous profiles of New Zealand wine tourists. The results indicated that relatively few respondents recognised a vineyard as a farm therefore raising concerns about the extent to which present customs forms may identify winery or vineyard visits. Of equal concern was the extent to which the same clothing items are used from one winery visit to another, and on different trips. The paper concludes by noting the urgent need to develop more appropriate biosecurity strategies for wineries and vineyards in the light of the development of wine tourism.

Paper Type: Refereed Research Paper (Empirical Paper)

Introduction - Biosecurity: A Significant Issue for Wine Tourism?

Biosecurity issues are of great significance to the international wine industry.

Biosecurity refers to the protection of a country, region, location's or firm's economic, environmental and/or human health from harmful organisms (Biosecurity Strategy Development Team 2001a, 2001b, 2002). A number of harmful organisms currently threaten the wine industry in various parts of the world. For example, since 1998 the State of California has provided US\$65.2 million for a statewide management program and research to combat the glassy-winged sharpshooter and the deadly Pierce's disease (a bacterium, *Xylella fastidiosa*) that it carries. Accidentally introduced in 1989 through imported U.S. nursery stock, 15 counties have been identified as being infested (Wine Institute of California 2002). A recent Australian quarantine review of Pierce's Disease revealed that 127 out of the 138 plant hosts of *Xylella fastidiosa* are or have been imported into Australia, while there are approximately 321 different ways in which such hosts are brought into the country taking into account the different forms of each host (Australian Viticulture 2003).

Few students of wine are unaware of the damage wrought by phylloxera on vineyards throughout the world during the second-half of the Nineteenth Century (Ordish 1987). Although many measures have been used to counter the impact of phylloxera, not least of which is the use of resistant root stock, outbreaks still occur. For example, in New Zealand the outbreak of grape phylloxera (an aphid *Daktulosphaira vitifoliae*) in Central Otago in early 2002 reinforced the potential vulnerability of local wine growers to biosecurity risks (Central Otago Winegrowers Association (COWA) 2002). The economic impact of a phylloxera outbreak to the modern wine industry are substantial. In Western Australia it is estimated that phylloxera could cost affected growers

A\$20,000/ha in the first five years in lost production and replanting costs (Agriculture Western Australia 2000a).

For many grape diseases, including phylloxera, humans are a significant vector (Pearson & Goheen 1998). Increased personal mobility, particularly through tourism, is a potential threat to the wine industry because of the potential for the relocation of pests. Yet despite recognition of the potential role of humans in conveying grape diseases or pests there is only limited awareness of the biosecurity risks of wine tourism (Agriculture Western Australia 2000b). Nevertheless, industry stakeholder SWOT analyses of threats to wine tourism in British Columbia (Wilkins and Hall 2001) and wine and food tourism in New Zealand (Smith and Hall 2001) both reported disease as a potential threat to future development (Hall, Sharples and Smith 2003). Nevertheless, a survey of New Zealand wineries conducted in 2003 found that only 17% of the 121 respondents had a biosecurity strategy of any form in place.

The possibilities of the spread of disease or pests through winery and vineyard visitation are substantial given the recent growth of wine and food tourism (Hall et al. 2000; 2003). For example, Hall and Johnson (1998) estimated that there were approximately three million visits to wineries in New Zealand in 1997, of which 81 percent were by domestic visitors and 19 percent by international visitors. Since 1997 the number of wineries has grown from 262 to 410 in early 2003 (New Zealand Winegrowers 2003). Moreover research derived from a national survey of visitors to wineries in New Zealand note that wine tourists tend to travel to a number of wineries in a single trip and that many have visited wineries in their domestic and international travel over the previous 12 months (Mitchell and Hall 2001). Clearly, such mobility among winery visitors may create significant issues for biosecurity control. In the New Zealand rural

context the need for further biosecurity measures may become even more problematic given recent calls for increased recreational access to rural areas. For example, the report of the Land Access Ministerial Reference Group (2003) *Walking Access in the New Zealand Outdoors* noted that, 'The movement of people (and vehicles) across properties has potential repercussions for the spread of disease, pests or weeds' (p. 35), but then went on to state that 'The submissions suggest that biosecurity risks may be overstated' (2003, p. 37).

Biosecurity measures may be incorporated at each stage of international travel. For example, Australians and New Zealanders travelling overseas are often provided with biosecurity information by travel agents warning them of what they can bring back home with them. Similarly, Australian and New Zealand customs also provide such information for incoming passengers before they reach customs officials. Many countries also strictly enforce biosecurity measures during customs procedures, while where pests have been introduced into a country or region education campaigns are often carried out to try and restrict the spread of the pest (see Table 1).

