

# Heat Stress

*Farmworker Health and Safety*



## TRAINER GUIDE AND WORK BOOK

**Association of Farmworker Opportunity Programs**

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# *Health & Safety Director's Message*

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Welcome to AFOP's Project SOL Heat Stress Prevention Program! Through generous funding from the Susan B. Harwood Training Grant Program offered by the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA), we are able to bring much-needed training to agricultural workers and their employers that will most likely prevent illness from heat exhaustion or heat stroke, and possibly even save lives.

Farmworkers feed the world while working in one of the most dangerous occupations and face unique challenges on a daily basis – poverty, lack of access to education, health care and other services, exposure to dangerous pesticides that can cause serious illness, and constant uncertainty about their futures are part of their struggle. Illness brought on by extreme heat is yet another variable that threatens their efforts to support themselves and their families. Besides being a serious health risk, heat-related illness means time away from work, lost wages, medical bills, and the resulting stress on their families.

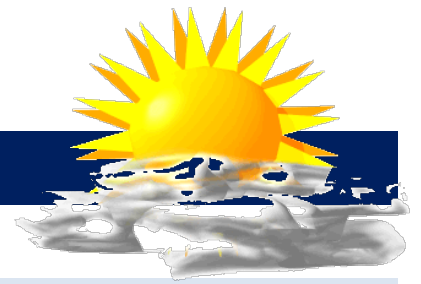
The good news in this is that heat-related illness and death are preventable and prevention does not cost a great deal of money. AFOP's Project SOL seeks to bring information and training to agricultural workers and their employers on the dangers of heat-related illness and how to prevent tragic incidents by providing life-saving training and improving the quality of life for farmworkers and their families. We hope you will use the tools provided here and the resources available from our office to provide the best possible training that farmworkers deserve.



Levy Schroeder  
Director, AFOP Health and Safety Programs

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# Introduction

This workbook was designed with two purposes in mind:

- 1) to serve as a written companion to the Association of Farmworker Opportunity Program's (AFOP's) train-the-trainer course on heat stress prevention and;
- 2) to be a reference tool for you and your organization when providing heat stress prevention trainings in the future.

With this idea in mind, the book before you has been designed as an interactive tool. It consists of alternating sections of background information and activities designed to help you engage with the material in a meaningful way. It is our hope that this design will provide a tailored approach to note-taking and information gathering, ultimately providing a useful body of information for you, the trainer. We look forward to working with you during this training. We will strive to ensure that you leave feeling equipped with the necessary knowledge and skills to carry out heat stress prevention trainings in the field.



## AFOP -



AFOP is a membership-based organization located in Washington, DC. Since 1971, AFOP has been working with its members to improve the quality of life for migrant and seasonal farmworkers in the United States. It is the Association's belief that training and education are key components to achieving change for the workers who plant, tend and harvest the crops that Americans consume at their tables. AFOP member agencies receive grants from the United States Department of Labor, and other governmental and non-governmental institutions, to administer programs aimed at upgrading farmworkers' skills and providing essential education, including English Proficiency for

those whose native tongue is another language.

AFOP's Health and Safety Program seeks to mitigate the health hazards facing migrant and seasonal farmworkers and their families. True to the organization's mission of providing training and education, the Health and Safety Alliance has a strong history of developing and implementing train-the-trainer courses focused on the promotion of health and safety for members of the farmworker community. In designing these courses, AFOP has partnered with government institutions such as the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA).



# Training Objectives:

During this training, we hope that you will learn the basics of heat stress prevention. In addition, we want you to leave feeling confident and ready to carry out trainings with the farmworkers in your communities. To help guide us in achieving these goals, we have created a number of general objectives for the training, along with more specific objectives that will allow us to determine if we have met our overall goals. The objectives for this training are listed below, allowing you to check them off once you have determined that you, as an individual, have met the goal.

## **Objective A:**

**Trainers understand their role as trainer and know how to do outreach in the community.**

- Each trainer has completed an outreach plan by the end of the two-day training session.

## **Objective B:**

**Trainers understand what heat stress is and how to prevent and respond to it in the field.**

- Trainers can correctly identify 5 symptoms of heat-related illnesses.
- Trainers can correctly identify at least 5 steps to be taken in caring for a victim of heat-related illnesses.
- Trainers can correctly identify 3 personal and 3 environmental risk factors for heat-related illnesses.
- Trainers can identify 3 strategies for preventing heat-related illnesses in the field.

## **Objective C:**

**Trainers are able to conduct heat stress trainings.**

- Trainers have practiced the heat stress training with the flipchart at least twice by the end of the two-day session.
- Trainers state they feel prepared to give a training to farmworkers on heat-related illnesses.

# Farmworkers – Who are they?



As a trainer, you will be working with migrant and seasonal farmworkers, training them on the prevention of heat stress and heat-related illnesses (HRI). One of the most important things to consider, once you begin to design your trainings, is the population with which you will be working – who they are, where they are from and what motivates them.

It has been estimated that over 2.5 million migrant and seasonal farmworkers work in the United States. Most of the demographic information that is known about this population comes from the National Agricultural Workers Survey (NAWS), an ongoing assessment conducted by the US Department of Labor. The most recent phase of the survey, conducted between 2000 and 2002, compiles information from interviews with 6,472 farmworkers. The information gleaned from these interviews is used for a wide variety of purposes. For our purposes today, it will give us a glimpse into the lives and characteristics of the people who put the food on our tables, the people with whom you will be working.

The space below has been provided for you to take notes, as you see fit, on the characteristics of the farmworker population and their relevance to your future work on heat stress prevention.

**\*\*Remember that a good training starts with knowing your population – who they are, where they come from and what is important to them.\*\***

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# Why Heat Stress?



