

Environmental Effects of Jets on Vinyards, Crops and Humans

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Jet Flying Over Vinyards

Introduction

The exhaust from turbo prop and jet aircraft can pose a serious problem for vineyards, agriculture and residents in close proximity to airport runways. The landing and takeoff of these aircraft produce pollutants and ultrafine particles that are harmful to humans and crops.

Of particular concern to the author is the proposal to expand the airfield at the Niagara District Airport and possible effects of exhaust pollution on surrounding vineyards, crop lands and residents. This problem will be exacerbated by extending the runway from 5000 feet to 7500 feet.

For residents living in areas close to this airport, health concerns should be considered not only from breathing possible pollutants but the ultrafine particles which can pass through the lungs and into the bloodstream.

Pollutants

Combustion in jet engines as well as those used to power turbo prop aircraft can produce volatile organic compounds such as carbon dioxide, nitrogen oxide, carbon monoxide, and

sulphur dioxide as well as other hydrocarbons and ultrafine particulates. Depending on the combustion efficiency, these pollutants will disperse in the atmosphere to varying degrees. These pollutants can affect the quality of the soil and the health of the vines or crops. Another pollutant not commonly understood is ozone which can form near ground level due to the reaction of nitrogen oxide and other volatile compounds due to interaction with the sun and warm temperatures. Ozone can reduce photosynthesis which will affect plant growth and produce possible damage to plants and fruit. Studies have shown that ozone can affect the weight and taste of the grapes. This potential air pollution can also affect the quality and flavour of the wine, which should be of major concern to the surrounding vintners. Washing of the grapes will not effectively remove any volatile compounds absorbed by the skin cells. It will be essential for vintners to monitor air quality if this airport expansion proceeds. One pollutant that needs to be measured is the ultrafine particulates that can coat the grapes.

As far as agricultural crops are concerned, pollution can reduce crop yields, affect growth and reduce nutritional value. No matter how efficient the engine combustion process is, there will still be pollutants in the exhaust. These effects are cumulative and will be absorbed into the soil and crops.

Conclusion

In any development project such as airport expansion, the business benefits of bringing in thousands more potential tourists to the NOTL region must be balanced off by the potential damage to residents' health and the business interests of farmers and vintners. One must think longer term and understand that NOTL cannot accommodate this enormous influx of tourists over and above the millions of visitors it welcomes each year. The potential health risks to nearby residents must be considered as well as the negative effects on the farmers and vintners adjacent to the airport. Is it fair to ask them to accommodate reduce crops and potential major loss of business? Is this acceptable collateral damage?