



Garden q & a
STEPHEN BROWN

Irrigation: When to Use for Cold Protection

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Question: We need help. Our gated community irrigated 100 of 500 home lots the night of the freeze. The lots that were watered have extensive damage to the shrubs. The lots that were not are fine. The administration tells us they "helped" us by watering our lots for 25 minutes during the night of the freeze, between 2am and 6am. They compare it to citrus growers watering their crops in a freeze. They say the damage is from the wind that night. We need advice on the correct irrigation practice when a freeze is forecast. If it happens again, they still plan to irrigate some homes as the schedule dictates, and not turn off the system.

- Dick R, e-mail

Answer: Using irrigation water to save plants from freezing temperatures can have grave consequences if the relationships between plants, temperature, and water are not well understood. To begin, different plant species are damaged by cold weather at different temperatures. Our landscapes are filled with plants that can be injured when temperature is just above freezing, or drops to freezing, 32°F, for an appreciable time. These plants include crape jasmine, cocoplum, hibiscus and wild coffee. However, citrus is relatively more cold tolerant than these and many other landscape plants. This knowledge is used by citrus growers to save trees and livelihoods. Here's why. The major source of heat from irrigation is provided when the water changes from liquid to ice. As long as water is constantly changing to ice, the temperatures of the ice-water mixture will remain at 32°F. Since citrus for the most part is not damaged unless temperatures dip to 27°F and below, the mixture acts as a blanket against even colder atmospheric temperatures. Thus, the grower should begin irrigation before the freeze and keep it running until after the danger of freeze has passed. On the other hand, this ice-water mixture is capable of killing tissues of the aforementioned tropical plants as they are not tolerant of temperatures to 32°F and below. The situation is made worst when the leaves are wet and there is no protective 32°F coating. Here's why. Even on the same plant, under windy conditions, wet leaves will sustained more cold damage than dry leaves because the temperature of wet leaves will be much lower than the temperatures of dry leaves. That is because wet leaves are drained of heat faster than dry leaves and become more susceptible to cold damage. In your case, it would have been better if plants were covered, not irrigated, to protect them from the cold. If a freeze is forecast, turn off the irrigation system as it can cause more damage than would otherwise have occurred. If irrigation is to be used, it should be done in time for the leaves to dry before the cold settles on the landscape.

Stephen Brown is a horticulture agent with the Lee County Extension Service. Submit questions by calling the horticulture desk at 461-7504 between 9 a.m. and 4:00 p.m. or by e-mailing brownsh@leegov.com. Visit his web page at <http://lee.ifas.ufl.edu/hort/GardenHome.shtml> "Garden Doctor" video clips <http://lee.ifas.ufl.edu/Hort/Video.shtml> and flowering trees information at http://lee.ifas.ufl.edu/Hort/GardenPubsA_Z.shtml