The following case study was reported in the September 2008 edition of the Journal of the American Medical Association:

“In mid-July 2005, a male Hispanic worker with an H-2A work visa (i.e., a temporary, nonimmigrant foreign worker hired under contract to perform farm work) aged 56 years was hand harvesting ripe tobacco leaves on a North Carolina farm. He had arrived from Mexico 4 days earlier and was on his third day on the job. The man began work at approximately 6:00 a.m. and took a short mid-morning break and a 90-minute lunch break. At approximately 2:45 p.m., the employer’s son observed the man working slowly and reportedly instructed him to rest, but

the man continued working. Shortly thereafter, the man’s coworkers noticed that he appeared confused. Although the man was combative, his coworkers carried him to the shade and tried unsuccessfully to get him to drink water. At approximately 3:50 p.m., coworkers notified the employer of the man’s condition. At 4:25 p.m., the man was taken by ambulance to an emergency department, where his core body temperature was recorded at 108°F (42°C) and, despite treatment, he died. The cause of death was heat stroke. On the day of the incident, the local high temperature was approximately 93°F (34°C) with 44% relative humidity and clear skies. The heat index was in the range of 86°–101°F (30°–38°C) at mid-morning and 97°–112°F (36°–44°C) at mid-afternoon.

“Similar conditions had occurred during the preceding 2 days. The man had been given safety and health training on pesticides but nothing that addressed the hazards and prevention of heat related stress. He reportedly only spoke Spanish. Fluids, such as water and soda, were always available to the workers in the field; however, whether the man drank any of these fluids is unknown.”

*Heat-Related Deaths among Crop Workers – United States, 1992 – 2006.” (Reprinted) JAMA, September 3, 2008—Vol 300, No. 9.*

***The following space has been provided to record your thoughts and/or observations about the previous case study and heat stress in general.***

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# Heat Stress 101 –



Human beings, as a rule, must maintain a constant internal body temperature of roughly 98.6°F or 37°C. The reasons for this are straightforward, having to do with the ideal temperature at which many of our internal chemical reactions and processes function to their fullest potential. While 98.6°F is ideal, the body's internal temperatures are influenced by a host of internal and external factors and must have a system in place to regulate body temperature. At any given moment, the body is engaged in a balancing act of heat generation and heat release.

The body **acquires heat from a number of different sources** including heat that it generates, and heat that it receives from the surrounding environment. Generated body heat comes primarily from the by-products of chemical reactions and from the heat generated by the work of the body's muscles, including those muscles that cause shivering when a person is cold. Environmental heat comes from the surrounding air, from direct light and from equipment that gives off large amounts of heat. While the human body needs a significant amount of heat to maintain its temperature of 98.6°F, on occasion, the body acquires too much heat. In these instances, the body must release heat, preventing internal temperatures from rising too high.

To release heat into the environment, the body must first transfer heat away from the internal core of the body, toward the body's surfaces near the skin. This is done by dilating, or widening, the blood vessels on the outermost parts of the body, near the skin. The heart then works to pump blood to these regions. The blood carries heat, which can then be released. There are four primary ways in which the human body releases heat: evaporation, conduction, convection, and radiation.

The first of these mechanisms, **evaporation**, happens when a person sweats. Sweat, a liquid, is released through glands onto the skin of a person's body. There, the liquid sweat must use energy to convert itself into a gas and evaporate. This energy is in the form of heat that the body is trying to release. So, the evaporating sweat literally takes heat with it as it goes.

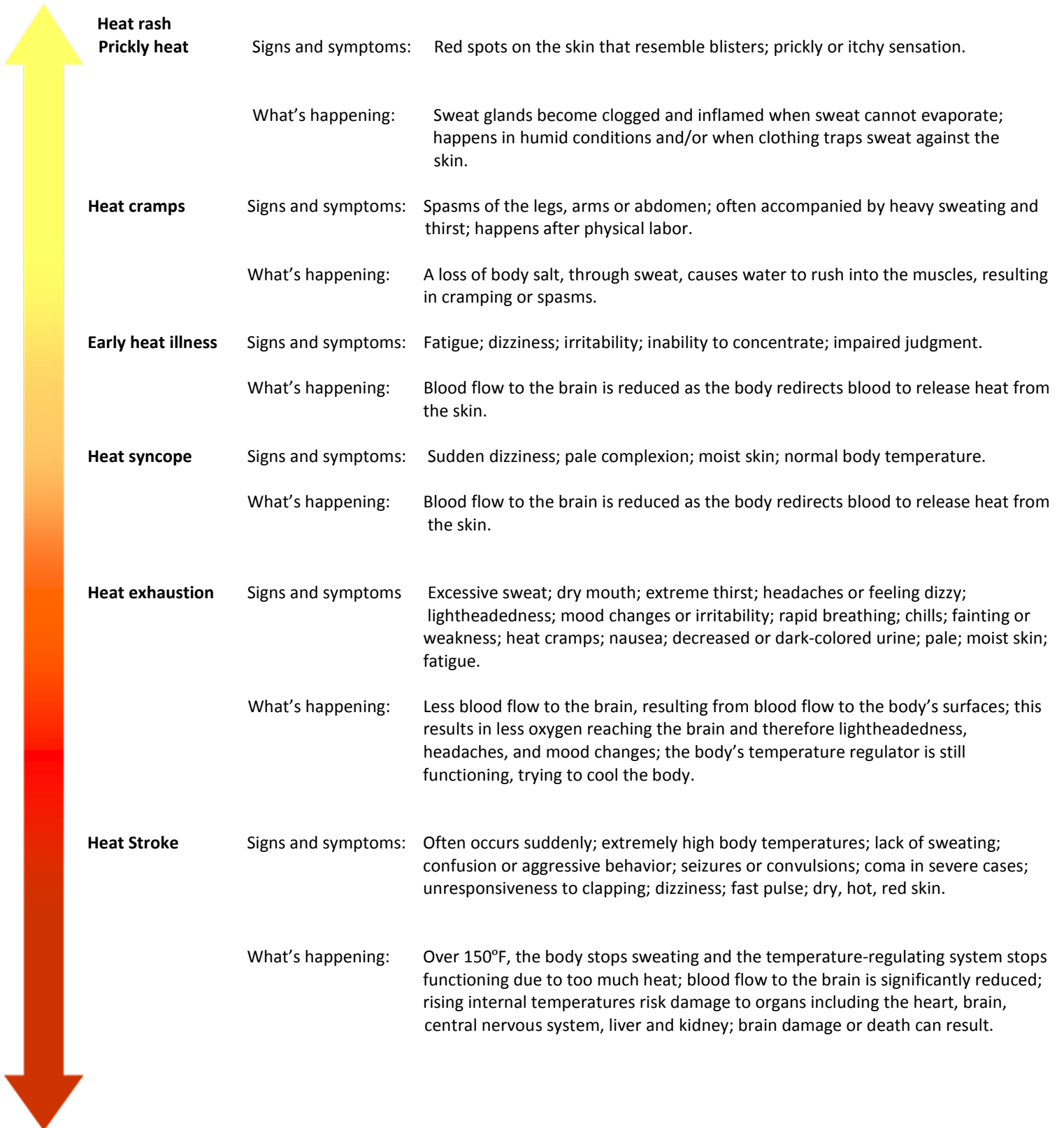
The second mechanism, **conduction**, refers to what happens when the body comes into contact with something that is cooler than itself. In this instance, heat is actually transferred from the skin of the person to the cooler object, releasing heat and making the person feel cooler.