One significant aspect of biosecurity is the use of customs and passenger declarations as a means of not only gathering customs duty and traveller information and educating travellers about biosecurity but also to alert customs officials to potential biosecurity risks. In addition to containing questions regarding the bringing of plant material, fruit or foodstuffs into the country, of potential interest to the grape growers are questions as to whether passengers have travelled to other rural areas or locations where they might have encountered grape diseases or pests. For example, the Australian incoming passenger card (Commonwealth of Australia 1999) asks visitors 'Have you visited a farm outside Australia in the past 30 days?' (it should also be noted that they also ask

'Are you bringing into Australia... Soil, or articles with soil attached, i.e. sporting equipment, shoes, etc?' The United States custom declaration asks if the traveller or a member of the family has 'been on a farm or a ranch outside the U.S.' (Department of the Treasury, nd). In New Zealand incoming passengers are told that 'you must declare' if 'in the past 30 days' a visitor had been 'to a farm, abattoir or meat packing house?' as well as having been 'in a forest or hiking, camping, hunting in rural areas or parkland?' (New Zealand Customs Service 2001). However, these declarations raise a fundamental question of biosecurity for the wine industry and for those businesses which encourage wine tourism, to what extent do visitors perceive a vineyard or winery as a farm?

Methodology

In order to undertake an exploratory assessment of biosecurity risks associated with wine tourism a short convenience survey was undertaken of winery visitors in the Canterbury, Marlborough and Central Otago wine regions of the South Island of New Zealand in January-March 2002. The survey had 324 respondents of which 69 were international visitors to New Zealand. The demographic profile of respondents was similar to previous research undertaken as part of the New Zealand national wine tourism survey (Mitchell and Hall 2001).

In addition to general demographic questions, respondents were asked questions as to whether or not a farm, forest, ranch or parkland was the same or similar to a vineyard. These words are utilised in the Australian, New Zealand and United States incoming passenger surveys. The term 'rural' was also used in order to see whether that word was a useful descriptor. Respondents were then asked questions regarding their previous visit to vineyards or a winery, as well as the items of clothing that they were wearing.

Findings

The responses indicated that over 60 per cent of respondents did not recognise a vineyard as a farm (Tables 2 and 3). This response is regarded as significant given the questions posed by customs agencies as to activities undertaken prior to entry into New Zealand. Moreover, the analysis of respondents revealed that there were no significant differences in associating a vineyard with a farm in terms of the level of education of the respondent. However, differences were identified in relation to the self-identified degree of wine knowledge of respondents with those with an 'advanced' level of wine knowledge perceiving a vineyard to be less like a 'farm' than those with a basic or intermediate knowledge .

The extent of the potential biosecurity threat of wine tourism is revealed when it is noted that over 90 per cent of respondents had visited a vineyard in the previous 12 months with almost half of the domestic visitors also having visited a vineyard overseas in the same time period (Tables 4 and 5). Given the potential of humans to act as a vector for pests by carrying them on their clothing, respondents were also asked about the clothes they were wearing. Significantly, 45 per cent of respondents believed that they had worn the same footwear on their last visit to a vineyard as they had on the current visit. Ten per cent believed they were wearing another piece of clothing they had worn or carried with them on their previous vineyard visit (Table 6). Personal comments to the author suggested that this was usually a jacket, with several respondents noting that they have particular sets of clothing as well as sturdy footwear which they always wore when visiting wineries and vineyards.

Conclusions

This paper has highlighted the potential importance of wine tourism for wine industry biosecurity. Although agricultural customs forms in Australia, Canada, New Zealand and the United States request information from international arrivals regarding recent farm visits, well over half of respondents to this survey of visitors to wineries in the South Island of New Zealand did not recognise the winery or the vineyard as being a farm. This clearly raises interesting issues of rurality and the business of wine tourism. However, on a more pragmatic level it has significant implications for biosecurity communication and education campaigns, particularly given demands for greater rural access for outdoor recreation purposes.

