

Quotes from a recent independent University Field Trial that used the Danfoss Frost Protection System:

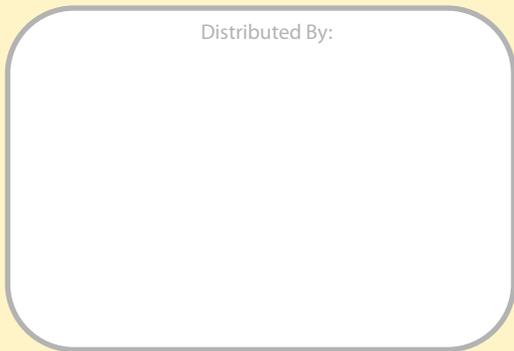
“An alternative, all electrical technique offers growers wider choice to match options with their vineyard operations.”

“However, as frosts generally occur during the ‘off-peak’ power periods, there are opportunities of added cost savings through reticulating power.”

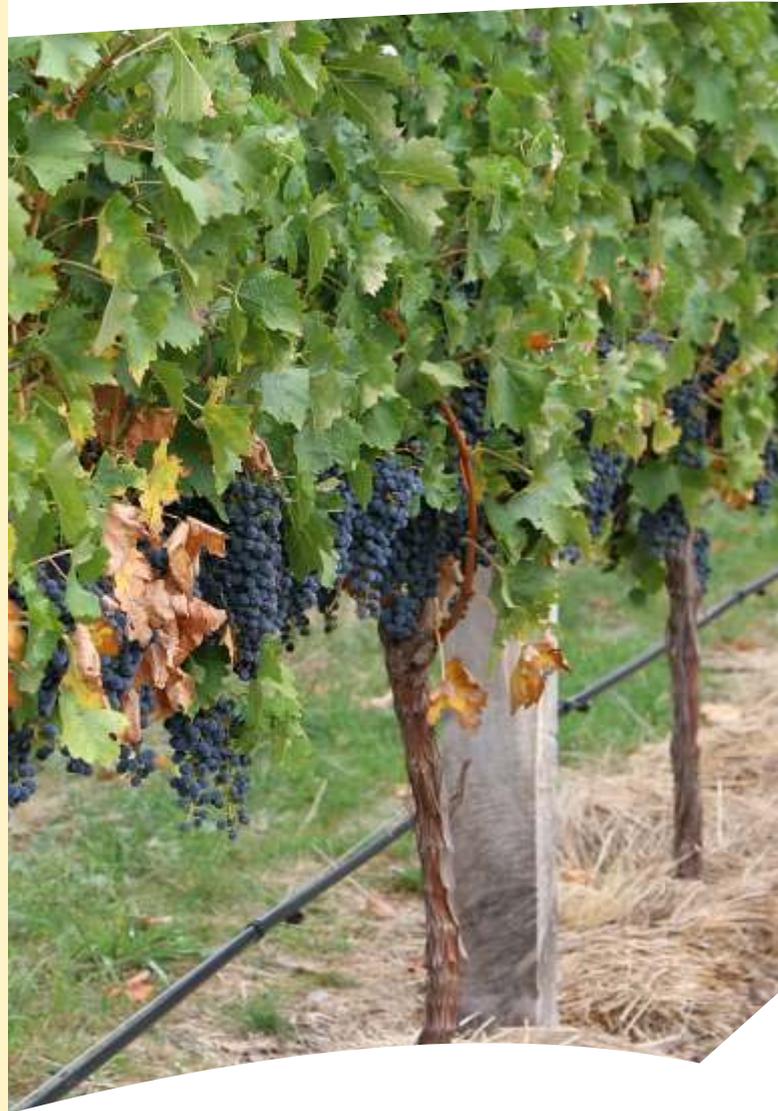
“Our own experience has shown that if the cables are wrapped onto the cordons in short ‘reaches’ of loop/counter-loop. then it is possible to unwind and drop the cable onto the ground and run a mechanical harvester safely over the vine.”



Distributed By:



Danfoss Inc.
Toll Free: 866-676-8062
Phone: 905-285-2050
Fax: 905-285-2055
www.DanfossLX.com



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Grape Frost Protection
The PROFESSIONAL'S Choice

Danfoss is one of the world's leading manufacturers of electronic and mechanical components and control systems for refrigeration and air conditioning, heating, and motion controls. We operate in more than 100 countries, employ 22,300 people, and hold more than 1,800 patents on a wide range of products. Our innovative, reliable products are backed by local sales and support to help our customers solve their greatest challenges. With its visionary and committed employees, Danfoss meets the needs of its customers through its EnVisioneeringSM partnerships. EnVisioneering focuses on developing new technologies for sustainable business growth through engineering innovation, energy efficiency and environmental responsibility.

Current frost Protection methods

Overhead Water Spraying -Traditionally the preferred method, but now restricted for use by issues of drought conditions and or environmental concerns (recent enforcement of the endangered species act of 1973 in response to the Salmon kills/Russian River and the Delta Smelt/central California)

Wind Machines -Are proven effective on flat terrain, but limited in moving air over slopes or hills and can actually damage crops if used during an advection frost.

Wind machines have proven most effective when used with heaters, but noise from motors and smoke from heaters has led to limited use in many areas.

Spray-On Protectants have no documented field data on value of effectiveness. Growers need to spray on as a routine rather than an "As Required" basis which diminishes the commercial and practical values of the approach.



Danfoss benefits over traditional frost protection

- Danfoss GX electric heating cable eliminates the need for overhead spraying for frost protection. This in turn conserves water for irrigation later in the season and saves endangered fish.
- Danfoss frost protection systems can be fully automated on temperature rise and fall which eliminates the need for field personnel during frost events.
- With Danfoss PX heating cables it now opens new opportunity for planting in areas that due to uneven, sloped and low elevation terrains cannot be protected by wind machines
- One of the many options available is to control and activate on temperate rise/fall remotely. With this feature it eliminates the 'failure factor' associated with late action on starting traditional systems to ramp up ahead of the damaging frost.
- The Danfoss Protection 'delivery system' offers frost protection in radiation as well as advection frosts. Other methods such as win machines can actually damage crops during an advection frost event.



Danfoss GX Frost Protection Cable



Danfoss GX Contractor Panel