**Convection** and **radiation** are very similar processes. In convection, air passing over the surface of the skin "lifts" heat off of the surface. This is why a person may feel cooler on a windy day. Radiation also releases heat directly into the air, but does so even in the absence of wind. Heat simply transfers itself from the body into the surrounding environment. All of these processes are subconscious, controlled by the human brain.

However, sometimes the body becomes so hot that its heat-regulating mechanisms simply can't eliminate enough heat. When this happens, the internal body temperature begins to rise above 98.6°F, affecting our physiological processes and resulting in strain on the body that we refer to as **heat stress**. This heat stress on the body results in symptoms that we categorize into different heat related illnesses (HRIs), based on their severity.

# Illness

The following diagram presents various HRIs and the symptoms that correspond with each.











# First-Aid Response for Heat Exhaustion and Heat Stroke:

The following responses are recommended for the treatment of the different heat-related illnesses. Look them over and compare them with your responses in the previous activity.

- ✓ If you suspect that the person is suffering from heat exhaustion you should do the following:
  - Stop working.
  - Immediately move the person into the shade and have them rest lying down.
  - Give the person tepid water, in small amounts and have them drink as much as possible.
  - Splash the person's body with water.
  - Loosen all clothing, especially around the neck, chest and waist.
  - Use a hat, shirt or cardboard to fan the person.
  - Stay with the person.
  - If the person does not improve, or if the person has lost consciousness, call for medical help immediately.
  
- ✓ When treating a person for heat exhaustion, you should NOT:
  - Give the person salt.
  - Let the person go back to work.
  
- ✓ If you suspect that the person is suffering from the more serious heat stroke, you should do the following:
  - Get the person into the shade.
  - Start cooling down the body immediately.
  - Remove or loosen clothing.
  - Take off the person's hat, shoes and socks.
  - If the person is conscious and not vomiting, help them to drink as much as possible, in small sips.
  - Pour cool water on their chest and apply wet towels or wet sheets to their body.
  - If there is ice on site, place ice packs in their armpits and groin area.
  - To avoid cooling the person too drastically, massage the person's limbs; if they begin to shiver, remove the ice or cold blanket.
  - Elevate the person's legs.
  - Fan them with a hat, shirt or piece of cardboard.
  - Stay with the person.
  - Get the person medical care as soon as possible.
  
- ✓ As with heat exhaustion, when treating a person for heat stroke you should NOT:
  - Give the person salt.
  - Let the person go back to work.

Remember that it is always important to seek medical attention. However, in the case of heat stroke, the most important thing is to start cooling the person down IMMEDIATELY. If you don't, the person could die. If it is faster, drive the person to a clinic or hospital yourself instead of waiting for an ambulance. But DO NOT stop fanning or pouring water on the victim until a medical professional is attending them. If you need help transporting the person and keeping them cool, ask other workers to help you.





# Personal Risk Factors:

Generally, personal risk factors for heat-related illnesses are associated with one of two things:

1. The person's physiological response to heat;
2. OR the person's behavior towards heat.

## Examples of personal risk factors include:

- **Weight** – People who weigh more have more mass, which generates heat in their core and causes them to retain more heat. In addition, overweight people tend to have less physically fit muscles and expend more energy during physical activity, creating more heat.
- **Pregnancy** – Pregnant women must be careful because an increase in their core temperatures may affect the fetus, which can lead to negative health effects for both the fetus and mother
- **Age** – Very young or very old people are more susceptible to heat-related illnesses. Older people sweat at a slower rate than younger people, meaning that their sweat cooling mechanism is less efficient. They also have a lowered capacity for pumping blood than a younger person. Infants and young children's body mass to surface area ratios are smaller than adults, so they are at higher risk for heat-related illnesses. Both young and old people also have problems with their central nervous systems (it is not fully developed in children, and it is often deteriorated in older individuals), the system that helps to regulate your body's temperature.
- **Existing medical conditions** – Chronic health conditions alter the body's physiological response to heat stress in a variety of ways: heart conditions impair the heart's ability to properly circulate blood and cool the body; high blood pressure and diabetes impair the blood vessel's ability to dilate properly, also restricting blood flow; skin conditions hinder the process of heat release; and many other conditions result in a lowered ability to properly cool oneself.
- **Physical fitness** – Muscles that are accustomed to physical activity work more efficiently and generate less heat. People with strong cardiovascular systems also adjust better to changes in temperature and physical activity
- **Acclimatization** – When a person's body is not used to working in extreme heat, its heat regulating system does not function as well as someone's who is used to the heat.
- **Drinks** – Alcohol and energy drinks may dehydrate the body and increase the chances for heat stress.
- **Attitudes** – Cultural or personal beliefs about a person's susceptibility to heat, about their need for income, and about illness and environment, may all affect the way in which a person prepares for working in the heat. Certain cultural or personal beliefs may lead a person to take risky behaviors, increasing their risk for heat-related illnesses.

# Environmental Risk Factors:

Environmental risk factors for HRI refer to environmental conditions that impair the body's ability to regulate its internal temperature in an effective manner. To understand environmental risk factors, it helps to remember the four ways in which the body eliminates heat: evaporation, conduction, convection, and radiation.

