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Tips on Buying a Wind Machine

While wind machines have traditionally been used to help safeguard against late spring frosts, recent research at Kent State University indicates that in the East a wind machine may also be used effectively in mid-winter during periods of severe cold to keep temperatures in the vineyard above the critical level that would cause extensive damage to vines. On nights when there is a temperature inversion, the temperature near the base of a vine can be as much as 4°C lower than at the top of the vine and 6°C colder than 15 meters above the ground. A wind machine can mix the colder air on the ground with the warmer air above to raise the temperature at ground level.

The decision to buy a wind machine may depend in large part on the uses to which the wind machine is to be put. If the wind machine would be intended for use only to protect against spring frosts, comparative costs can be calculated for a wind machine with and without heaters versus the rental costs of a helicopter.

Minimum standards for wind machines have been developed by Dr. James K. Ballard of Washington State University. According to him, the tower should hold a propeller 32 to 41 feet off the ground, the motor should be strong enough to propel the air 300 to 400 feet, with 10 horsepower per acre being supplied at the propeller. The propeller should be a 6° angle from the vertical, revolve at approximately 590 revolutions per minute and make a 360-degree horizontal rotation every 4½ minutes. In a recent development, fiberglass blades are replacing aluminum blades because of their resistance to corrosion.