

Heat Illnesses



Keep your workers safe during the hot summer season.

by BARBARA MULHERN

HOW much attention do you pay to employees who are in and out of your greenhouses during the busy summer season? If a worker suddenly showed signs of a heat-related illness, would the person's supervisor and co-workers know what to do?

"Heat stress issues are very important for greenhouse growers," says Dr. Steve Kirkhorn, medical director of the National Farm Medicine Center in Marshfield, Wis. "High humidity due to the moisture released by plants and watering systems, retained in an enclosed building that further heats up in sunny weather, presents an increased risk of heat-related illnesses.

"Entering a hot and humid building such as a greenhouse after working hard in the outdoor heat doesn't allow for a worker to cool off, and the body's core temperature may continue to rise. There may be a false sense of security because the person may think he or she will cool off indoors."

What exactly are heat-related illnesses? While they vary in severity (ranging from "mild" heat illness to life-threatening heat stroke), the underlying cause is that a person's body has built up more heat than it can handle.

"Much of heat illness is also caused by inadequate body reserves of fluids," Kirkhorn says. That's why it's extremely important to supply your workers with sufficient amounts of water – and encourage them to drink small amounts every 20 to 30 minutes when the threat of heat illness is high, not just when they think they're thirsty.

"Greenhouse growers need to be aware that the job won't get done if their employees are working in dangerous conditions and become ill," Kirkhorn says.

"If an employee with heat stroke survives, that person will be off work at least several weeks."

Critical Information

Heat-related illnesses can occur even if the outside temperature isn't extremely high. "It's important to know how to use the National Weather Service's heat index, and to follow guidelines for 'apparent' temperature ratings," Kirkhorn says. The apparent temperature, which combines air temperature and relative humidity, is how hot it actually feels. Here are some guidelines:

- 80°F to 90°F apparent temperature: Caution. Fatigue can result with prolonged exertion and exposure.
- 90°F to 106°F apparent temperature: Extreme caution. Heat cramps and heat exhaustion possible with prolonged exertion and exposure.
- 106°F to 130°F apparent temperature: Danger. Heat cramps and heat exhaustion likely, stroke possible.
- Over 130°F apparent temperature: Danger. Heat stroke very likely.

When the apparent temperature is scheduled to be high, work should be done in the cooler parts of the day, or employers should schedule more breaks and time out of the heat, Kirkhorn says. "In areas with no shade, set up umbrellas or canopies to allow breaks from the sun," he suggests.

If your workers are handling pesticides, it's especially critical that you talk with them about the similarities – and differences – between heat exhaustion and organophosphate poisoning. While the symptoms for the two are similar, their treatments are very different. "The chemical antidote for organophosphates is needed to stop the overstimulation of the nervous system that occurs with organophosphate poisoning. But for

heat exhaustion, it's necessary to lower the body temperature and replace fluids," Kirkhorn says.

One way to tell that the problem may be organophosphate poisoning is if the person is not improving with fluids and cooling, and other symptoms, such as constricted pupils, confusion, wheezing and breathing problems, watering of the eyes and nose, and diarrhea, occur. If either heat exhaustion or organophosphate poisoning is suspected, train your supervisors and workers to immediately call 911.

Kirkhorn has these additional tips for greenhouse growers:

4 Train your workers to recognize the warning signs for heat illnesses. Teach them what to do while they are awaiting professional emergency medical help.

4 Keep sufficient amounts of cool water accessible for workers at all times.

4 Choose the coolest possible protective equipment (PPE). Have employees who handle pesticides use the minimum amount of PPE that's required on the product label.

4 Be sure your workers are acclimated to working in hot, humid conditions. "People who are in shape tolerate the heat better," Kirkhorn says. "Anticipate that someone who is not in shape may have more problems and will need more breaks, time out of the sun and fluid replacement."

4 Encourage your employees to wear light-colored, loose-fitting clothing that reflects the heat and allows the body to release heat.

4 Let your workers know that alcohol/drugs and beverages with caffeine (such as coffee and soda) will make them more susceptible to heat illnesses.

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Heat Illnesses And Treatments

Mild Heat Illness: Results from decreased flow of blood to the brain; may lead to heat exhaustion or heat stroke.

Symptom: Dizziness, fatigue or irritability; reduced ability to concentrate.

Treatment: Move person to shaded area for half an hour or more; loosen or remove clothing; give person water to drink.

Heat Cramps: Painful muscle spasms (stomach, arm or leg) during or after physical exertion in the heat.

Symptom: Heavy sweating; thirst; muscle spasms.

Treatment: Move person to shaded area to rest; loosen clothing; give person cool fluids to drink, preferably containing electrolytes (such as Gatorade).

Heat Exhaustion: Acute reaction; results from decreased flow of blood to the brain and within circulatory system; may lead to heat stroke.

Symptom: Heavy sweating; pale, clammy skin; increased pulse and breathing; weakness; dizziness/fainting; excessive thirst.

Treatment: Immediately move person to cool, shaded area and call 911; loosen or remove person's clothing and splash cold water on body; have person rest lying down; if conscious, give person water to drink (frequently and in small amounts); do not give salt.

Heat Stroke: LIFE-THREATENING MEDICAL EMERGENCY; results from inability of body to cool itself and decreased flow of blood to the brain and other body organs.

Symptom: Excessively high body temperature; confusion; irrational behavior; slowed down or no sweating; rapid breathing and pulse (if conscious); possible convulsions and/or coma.

Treatment: CALL 911 IMMEDIATELY; move person to shaded area and remove outer clothing; cover with thin, wet towels or wrap in wet sheet, then pour on water and fan vigorously; if conscious, give person water to drink (frequently and in small amounts); do not give salt.

Editor's Note: This chart was prepared with the assistance of Dr. Steve Kirkhorn, Medical Director, National Farm Medicine Center, Marshfield, Wisconsin.