- **Temperature** - Higher ambient (environmental) temperatures increase the body's temperature and limit its ability to release heat through radiation (the body can only transfer heat to the air if the air is cooler than the body's temperature).
- **Presence of heavy machinery**- Heavy farm machinery can produce high amounts of heat; this heat increases a person's risk of heat stress in the same way that high ambient temperatures do.
- **Time of day** - Afternoon hours are often hotter than earlier, morning hours.
- **Shade or cloud cover**- Temperatures can vary drastically between sun and shade. In the absence of any shade or cloud cover, an individual can be exposed to extremely high temperatures.
- **Wind** – Wind helps sweat to evaporate and the body to cool. It also picks up heat through convection from the skin's surface.
- **Humidity** – If the air is humid, it becomes difficult for sweat to evaporate and the body loses one of its most effective cooling mechanisms.
- **Workload** - Physically demanding work makes the body generate more heat, because the muscles are used more.
- **Heavy clothing** – Certain clothing items trap heat, such as those used as Personal Protective Equipment, hindering the ability of sweat to evaporate and insulating the skin, preventing heat release through convection, or radiation.
- **Pesticide exposure** – Certain pesticides can cause a person to sweat excessively, losing water and increasing his or her risk of a heat-related illness.

## Medications:



There are certain classes of medications that increase a person's risk of heat-related illness. Some of the most common medications include: **vasoconstrictors**, medications that help narrow your blood vessels; **beta blockers**, which block adrenaline and are used for certain cardiac conditions; **diuretics**, which help your body eliminate sodium and water; and **antidepressants** or **antipsychotics**, used to alleviate psychiatric symptoms.



## What to do about these risk factors:

It is extremely important that individuals are aware that these risk factors can dispose a person to developing heat-related illnesses. If a person is affected by one or more of the personal risk factors for HRI, he or she should take extra precautions when working in the fields. This includes taking more frequent breaks and drinking more water. In addition, the person should be sure to alert his or her supervisor to the fact that he or she is susceptible to heat-related illnesses, and explain why. Finally, individuals should always work in pairs, talking to each other frequently throughout the day and reminding each other to take shade and water breaks.

It is equally important that farmworkers be aware of the environmental conditions that predispose someone to developing an HRI. The importance of this must be stressed, particularly given the fact that many farmworkers feel powerless to create or advocate for their own schedules. If possible, time should be spent working with farmworkers on ways to advocate for themselves and their health with their employers, teaching them ways in which to suggest more comfortable hours and conditions in which to work.

## Prevention:

As you are working with farmworkers, it is important to stress that the prevention of heat-related illnesses is easier than the treatment them, and that it is relatively simple. Be sure to discuss the following measures, which can be employed to ensure that individuals minimize the risk of developing a heat-related illness:

- Always wear loose-fitting, light-colored clothes that are made of cotton; this type of clothing breathes better and absorbs less heat from the sun
- DO NOT wear dark-colored clothing or clothing made of synthetic fabrics such as polyester, nylon and rayon; this type of clothing will absorb and hold heat
- Always wear a hat with a brim or cap
- Use a bandana under your hat; you can also wet a bandana and place it on your neck to keep you cool
- Drink plenty of water before going to work
- While you are working, drink one quart of water in small quantities throughout each hour (this equals one cup of water every fifteen minutes)
- Drink BEFORE you get thirsty
- DO NOT drink alcohol, energy drinks or soda, or use drugs; all of these substances make it easier for your body to lose water and increase your chance of heat exhaustion or heat stroke

# OSHA and Heat Stress Regulations

The Occupational Health and Safety Administration (OSHA) is an agency within the United States Department of Labor, created in 1970 under the Occupational Safety and Health (OSH) Act. The agency is charged with the prevention of work-related sickness, injury, or death. This is achieved through the enforcement of a number of regulations regarding workplace conditions and employer responsibilities.

Under the OSH Act, states are allowed to create their own occupational safety and health plans, as long as they cover public employees and provide, at a minimum, the same standards as federal OSHA regulations. Following this lead, twenty-four states, Puerto Rico and the Virgin Islands have created their own plans, the vast majority of which adopt standards identical to the federal government. However, in a few instances, states have gone above and beyond, drafting their own regulations on specific issues.

Unfortunately, federal OSHA regulations do not include standards specific to the prevention of heat stress or heat-related illnesses. What the federal standards do include are the *General Duty Clause* of the OSH Act (Section 5(a) (1)) and a number of standards relating specifically to agricultural work. Under the *General Duty Clause*, employers:

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

In addition, agriculture employers with more than 11 employees must comply with the standards set forth 1928.110, including:

**1928.110(c)(1)(i)**

Potable water shall be provided and placed in locations readily accessible to all employees.

**1928.110(c)(4)**

The employer also shall inform each employee of the importance of each of the following good hygiene practices to minimize exposure to the hazards in the field of heat, communicable diseases, retention of urine and agricultural residues.

**1928.110(c)(4)(ii)**

Drink water frequently and especially on hot days

But among those states that have created additional workplace regulations, a few have created regulations that specifically address the prevention of heat-related illnesses, including California and Washington. The table below shows the states participating in AFOP's heat stress prevention program and the OSHA-specific regulations that may apply in each state.

