**Heat Stress Prevention Program**

*Agricultural Settings*

This sample document is provided to assist employers in developing programs tailored to their own operations. We encourage employers to copy, expand, modify and customize this sample as necessary to accomplish this goal.

This document is provided as a compliance aid but does not constitute a legal interpretation of OSHA Standards, nor does it replace the need to be familiar with, and follow, the actual OSHA Standards (including any North Carolina specific changes). Though this document is intended to be consistent with OSHA Standards, if an area is considered by the reader to be inconsistent, the OSHA standard should be followed.

Remember: A written safety/health program is only effective if it is put into place!

**Purpose**

The purpose of this heat stress prevention program is to protect our employees from the hazards of hot working environments. Work activities that could potentially expose our employees to these hazards include: (list examples of tasks exposing employees to heat stress risk, for example, working in the field, planting, harvesting, pruning etc.).

**Scope**

This plan, which will be used for both training new employees and the annual refresher training of all employees, applies to all employees potentially exposed to hot working environments. These include part-time, full-time, seasonal workers, and migrant farmworkers (H2A and non-H2A).

**Training**

Employees covered by this program will be trained annually prior to beginning work. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (insert job title or name of person to conduct training) will conduct the training in the language that the employees speak and understand.

The training curriculum will include the following topics:

* The details of this plan.
* The risk factors for heat-related illness.
* An explanation of heat-related illnesses. (Information on heat-related illnesses and first aid responses can be found in Appendix B of this document.)
* Expected work practices and other strategies to reduce the occurrence of heat-related illness.

Various training aids can be used to promote the worker’s understanding of heat and sources of heat exposure in the work environment. These include handouts, presentations, and/or safety videos on the topic that are available through state and federal government websites. Links to training resources can be found in Appendix C.

Training will emphasize the team effort to implement and maintain the heat stress program.

A detailed record of training will be created and include the date of training, the name and qualifications of the trainer, and the names of the attendees.

To assist employee understanding, the trainer will engage employees in a question and answer session during training sessions. A verbal test will be used to assess the workers’ understanding of the training content.

**Hydration**

The employer will provide cool water for workers to drink. Proper hydration is essential to prevent heat-related illness. Workers will be encouraged to drink at least one cup (8 ounces) of water every 20 minutes while working in the heat and not just if they are thirsty. This will help keep the worker properly hydrated and help prevent heat illnesses from occurring.

For shifts that last only a couple of hours, cool, potable water is sufficient. For those working in the heat for longer shifts, or working in extreme temperatures, access to electrolyte-containing beverages such as sports drinks may also be provided as workers lose salt and other electrolytes when they sweat. Substantial loss of electrolytes can cause muscle cramps and other dangerous health problems. Water cannot replace electrolytes; other types of beverages are needed. Water or other fluids provided by the employer will not only be cool, but will also be provided in a location that is familiar to the workers, near the work, easy to access, and in sufficient quantity for the duration of the work.

Workers should not rely on feeling thirsty to prompt them to drink. They will be reminded to drink on a regular basis to maintain hydration throughout their shift and beyond.

**Rest/Breaks**

When the risk of heat stress is high, the employer will require workers to take breaks in appropriate locations. Breaks should last long enough for workers to recover from the heat, and the length and frequency of rest breaks should increase as heat stress rises. The employer will be utilizing available information, such as relative heat index and the worker’s physical activity levels, to determine the duration and frequency of breaks based on the work conditions. Figure 2 in Appendix A shows some recommended guidelines to help make this determination.

The location of the breaks also matters. Workers will be given a cool location where they can take their breaks and recover from the heat. When working outdoors, this could be a shady area, an air-conditioned vehicle, or a nearby building or tent with fans and/or misting devices. When working indoors, workers will have access to areas away from the heat sources, like furnaces or ovens, that is either air-conditioned or cooled with fans.

Workers will be strongly encouraged to take their scheduled breaks and not to skip them. Especially when working in conditions where the relative heat index is elevated, skipping breaks can harm the worker. Scheduled breaks give the worker time to escape from the heat, and for their bodies to recover from the stresses of working in the heat. Also, by taking scheduled breaks, worker’s will be able to resume work more quickly and be able to handle working in the heat more efficiently.

