

CLIMATE CHANGE IMPLICATIONS FOR THE NEW ZEALAND WINE INDUSTRY

Richard Smart and David Jordan
Ruakura Agricultural Centre

The New Zealand wine industry is enjoying an international reputation for the production of quality, cool climate types of table wines. If temperature increases, as is predicted (Salinger, 1988), this advantage could be lost unless there is vineyard relocation to areas further south or to higher altitude than present production areas. Existing viticultural regions, especially in the North Island, are likely to produce fuller-bodied red wines and less fruity white wines than they now produce. Also, a larger number of cultivars (varieties) will be able to be ripened, and current marginal viticultural regions (e.g., Otago) will become safer. Grapevine growth will be enhanced by higher carbon dioxide levels and temperature, and the growing season will be lengthened. Fruit set is likely to improve on some cultivars that are currently difficult-to-set. There is a possibility of increased problems with the lack of winter dormancy in the northernmost regions, and of increased incidence of fungal diseases induced by summer rainfall. Drought is likely to become more important in our other main viticultural regions - Gisborne, Hawkes Bay, Martinborough, and Christchurch. There is also increased risk of tropical cyclones like 'Bola'.

It should be remembered that the wine industry worldwide will also be affected, to a greater or lesser extent than the industry in New Zealand. Cool climate regions like NZ and northern Europe will enjoy an increased frequency of 'vintage' years, due to warmer summers. For many regions of the world, increased temperature will probably lead to a reduction in quality of table wine styles because wine production is presently carried out in 'warm' to 'hot' environments. For example, the majority of the vineyards in Australia will be disadvantaged if temperatures increase. New Zealand is particularly well placed to develop vineyards further south or at higher altitudes. Countries such as Australia and South Africa are not as fortunate. While the Chilean land mass extends further south than NZ, this is a high rainfall region so not ideal for grape production. Relative to the wine industries in many other countries that of New Zealand is likely to be advantaged by climate change.

It is not suggested that winemakers begin relocating vineyards on the basis of current projections. However, the industry should note how weather patterns and the greenhouse debate develop over the next ten or more years and then decide on options. For example, it may be worthwhile to move to a very cool region and, initially, produce champagne style wine. If the climate warms, these vineyards will be in a good position to produce high quality, cool climate table wines in a world where there remain few cool climate producers.

One aspect of climate change that has received little attention locally is that associated with the effect of increased ultraviolet (UV) light on grapevine growth and fruit quality. Depleted ozone does not only have implications for human exposure and incidence of skin cancer, plants are also sensitive. Problems like reduced production and reduced fruit colour in red grapes could result with increased UV exposure.

References

- Salinger, M.J. (1988). New Zealand climate: past and present. In: Climate change, the New Zealand response. Ministry for the Environment, Wellington, 17-24.