## OSHA and Heat Stress Regulations

### State OSHA Plans and Regulations Concerning Heat Stress Prevention

State	State Plan Exists	State Heat Stress Regulations Exist	What regulations apply?	Requirements
California	X	X	California General Industry Safety Orders 7.2.10 §3395. Heat Illness Prevention	Provision of water; access to shade; rest; training (employee and employer); emergency response plan
Delaware			OSH Act General Duty Clause; Standards - 29 CFR Agricultural Safety Standards	Safe working environment; sufficient potable drinking water
Florida			OSH Act General Duty Clause; Standards - 29 CFR Agricultural Safety Standards	Safe working environment; sufficient and accessible potable drinking water
Illinois	X*		OSH Act General Duty Clause; Standards - 29 CFR Agricultural Safety Standards	Safe working environment; sufficient and accessible potable drinking water
Maryland	X		OSH Act General Duty Clause; Standards - 29 CFR Agricultural Safety Standards	Safe working environment; sufficient and accessible potable drinking water
New Mexico	X		OSH Act General Duty Clause; Standards - 29 CFR Agricultural Safety Standards; NM Admin. Code 11.5.4	Safe working environment; sufficient and accessible potable drinking water
New York	X*		OSH Act General Duty Clause; Standards - 29 CFR Agricultural Safety Standards	Safe working environment; sufficient and accessible potable drinking water
Ohio			OSH Act General Duty Clause; Standards - 29 CFR Agricultural Safety Standards	Safe working environment; sufficient and accessible potable drinking water
Puerto Rico	X		OSH Act General Duty Clause; Standards - 29 CFR Agricultural Safety Standards	Safe working environment; sufficient and accessible potable drinking water
Texas			OSH Act General Duty Clause; Standards - 29 CFR Agricultural Safety Standards	Safe working environment; sufficient and accessible potable drinking water
Washington	X	X	Washington Administrative Code 296-62-095 Outdoor heat exposure	Heat stress prevention program; drinking water; appropriate response; training (employees and supervisors in language understood to them)

\* These state plans apply only to public-sector employees; the federal government has jurisdiction over private sector employees in these states and OSH Act standards apply here

# Section II – Training Farmworkers

Ultimately, the purpose of this training is to prepare you, the trainer, to do the best that you can and enjoy what you are doing. The goal is that you leave the training feeling prepared to speak with farmworkers about the basics of heat stress prevention. Learning about heat stress is a vital component in preparing you to be an effective trainer, but it is not the only one. You must also be prepared to convey your newfound knowledge to the farmworker population in a way that relays information while actively engaging them, ensuring that they *learn* and *use* this important information.



Take a moment to think about training sessions, workshops and classes that you have attended in the past. As you think, note the aspects of the training that you found effective and those that you did not find particularly relevant or helpful. In the space provided, make a list of characteristics that you would associate with a successful trainer or training and characteristics of an unsuccessful trainer or training.

## Characteristics of a Successful Trainer/Training

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## Characteristics of an Unsuccessful Trainer/Training

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# Tips for a Successful Training Session:



Training, teaching and public speaking are important skills that are sometimes difficult to do. One can always overcome any challenges with practice, making these activities enjoyable and professionally fulfilling. There are a number of things to keep in mind as you begin planning your training session.

First, **be prepared**. The most important thing that you can do to make your trainings a success is to know your material and your audience. You will feel more confident and project a better image if you know what you are doing, what you are talking about and how it is relevant to the people that you are training.

- Practice using your flipchart as many times as you can, in Spanish and in English.
- Do additional research on heat stress, on farming practices in your area, and on local and state laws and regulations.
- Create a training box that contains all necessary props and materials for your session.
- Practice responses to difficult questions.
- Know your limits and be prepared to say “I don’t know, but I will find out for you”.

Second, **actively engage your audience** in the material. Training is more fun for everyone when you get your audience involved. In addition, many people are not comfortable learning in a strictly lecture environment, so using engaging activities can help to address a wide variety of learning styles (for more info on learning styles, see the section that directly follows this one).

- Use props and visuals to reinforce important points.
- Ask questions and have the participants answer.
- Encourage participation whenever possible.

Third, **create a high-quality learning environment**. People will learn best in an environment that is conducive to learning. While it may be difficult to have complete control over your sessions, be conscious of the fact that a good learning environment will result in more people retaining, and eventually using, the information.

- Limit the number of people in sessions to less than 30.
- Make sure the participants are comfortable by holding trainings in a quiet, cool, shaded place.
- Use “crowd control” to keep the conversation fluid and meaningful.

Fourth, **be an effective public speaker**. People have to understand you and relate to you in order to learn from you. Effective public speaking takes effort, practice, and conscious concentration.

- Speak loudly and clearly.
- Move around and into your audience.
- Project a positive, friendly attitude. Smile and make small talk with the workers before training begins.
- Use personal experiences to supplement your material, helping your participants relate to you as a person.
- Be prepared for questions.





# Learning Styles:

As you begin to think about your training sessions, it is important to recognize that not everyone learns in the same way. A number of studies have been done over the years that suggest a myriad of learning cycles and styles. For the purposes of our trainings, it is important to recognize this fact and to work to incorporate a variety of training activities that may address various ways of learning.

It is also important to note that, while individuals may identify more heavily with one learning style, learning is a dynamic process. So, while incorporating a number of training techniques and activities is an effective way to reach individuals with different learning styles, it is also a good way to make your training a more fluid, dynamic, experiential learning session. Listed here are a number of ideas for training activities and who or what they may be useful for.

## A NOTE ON LEARNING STYLES...

Way of learning	Sample tools or activities
Learning through experience	case studies; experiments; role plays; simulations; worksheets; timelines; debates; participation in a process
Learning through emotions	icebreakers; group discussions; individual reflection; games; storytelling; discussing videos or images;
Learning through analysis	lectures; surveys; instructional videos; hand-outs; overheads; flipcharts; demonstrations
Learning through exploration	dramas; skits; puppet plays; action plans; goal setting; games

The table above shows four ways of learning and suggests types of activities that appeal most to individuals who learn in those ways. Looking at the sample tools, come up with an example of one activity for each learning style that you could use in a heat stress prevention training session in the fields.



## Learning Styles

### Learning by exploring -

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### Ideas for Interactive Trainings:

Incorporating a number of training techniques and activities is an effective way to reach individuals with different learning styles. It is also generally a good way to make your training a more fluid, dynamic, and experiential learning process. Listed here are a number of ideas for training activities and what they may be useful for.

Acting or dramas can often help participants look objectively at sensitive situations, or explore the consequences of certain actions:

- Puppet plays
- Role plays
- Dramas or skits

Scenarios are helpful for reflecting on and discussing situations:

- Stories read out loud
- Pictures
- Case Studies

Some activities help participants gain first hand insights and experience:

- Demonstrations
- Participation in a process

Activities that help discover what participants need to know are great ways of initiating discussion and performing needs assessment:

- Interviews
- Questionnaires
- Expectation-generating activities

Certain activities help participants to share ideas or gain a better understanding of themselves:

- Individual reflection
- Group discussions
- Partner Interviews





## How you can improve for the future:

As you begin your second practice section in front of the large group, think about the things you had hoped to improve upon. Consciously pay attention to them as you give the presentation. At the end, note the observations the group has shared about your training style.