**Risk factors**

The environmental and personal risk factors increasing a person’s susceptibility to a heat-related illness will be covered in the training.

The following are environmental risk factors for heat illness:

* Radiant heat from the sun and other sources (Note: exposure to full sunshine can increase heat index values by up to 15° F)
* Conductive heat sources, such as dark-colored work surfaces
* Lack of air movement (such as when working between rows of tall crops)
* Physical effort needed for the work
* Use of nonbreathable protective clothing and other personal protective equipment (such as raingear)
* Heat indices at or above 80℉ (Note: the "heat index" is a single value that takes both temperature and humidity into consideration and indicates how hot the weather will feel)

The heat index is a better measure than air temperature alone for estimating the risk to workers from environmental heat sources. The guides in Appendix A help employers and worksite supervisors prepare and implement appropriate measures for working in hot weather. It explains how to use the heat index to determine when extra precautions are needed at a worksite to protect workers from environmental contributions to heat-related illness. Workers performing strenuous activity, workers using heavy or non-breathable protective clothing, and workers who are new to an outdoor job need additional precautions beyond those warranted by heat index alone.

The following are personal risk factors that can contribute to the onset of heat-related illness:

* Lack of acclimation to warmer temperatures
* Poor general health
* Dehydration
* Alcohol consumption
* Caffeine consumption
* Previous heat-related illness
* Use of prescription medications that affect the body’s water retention or other physiological responses to heat such as beta blockers, diuretics, antihistamines, tranquilizers, and antipsychotics.

Some employees may have a preexisting condition that can worsen their susceptibility to heat-related illness. Those employees will be provided an opportunity to speak privately and confidentially with management about any concerns they have related to their susceptibility to heat-related illnesses. Our company understands that the preexisting health conditions will not result in discrimination of any kind.

**Expected Work Practices**

To demonstrate that we ­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_(insert company name) are/is serious about preventing heat-related illnesses, the following procedures are in effect whenever the heat indices reach or exceed 80℉, and all management and employees are expected to follow them.

\_\_\_\_\_\_\_\_\_\_\_\_\_ (insert name or job title) will be responsible for utilizing the OSHA-NIOSH Heat Safety Tool daily to plan work activities based on how hot it will feel throughout the day. Special precautions will be taken when heat indices are at or above 103℉. The Heat Safety Tool can be downloaded here: <https://www.cdc.gov/niosh/topics/heatstress/heatapp.html>

Employees will be verbally briefed on weather conditions each day prior to beginning work. \_\_\_\_\_\_\_\_\_\_\_ (insert name or job title) will be responsible for briefing workers each day about weather conditions. Special efforts to alert workers about high-risk conditions will be made when heat indices are at or above 103℉.

Employees are allowed and encouraged to utilize shaded areas in the fields during break times. Each crew supervisor should identify available shady areas. Typical shady areas are located \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Employees will have unlimited access to cool drinking water with single use cups available to them at all times in all work areas. . Employees are encouraged to drink water regularly throughout the day. The water will be located \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (describe the location). \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(insert designated employee name or title) will check coolers periodically throughout the workday for usage and water or electrolyte-containing beverage availability.

Employees will utilize the buddy system and be attentive to their co-worker’s behavior. Employees will be asked to pick a buddy during training and use throughout the work year with emphasis on everyone generally looking out for everyone. If a worker has to miss work, temporary accommodations need to be made to ensure that their buddy will have a co-worker(s) helping look out for them.

The employer will create a field manual or notebook to be available in each work vehicle. Each field manual will include the field common name, the emergency response address, phone number of the supervisor and who to call in the event of an emergency. A field manual will be available in each vehicle used to transport workers. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (insert name or job title of person responsible for placing the field manual) will ensure that the manuals are updated yearly, or more frequently if information changes and are located in the vehicles.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(insert name or job title of crew leader or manager) will monitor the fields being worked and be responsible for notifying all field staff of changing weather conditions such as thunderstorms, or any other condition that may affect worker safety, such as the availability and location of field sanitation equipment (portable toilets) and drinking water. (Add more to the list that is applicable to your environment).

Basic First Aid training will be provided. Employees can locate the applicable first aid supplies \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (describe where). Additional information on symptoms of heat-related illness and appropriate actions to take can be found in Appendix B.