Despite the potential biosecurity risks and the significance of cellar door sales and wine tourism for their business, few New Zealand wineries have any visible biosecurity strategies, eg signage or interpretation, to prevent visitors walking in vineyards or taking plant material. Indeed, in some cases visitors are actively encouraged to have a closer look at vines and the vineyard. Such measures are extremely good with respect to education visitors about the wine industry and should be encouraged, but they need to be done in a manner which does not endanger the vine stocks on which the winery is dependent. Interestingly, wineries are very conscious of the occupation health and safety aspects of visitation to wineries and often have very clear policies and strategies by which to manage this. However, many of them have no such visitor strategy when it comes to the health and safety of their vines. Clearly, appropriate visitor practices and strategies need to be developed for the wine industry at both the national and site level; and particularly for the smaller wine producers which are the most dependent on wine tourism for their business survival.

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Table 1: Pre-border, Border and Post-border Biosecurity Strategies

Pre-Border

- Identifying threats to ecosystems.
- Profiling and modelling the characteristics of damaging or potentially damaging organisms and vectors.
- Identifying controls (in the country of origin) for selected organisms that pose a threat to destinations.
- Analysing and predicting risk pathways for unwanted organisms.
- Identifying and collating databases and expertise on unwanted organisms.
- Developing systems for rapid access to appropriate data.
- Developing import standards and compliance validation methodologies.
- Auditing exporting countries' compliance with destination biosecurity standards.
- Identifying and locating biosecurity-related risks to animal, plant and human health.
- Analysis of public attitudes and perceptions of biosecurity risks and barriers to biosecurity responses in visitor generating areas.
- Development of educational programmes in exporting regions so as to reduce likelihood of introduction of unwanted organisms in imported goods.
- Development of educational programmes for tourists in both generating and destination regions so as to reduce likelihood of introduction of unwanted organisms.

Border

- Developing improved systems, including clearance systems and sampling methodologies, and technologies for intercepting unwanted organisms according to import standards.
- Developing border containment and eradication methodologies according to import standards.
- Developing profiles of non-compliance behaviour to biosecurity requirements.

Border activities

Post-Border (includes pest management)

- Developing rapid identification techniques for unwanted organisms.
- Designing and developing methodologies for undertaking delimiting surveys for new incursions.
- Developing rapid response options for potential incursions of unwanted organisms.
- Analysis of public attitudes and perceptions of biosecurity risks and barriers to biosecurity responses in destination areas.
- Developing long-term containment, control and eradication strategies.

General

- Analysis of economic and political models for the management of biosecurity threats.
 - Development of rapid-access information systems, collections and environmental databases on unwanted organisms.
 - Improve export opportunities for 'clean' products.
 - Development of industry and public biosecurity education programmes
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Table 2: Identification of vineyard

Which of the following do you regard as the same or similar to a vineyard

	Yes	No
Farm	113 (34.9%)	211 (65.1%)
Forest	15 (4.6%)	309 (95.4%)
Parkland	63 (19.4%)	261 (81.6%)
Ranch	6 (1.9%)	318 (98.1%)
Rural	238 (73.4%)	86 (26.6%)

n=324

Table 3: Identification of winery by self-described level of wine knowledge of respondents

	Basic		Intermediate		Advanced	
Total (n=324)	39.8% (129)		50.6% (164)		9.6% (31)	
	Y	N	Y	N	Y	N
Farm	35 (27.1%)	94 (72.9%)	71 (43.3%)	93 (56.7%)	7 (22.6%)	24 (77.4%)
Parkland	26 (20.2%)	103 (79.8%)	34 (20.7%)	130 (79.3%)	3 (9.7%)	28 (91.3%)
Rural	91 (70.5%)	38 (29.5%)	123 (75%)	41 (25%)	24 (77.4%)	7 (22.6%)

Table 4: Visitation of vineyard within the previous 12 months

	Yes	No	Total
Domestic	230 (90.6%)	24 (9.4%)	254 (100%)
International	66 (95.6%)	4 (4.4%)	70 (100%)
Total	296 (91.4%)	28 (8.6%)	324 (100%)

Table 5: Visitation of vineyard overseas within the previous 12 months

	Yes	No	Total
Domestic	124 (48.8%)	130 (51.2%)	254 (100%)
International	62 (88.6%)	8 (12.4%)	70 (100%)
Total	186 (57.7%)	138 (42.3%)	325 (100%)

Table 6: Thinking of the last time you visited a vineyard prior to this current trip...

a) do you believe that you are wearing the same footwear as on your last visit

Yes	148 (45.7%)
No	150 (46.3%)
Don't know	26 (8%)
Total	324 (100%)

b) do you believe that you are wearing or carrying an article of clothing you had worn or carried with you on your last visit

Yes	34 (10.5%)
No	251 (77.5%)
Don't know	39 (12%)
Total	324 (100%)