### Group observations of you:

Room for improvement: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Things done well: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Self Analysis and Goals

Having received feedback twice from people in your training group, take a few moments to write goals that will help you to improve your training style.



\_\_\_\_\_

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\_\_\_\_\_









# Be professional

You should always maintain a professional attitude with everyone you meet. The following guidelines can help:

- Always arrive on time for trainings, or early if you need to set up.
- Always arrive on time for meetings with growers and service providers.
- Shake hands with individuals that you meet with.
- Follow-up meetings with a thank you letter.
- Dress appropriately.
- Only make promises that you can keep.
- Have the courage to say that you don't know the answer to a question; if you offer to find out the answer and follow up, be sure to follow up.

# Follow up and be persistent

Once you establish a relationship with a grower, farmworkers, or service provider you should do everything possible to build on your relationship with that person. There are many ways to follow-up on your initial contact:

- If someone expresses interest in your trainings, follow up with a phone call.
- After giving a training, write a letter of thanks to the grower.
- After giving a trainer, give a copy of the roster to the grower, in person.
- When you run into growers that have participated in your trainings, say hello.

We hope that you now feel prepared to provide vital heat stress safety trainings to the farmworkers in your community. Equipped with the knowledge, the tools and the experience of actually providing a presentation, you will be an important resource to the people that help to put food on our tables. If you are seeking additional information on heat stress and heat stress prevention, be sure to check out the following resources:

National Institute for Occupational Safety and Health, "Health Topic: Heat Stress" located at:  
<http://www.cdc.gov/niosh/topics/heatstress/>

Center for Disease Control, "Extreme Heat: A Prevention Guide to Promote Your Personal Health and Safety", located at:  
[http://www.bt.cdc.gov/disasters/extremeheat/heat\\_guide.asp](http://www.bt.cdc.gov/disasters/extremeheat/heat_guide.asp)

Mayo Clinic, "Heat Stroke: First Aid," located at:  
<http://www.mayoclinic.com/health/first-aid-heatstroke/fa00019>

Mayo Clinic, "Heat Exhaustion: First Aid," located at:  
<http://www.mayoclinic.com/health/first-aid-heat-exhaustion/fa00020>

Occupational Safety and Health Administration, "Safety and Health Topics: Heat Stress," located at:  
<http://www.osha.gov/SLTC/heatstress/>

## Lista de Participantes



Empleador (Employer):		Entrenador (a) (Trainer):		
Ubicación (Location):		Fecha de entrenamiento (Training Date):		
	Nombre (Favor escriba su nombre) Name of Participant (Please print)	Firma del Participante Signature of Participant	X Trabajador(a) (Worker)	X Gerente (Manager)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Enviar copia completada a (Mail a completed copy to): Heat Stress Prevention Program Manager, AFOP, 1726 M. Street Suite 602, Washington, DC 20036.

Certifico que la información en esta página es correcta. (I certify that the information on this page is accurate.)

Firma de entrenador(a) (Signature of Trainer)

Fecha (Date)



## HEAT STRESS PREVENTION TRAINING

### Pre/Post Test

“Hello my name is \_\_\_\_\_, and I am a Heat Stress Prevention trainer with \_\_\_\_\_. Today, I will be giving a presentation to show you how you can protect yourself from heat-related illnesses. Before and after the presentation, I will be asking you several yes/no questions so that I will know whether or not I am a good trainer—you can mark your answers on this paper that I have passed out. Keep in mind that this questionnaire is for me as a trainer—you will not be graded on this questionnaire. Before we begin, please answer all of the questions about yourself at the top of the paper as I read them aloud to you. If you don’t understand a question, let me know, and I will explain it to you.” *The trainer should wait until everyone has completed the top of the paper before continuing.* “Please answer the following questions on the front of the paper. You will use the back to answer questions after the presentation is over. Is everyone ready to begin? I will repeat each question twice. If you need me to speak louder, just let me know.”

### PRE / POST TRAINING TEST

QUESTIONS	ANSWERS
1. <b>Yes or No:</b> A person can become seriously ill, and even die, if his or her body becomes overheated.	<b>YES</b>
2. <b>Yes or No:</b> Extreme thirst, a dry mouth, lightheadedness and irritability are all signs of heat exhaustion.	<b>YES</b>
3. <b>Yes or No:</b> Someone in the fields who acts confused, slurs their speech and has hot, dry skin is probably just dehydrated and should take a short break.	<b>NO</b>
4. <b>Yes or No:</b> To cool down someone suffering from heat exhaustion or heat stroke, you can move the person to the shade, loosen their clothing and splash them with water.	<b>YES</b>
5. <b>Yes or No:</b> The best thing for a person suffering from heat exhaustion is an energy drink to help revive them.	<b>NO</b>
6. <b>Yes or No:</b> If a person loses consciousness or does not improve after trying to cool him or her down, it is best to call for medical help	<b>YES</b>
7. <b>Yes or No:</b> To prevent dehydration, you should drink one cup of water every hour while working.	<b>NO</b>
8. <b>Yes or No:</b> By wearing loose-fitting, light colored clothing to work, you can lower your risk for a heat related illness.	<b>YES</b>
9. <b>Yes or No:</b> It is always better to work alone in the fields.	<b>NO</b>
10. <b>Yes or No:</b> A person with a chronic medical condition, such as high blood pressure or diabetes, will have a high risk for heat exhaustion.	<b>YES</b>
11. <b>Yes or No:</b> Young children and pregnant women deal better with the heat.	<b>NO</b>
12. <b>Yes or No:</b> Proximity to heavy machinery and heavy clothing can both increase the amount of heat you experience in a working environment.	<b>YES</b>



