



NEW ZEALAND WINE

PURE DISCOVERY

NEW ZEALAND WINEGROWERS

WIND MACHINE CODE OF PRACTICE 2008

Introduction

The New Zealand Winegrowers Wind Machine Code of Practice 2008 (the Code) represents a standard of good practice in the safe operation of wind machines and takes the form of recommendations.

The intent of the Code is to provide guidance to the wine industry on the safe operation of wind machines:

- a) when climatic conditions necessitate their use;
- b) in accordance with local council rules; and
- c) in a way that minimises risk and disturbance.

In accordance with section 3.1 of the *Guidance on Planning for the Wine Industry* (Ministry for the Environment, Guidance Note, 2007), it is noted that any standards regulating the use of frost-protection devices should recognise the infrequent occasions on which these devices may need to be used, typically dependent on factors beyond a winegrowers control.

It may be that, in some situations, strict compliance with all recommendations is impracticable. In such circumstances, every endeavour should be made to observe the intent of the Code.

The good practice recommendations in this Code are voluntary and do not displace the obligation on members to comply with the rules contained in the District Plan of their relevant regional authority or not to engage in any other conduct which may be in breach of the Resource Management Act 1991. In particular, we draw attention to the relevant rules in each region on noise limits and location of wind machine from boundary. Extracts from regulations relevant to the operation of wind machines are appended to the Code.

1 OPERATING ENVIRONMENT

1.1 Avoid operating a wind machine in the following conditions:

- fog;
- rain;
- when winds are at **7km/h** or greater; or
- when there is no risk of frost (except for maintenance purposes, which should be conducted at a time / duration to minimise intrusion).

1.2 Where possible, shield the wind machine engine and tower from vineyard sprays and/or irrigation sprinklers.

- 1.3 In order to prevent inadvertent start up the wind machine should be disarmed during periods when no frost threat exists.

2 PRE-USE INSPECTION

- 2.1 Before operating the wind machine (or activating the 'Operator Assist' or 'Automatic' function), check the following levels:
- fuel level (never allow the fuel tank to run out of fuel when wind machine is operating);
 - oil level;
 - coolant level; and
 - battery voltage levels.
- 2.2 Conduct a visual inspection of the gear box and fan for cracks, debris, tree branches and/or birds' nests that might impede the operation of the wind machine.
- 2.3 When performing pre-use inspections:
- always keep the tower between yourself and the fan; and
 - never adjust, alter or modify any part of the wind machine.
- 2.4 In order to avoid toppling the tower, only authorised and suitably trained people should climb wind machine towers.

3 WARM UP

- 3.1 It is essential to safely warm up a wind machine before use. Refer to the operating manual supplied by your manufacturer for the appropriate warm up method for your machine.
- 3.2 If set to 'Operator Assist' or 'Automatic', the machine should engage the warm up procedure automatically.

4 ON-SITE SUPERVISION

- 4.1 **Always** supervise a wind machine during operation.
- 4.2 During operation, ensure that there is access to the following:
- a set of jumper leads or spare battery;
 - hand held thermometer; and
 - portable fuel supply or regular delivery order from local fuel supplier.

5 DURATION OF USE

A wind machine may potentially operate for hours, after starting automatically at 1°C, even though no frost has occurred. The 1°C frost threshold is not absolute; the risk of frost may vary by variety, time of year, air temperature immediately preceding the temperature drop and proximity to sunrise (generally the coldest part of the day). Assess the conditions of each frost event in order to avoid unnecessary operation.

- 5.1 A wind machine should only be operated during a frost danger period.

This generally means:

- the leaves of the plant are wet; and

- the air temperature has reached a critical level as determined by you and based on your experience of past frost events.

5.2 Where these conditions no longer prevail and you are confident that the temperature within the vineyard is stable, shut the wind machine down manually.

6 SHUT DOWN

6.1 When shutting down a wind machine, follow the procedure for shut down as directed by the operating manual supplied by your manufacturer.

6.2 If set to 'Operator Assist' or 'Automatic', the machine should engage the shut down procedure automatically.

7 ANNUAL MAINTENANCE

7.1 Ensure that the wind machine is serviced annually by a suitably qualified person.

APPENDIX – PLAN RULES RELATING TO THE OPERATION OF WIND MACHINES

Section 16 of the Resource Management Act 1991

16. Duty to avoid unreasonable noise –

(1) Every occupier of land (including any premises and any coastal marine area), and every person carrying out an activity in, on, or under a water body [...] or the coastal marine area, shall adopt the best practicable option to ensure that the emission of noise from that land or water does not exceed a reasonable level.