When the heat indices reach or exceed 91℉, work schedules will also be adjusted, whenever possible, to provide additional measures to protect the safety and health of employees. Examples of work schedule adjustments include working earlier or later in the day to avoid the hottest part of the day.

Rotation of job locations and reduced hours for newly arrived workers will be utilized whenever possible to permit acclimatization to the hot working conditions of summer weather in NC.

Heat Stress posters, in English and Spanish, are displayed \_\_\_\_\_\_\_\_\_\_\_ (describe where). Additional posters and other publications can be downloaded here: <https://www.osha.gov/pls/publications/publication.athruz?pType=Industry&pID=571>

Employees will be encouraged to offer suggestions for improvements at any time and will give those suggestions to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (insert person’s name or job title).

Appendix A: Heat Index

OSHA has created a website and publications titled Using the Heat Index: A Guide for Employers. The guide provides steps employers can take based on the heat index, to reduce employee risk to heat-related illness. A heat index chart and overview of risk levels and protective measures are shown below. Details on OSHA’s guidance for each risk level and links to additional resources can be found on the following webpage: <https://www.osha.gov/heat/heat-index>.

**NOAA’s National Weather Service Heat Index**



**OSHA’s Guide to Using the Heat Index to Protect Workers**

|  |  |  |
| --- | --- | --- |
| Heat Index | Risk Level | Protective Measures |
| <91°F | [**Lower (Caution)**](https://www.osha.gov/heat/heat-index/protective-low) | * Provide drinking water.
* Ensure that adequate medical services are available
* Plan ahead for times when heat index is higher, including worker heat safety training.
* Encourage workers to wear sunscreen.
* Acclimatize workers.

**If workers must wear heavy protective clothing, perform strenuous activity or work in the direct sun, additional precautions are recommended to protect workers from heat-related illness.\*** |
| 91°F to 103°F | [**Moderate**](https://www.osha.gov/heat/heat-index/protective-mod) | In addition to the steps listed above:* Remind workers to drink water often (about 4 cups/hour).\*\*
* Review heat-related illness topics with workers: how to recognize heat-related illness, how to prevent it, and what to do if someone gets sick.
* Schedule frequent breaks in a cool, shaded area.
* Acclimatize workers.
* Set up buddy system/instruct supervisors to watch workers for signs of heat-related illness.

**If workers must wear heavy protective clothing, perform strenuous activity or work in the direct sun, additional precautions are recommended to protect workers from heat-related illness.\**** **Schedule activities at a time when the heat index is lower.**
* **Develop work/rest schedules.**
* **Monitor workers closely.**
 |
| 103°F to 115°F | [**High**](https://www.osha.gov/heat/heat-index/protective-high) | In addition to the steps listed above:* Alert workers of high risk conditions.
* Actively encourage workers to drink plenty of water (about 4 cups/hour).\*\*
* Limit physical exertion (e.g., use mechanical lifts).
* Have a knowledgeable person at the worksite who is well-informed about heat-related illness and able to determine appropriate work/rest schedules.
* Establish and enforce work/rest schedules.
* Adjust work activities (e.g., reschedule work, pace/rotate jobs)
* Use cooling techniques.
* Watch/communicate with workers at all times.

**When possible, reschedule activities to a time when heat index is lower.** |
| >115°F | [**Very High to Extreme**](https://www.osha.gov/heat/heat-index/protective-very-high) | **Reschedule non-essential activity for days with a reduced heat index or to a time when the heat index is lower.****Move essential work tasks to the coolest part of the work shift; consider earlier start times, split shifts, or evening and night shifts.****Strenuous work tasks and those requiring the use of heavy or non-breathable clothing or impermeable chemical protective clothing should not be conducted when the heat index is at or above 115°F.**If essential work must be done, in addition to the steps listed above:* Alert workers of extreme heat hazards.
* Establish water drinking schedule (about 4 cups/hour).\*\*
* Develop and enforce protective work/rest schedules.
* Conduct physiological monitoring (e.g., pulse, temperature, etc.).
* Stop work if essential control methods are inadequate or unavailable.
 |
| \*The heat index is a simple tool and a useful guide for employers making decisions about protecting workers in hot weather. It does not account for certain conditions that contribute additional risk, such as physical exertion. Consider taking the steps at the next highest risk level to protect workers from the added risks posed by:* Working in the direct sun (can add up to 15°F to the heat index value).
* Wearing heavy clothing or protective gear.