## Heat Stress Prevention Training Pre/Post Test

**Please answer the following questions:**

1. **Sex:**  Male  Female
2. **Age:** \_\_\_\_\_
3. **How many years have you been a farmworker?** Circle your answer  
 less than 1    1    2    3    4    5    6    7    8    9    10    15 or more    20 or more    more than 25
4. **Education:**  
 None     Elementary (1-8)     High School (9-12)     GED Some College     College degree
5. **Have you ever heat stress prevention training before today?**  NO  YES
6. **How were you trained?**  With video/DVD  by a person other \_\_\_\_\_
7. **Who trained you?**  your boss  an AmeriCorps Member  crew leader other \_\_\_\_\_

### Before the Training (Pre)

Circle the answer that you believe is correct

<b>1</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>
<b>2</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>
<b>3</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>
<b>4</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>
<b>5</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>
<b>6</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>
<b>7</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>
<b>8</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>
<b>9</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>
<b>10</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>
<b>11</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>
<b>12</b>	<b>YES</b>	<b>NO</b>	<b>Don't know</b>

# 1



## After the Training (Post)

Circle the answer that you believe is correct

1	YES	NO	Don't know
2	YES	NO	Don't know
3	YES	NO	Don't know
4	YES	NO	Don't know
5	YES	NO	Don't know
6	YES	NO	Don't know
7	YES	NO	Don't know
8	YES	NO	Don't know
9	YES	NO	Don't know
10	YES	NO	Don't know
11	YES	NO	Don't know
12	YES	NO	Don't know

# 2

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Trainer: \_\_\_\_\_

Date: \_\_\_\_\_

Language of Training \_\_\_\_\_

State: \_\_\_\_\_

Pre # correct	
Post # correct	



## Entrenamiento Sobre el Estrés por Calor (Pre/Post Test)

“Hola. Mi nombre es \_\_\_\_\_. Yo soy un(a) entrenador(a) y sirvo con \_\_\_\_\_. Hoy, voy a dar una presentación que les va a enseñar cómo se pueden proteger de las enfermedades causadas por calor. Antes y después de la presentación, voy a hacerles algunas preguntas, a las cuales tienen que responder “sí” o “no”. Marquen sus respuestas en el papel que he distribuido. El propósito de estas preguntas es para saber si soy un(a) entrenador(a) bueno(a). Acuérdense que este cuestionario es para evaluar mi capacidad como entrenador(a). No recibirán una nota por sus respuestas en el cuestionario. Antes que empecemos, por favor contesten todas las preguntas en la parte de arriba del papel mientras yo las leo en voz alta. Si no entienden una pregunta, avísenme y yo se las explicaré. Por favor conteste las siguientes preguntas en la parte de enfrente del papel. La parte de atrás se usará después que la presentación se haya terminado. ¿Todos están listos para empezar? Voy a repetir cada pregunta dos veces. Avísenme si tengo que subir la voz.”

### PRE / POST TRAINING TEST

1. <b>Sí o No:</b> Una persona puede enfermarse, hasta morir, si su cuerpo se sobrecalienta.	<b>SÍ</b>
2. <b>Sí o No:</b> Sed extrema, boca seca, debilidad y facilidad de enojarse son signos del agotamiento por calor.	<b>SÍ</b>
3. <b>Sí o No:</b> Un trabajador en el campo que parece confundido, habla enredado y tiene la piel enrojecida y seca, a lo mejor está deshidratado y debe tomar un descanso breve.	<b>NO</b>
4. <b>Sí o No:</b> Para refrescar a una persona que padece de agotamiento por calor o insolación, se puede mover a él o ella a la sombra, soltar su ropa y salpicarle con agua.	<b>SÍ</b>
5. <b>Sí o No:</b> La mejor manera de ayudar a una persona que sufre de agotamiento por calor es darle una bebida energética para reanimarle.	<b>NO</b>
6. <b>Sí o No:</b> Si una persona pierda consciencia o no mejore después de haberle ayudado enfriarse, lo mejor es llamar para ayuda médica profesional.	<b>SÍ</b>
7. <b>Sí o No:</b> Para prevenir la deshidratación, debes tomar una taza de agua cada hora durante su turno de trabajo.	<b>No</b>
8. <b>Sí o No:</b> Cuando usted lleva ropa liviana de colores claros, puede bajar el riesgo de sufrir una enfermedad relacionada al calor.	<b>SÍ</b>
9. <b>Sí o No:</b> Es siempre mejor trabajar solo en el campo.	<b>NO</b>
10. <b>Sí o No:</b> Una persona con enfermedad crónica, como la hipertensión o la diabetes, tiene mayor riesgo de padecer de agotamiento por calor.	<b>Si</b>
11. <b>Sí o No:</b> Los niños y las mujeres embarazadas se acostumbran mejor que los demás personas al calor.	<b>NO</b>
12. <b>Sí o No:</b> Trabajar cerca a la maquinaria pesada y poniendo ropa pesada pueden aumentar la cantidad de calor que usted experimenta en el lugar donde trabaja.	<b>SÍ</b>





## Entrenamiento Sobre el Estrés por Calor (Pre/Post Test)

Por favor conteste las siguientes preguntas:

1. **Sexo:**  Hombre  Mujer
2. **Edad:** \_\_\_\_\_
3. **¿Por cuántos años ha sido un trabajador(a) agrícola?** Circula tu contestación  
 menos de 1 año    1    2    3    4    5    6    7    8    9    10    15 años o más    20 años o más    más de 25
4. **Educación:**  
 Nada     Primaria (1-8)     Secundaria (9-12)     GED     Algo de Universidad     Grado Universitario
5. **¿Ha sido entrenado alguna vez de cómo usted se puede proteger del calor antes de hoy?**  NO  SI
6. Si la respuesta a la pregunta anterior es SI, por favor complete las preguntas 6-8. **¿Cómo fue entrenado?**  
 \_\_\_\_\_ con un video/DVD    \_\_\_\_\_ por un entrenador    \_\_\_\_\_ de otra manera: \_\_\_\_\_
7. **¿Quién le entrenó?**  Su patrón    \_\_\_\_\_ un miembro AmeriCorps    Otra persona: \_\_\_\_\_

### Antes del Entrenamiento (Pre)

Por favor circule la respuesta que usted entienda es correcta.