(2) Subsection (1) does not limit the right of any local authority or consent authority to prescribe noise emission standards in plans made, or resource consents granted, for the purposes of any of sections 9, 12, 13, 14, or [15, [15A and 15B].

Proposed Wairau/Awatere Resource Management Plan

Wind machines for Frost Control

Any wind machine used for frost control shall be so constructed and operated that any noise emission measured at a distance of 300 metres shall not exceed 60 dBA L10 provided that:

- *The wind machine will be allowed to operate during the frost danger period until the leaves of the plant are dry and the air temperature has reached 2°C.*
- *The speed of the wind machine must be governed such that the top speed of the rotor does not exceed the speed of sound.*
- *The wind machine be located no closer than 500 metres to any residential zone, or within 100 metres of a dwelling house not located on the property.*

Rural Resource Area Standards (Amended Proposed Central Otago District Plan)

Wind machines for Frost Control

Any wind machine used for frost control shall be so constructed and operated that any noise emission measured at a distance of 300 metres shall not exceed 60 dBA L10 provided that:

1. *The wind machine will be allowed to operate during the frost danger period until the leaves of the plant are dry and the air temperature has reached 1°C.*
2. *The speed of the wind machine must be governed such that the top speed of the rotor does not exceed the speed of sound.*
3. *The wind machine is located no closer than 300 metres to any Residential or Rural Settlement Resource Area, or within 100 metres of a dwelling house not located on the property.*

Proposed Wairarapa District Plan

(ii) Frost protection devices

Operation of frost protection devices is a permitted activity provided that:

- (1) *The hours of operation are restricted to the times when danger of frost damage is imminent or for maintenance purposes. The frost protection devices shall be operated only when air*

temperature 1 metre above the ground is 1°C or below. The thermometer used to measure the air temperature shall be located 1 metre above the ground.

- (2) *Operation for maintenance purposes shall be restricted to between the hours of 8.00am and 6.00pm weekdays. Test operation may take place only for emergency maintenance outside these hours.*
- (3) *A written log shall be maintained, clearly recording the date and length of time the devices are used. A copy of the log shall be made available to the Councils upon request.*
- (4) *The thermometer used to determine frost danger, shall be independently assessed and calibrated by a suitably qualified technician to ensure that it accurately measures temperature and that the calibration certificate is provided to the Councils prior to the operation of the machine.*
- (5) *The device shall cease operation when the air temperature reaches 3°C.*

Hastings District Plan

14.2.9.3 Frost Protection Fans

- (a) *Users of frost protection fans must adopt the best practicable option to avoid creating an unreasonable level of noise.*
- (b) *Fans shall be separated by 300m from the boundary of any residential zone unless the noise produced by the fan does not exceed 65 dBA L10 at or within that residential zone. Fans may be located as close as 100m to a residential zone boundary subject to them being fitted with equipment demonstrated to comply with the above noise limit.*

Proposed City of Napier District Plan

57.10 Frost Protection Fans

1. *The Following conditions shall apply to all frost protection fans:*
 - (a) *Users of frost protection fans must adopt the best practicable option to avoid creating an unreasonable level of noise.*
 - (b) *Fans must be located no closer than 300m from the boundary of any residential zone unless the noise produced by the fan does not exceed 65 dBA L10 at any point within that residential zone. Fans may be located as close as 100m to a residential zone boundary subject to them being fitted with equipment demonstrated to comply with the above noise limit.*

Hurunui District Plan

Wind Machines for Frost Protection are not specifically provided for in the Hurunui District Plan and are therefore subject to the environmental amenity standards in the District Plan including noise and height. With respect to noise standards “normal agricultural practices undertaken for a limited duration, such as harvesting” are exempted from the noise standards. However with respect to height, any structure over 10 metres is a discretionary activity and therefore Hurunui District Council informs us that all of the effects of wind machines for frost control are considered at resource consent stage, including noise effects.

NB: The existing rules are under review. Contact Hurunui District Council if you would like to be involved in that review.