\*\*Under most circumstances, fluid intake should not exceed 6 cups per hour or 12 quarts per day. This makes it particularly important to reduce work rates, reschedule work, or enforce work/rest schedules. |

Appendix B: Heat-Related Illnesses and Appropriate Responses

During employee training, explain how to recognize the symptoms of heat-related illnesses and the expected course of action.

**Heat rash** is the most common health problem in hot work environments. It is caused by sweating and looks like a red cluster of pimples or small blisters. Heat rash usually appears on parts of the body that overlap or rub other parts of the body, such as in the groin area, under the arms or breasts, and in knee or elbow creases. If an employee has symptoms of heat rash, provide a cooler, less humid work environment, if possible. Advise the employee to keep the area dry and not to use ointments and creams that make the skin warm or moist, which can make the rash worse.

**Heat Cramps** are a common symptom of an employee who is starting to feel the ill effects of heat exposure. Symptoms are usually muscle spasms or pain, and typically occur in either the limbs (arms and legs) or trunk of the body. They occur because the body is starting to dehydrate and the muscles are not receiving the necessary nutrients in order to work properly. Employees who experience heat cramps should go to a shaded or cooler area and drink either water or electrolyte replacing sports drinks. Employees should wait to return to work until all the symptoms of heat cramps have been relieved.

**Heat exhaustion** can best be prevented by being aware of one’s physical limits in hazardous environment on hot, humid days. The most important factor is to drink enough clear fluids (especially water, not alcohol or caffeine) to replace those lost to perspiration.

Signs and symptoms of heat exhaustion typically include:

* Profuse sweating
* Weakness and fatigue
* Weak, rapid pulse
* Nausea and vomiting
* Muscle cramps (associated with dehydration)
* Headache
* Light-headedness or fainting; fainting or loss of consciousness is potentially serious and should be treated as a medical emergency.

When you recognize heat exhaustion symptoms in an employee, you must intervene; stop the activity, and move the employee to a cooler environment. Cooling off and rehydrating with water (or electrolyte replacing sports drinks) Typically, at our company, we use \_\_\_\_\_\_\_\_\_\_\_. Fluid replacement and cooling are the main treatments for heat exhaustion. If the employee resumes work before their core temperature returns to normal levels, symptoms may quickly return.

**Heat stroke** requires an immediate emergency medical response. The person may stop sweating, become confused or lethargic, and may even have a seizure. The internal body temperature may exceed 106 degrees F.

Signs and symptoms of heat stroke typically include:

* Absence of sweating
* Dry skin Strong, rapid pulse
* Agitation or strange behavior
* Dizziness, disorientation, or lethargy
* Seizures or signs that mimic those of a heart attack
* Loss of consciousness

Call 911 emergency responders if heat stroke is suspected. Each field has an emergency responder address that can be found \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (insert where, perhaps the field notebook). While waiting for emergency responders to arrive, cool the employee; move the employee to an air-conditioned environment or a cool, shady area; and help the employee remove any unnecessary clothing. Apply cool/cold water to the person in any way possible such as directly or through wetting down a piece of clothing/rag/handkerchief and apply to back of neck, wrists, armpits, and groin area. Do not leave the employee unattended. Heat stroke requires immediate medical attention to prevent permanent damage to the brain and other vital organs that can result in death.

Appendix C: Employee Training Resources

Additional training resources may be found at the links below (NOTE: Edit this section to include specific training tools used on your farm).

* NCDOL - Agricultural Safety and Health: <https://www.labor.nc.gov/safety-and-health/agricultural-safety-and-health>
* NCDOL - Heat Stress: <https://www.labor.nc.gov/safety-and-health/occupational-safety-and-health/occupational-safety-and-health-topic-pages/heat-stress>
* OSHA - Using the Heat Index: A Guide for Employers: <https://www.osha.gov/heat/heat-index>
* OSHA - Heat: <https://www.osha.gov/SLTC/heatstress/heat_illnesses.html>
* Daily Weather conditions may be monitored thru the OSHA – NIOSH Heat Safety Tool App <https://www.cdc.gov/niosh/topics/heatstress/heatapp.html>