<b>1</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>
<b>2</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>
<b>3</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>
<b>4</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>
<b>5</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>
<b>6</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>
<b>7</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>
<b>8</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>
<b>9</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>
<b>10</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>
<b>11</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>
<b>12</b>	<b>Si</b>	<b>No</b>	<b>No sé</b>

# 1

## Después del entrenamiento (Post)

Circule la respuesta que usted entienda es correcta

1	Si	No	No sé
2	Si	No	No sé
3	Si	No	No sé
4	Si	No	No sé
5	Si	No	No sé
6	Si	No	No sé
7	Si	No	No sé
8	Si	No	No sé
9	Si	No	No sé
10	Si	No	No sé
11	Si	No	No sé
12	Si	No	No sé

# 2

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Entrenador \_\_\_\_\_

Fecha: \_\_\_\_\_

Idioma del Entrenamiento \_\_\_\_\_

Estado: \_\_\_\_\_

Pre # correct	
Post # correct	



# Event Training Summary

Farmworker Health & Safety Alliance

<b>Site/Location:</b>	<b>Name of Trainer</b>	<b>Date of Training</b>	<b>Number of people to be trained</b>
<b>Name of Company, organization or School:</b>		<b>Best time to call:</b> _____	
<b>Name of Contact Person:</b>		Office Phone # (        ) _____ - _____	
		Cellular #        (        ) _____ - _____	
		Fax #                (        ) _____ - _____	
<b>Mailing Address</b>			
<b>Indoor Site:</b> (Please circle one)		<b>Outdoor Site:</b> (Please circle one)	
<b>Chairs:</b> Yes    No		<b>Shade:</b> Yes    No	
<b>Table for Props:</b> Yes    No		<b>Location:</b> Field   Shed   Barn   Park   Yard   Farm Nursery   Orchard   Other: _____	
<b>Overhead &amp; Table:</b> Yes    No		<b>Seating:</b> Buckets   Bins   Benches   Chairs   Others _____	
		<b>Table for Props:</b> Yes    NO	
<b>Type of training:</b>		<b>How many participants were under the age of 16:</b>	
<input type="checkbox"/> WPS		_____	
<input type="checkbox"/> Heat Stress			
<input type="checkbox"/> Take Home Exposures			
<input type="checkbox"/> Other: _____			
		<b>How many were:</b>	
		Male: _____	
		Female: _____	
		<b>Has this grower used our Heat Stress Training before?</b> (Please circle one)	
		Yes                    No	
<b>If not, how has he/she trained workers on Heat Stress?</b>		<b>How many farm workers spoke a language other than:</b>	
<input type="checkbox"/> Crew leader <input type="checkbox"/> Video <input type="checkbox"/> None		Spanish or English: _____	
<input type="checkbox"/> Booklets <input type="checkbox"/> Paid Trainer		Which language: _____	
<input type="checkbox"/> Power Point <input type="checkbox"/> Other: _____			
<b>Type of Group:</b> (Please circle one)    Field Worker        Migrant Parents        High School ESL        Citizenship Class        Adult School			
Recovery/DUI    Other _____			
<b>Starting Time</b>	<b>Ending Time</b>	<b>No. of Workers</b>	<b>Language</b> (Please circle one)
1st			Spanish English
2 <sup>nd</sup>			Spanish English
3er			Spanish English
4 <sup>th</sup>			Spanish English
<b>How many farm workers were receiving heat stress training for the first time?</b>			

**Please answer all the questions below**

**Name and location of confirmed training:**

**Estimated driving time from Office:** (please attach directions)

1. What training methods did you use? (circle all that apply)

Flip chart   Role Play   Power Point   Props   Video   Demonstration   Questions/Answers

Others: \_\_\_\_\_

2. What went well during the training?

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3. What would you do differently?

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4. How did the group size affect your ability to train well?

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5. What obstacles did you encounter?

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6. How could you improve the situation next time?

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7. What material, props or training aids would help you in the future?

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8. What other health/safety training would you recommend this group?

---

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## Post-Training Employer Survey

Location/Name of Employer:	Name of Trainer:	Date of Training:	Number of people trained:
<p><b><i>Hello. My name is _____ and I conducted a heat stress training with your workers on _____ (day/month). I am calling to ask a series of quick follow-up questions to gauge my success as a trainer. It won't take more than 5 minutes – do you have a moment?</i></b></p>			
<p><b>1) Did you observe the heat stress prevention training session that was provided to your employees?</b></p>			<input type="checkbox"/> No
<input type="checkbox"/> Yes			
<p><b>2) What was your opinion of the training?</b></p> <p><input type="checkbox"/> Positive; Comments:</p>   <p><input type="checkbox"/> Negative; Comments:</p>   <p><input type="checkbox"/> Other; Comments:</p>			
<p><b>Following the training session, did you, or have you, observed any changes in behavior among those employees that received the heat stress prevention training?</b>      <input type="checkbox"/> No      <input type="checkbox"/> Yes:</p> <p> <input type="checkbox"/> Drink water more frequently                <input type="checkbox"/> Drink water less frequently                <input type="checkbox"/> Drink larger quantities of water  <input type="checkbox"/> Drink smaller quantities of water                <input type="checkbox"/> Take more frequent breaks                <input type="checkbox"/> Take fewer breaks  <input type="checkbox"/> Work more frequently in pairs    <input type="checkbox"/> Work less frequently in pairs      <input type="checkbox"/> Drink fewer sodas, energy drinks  <input type="checkbox"/> Drink more soda, energy drinks      <input type="checkbox"/> Drink more alcohol      <input type="checkbox"/> Drink less alcohol  <input type="checkbox"/> Wear more appropriate clothing (i.e. – light-weight, light-colored, cotton clothing, hat, bandana)      <input type="checkbox"/> Wear less appropriate clothing (i.e. – dark-colored, heavy, shirts made of synthetic materials)  <input type="checkbox"/> Other:         </p>			
<p><b>Have you changed any of your policies following the training?</b></p> <p><input type="checkbox"/> No      <input type="checkbox"/> Yes:</p>			
<p><b>Are there any additional observations or suggestions that you would like to make regarding the heat stress training that your employees received?</b>      <input type="checkbox"/> No    <input type="checkbox"/> Yes:</p>   			

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