Farm Safety Training Guide

Instructions for this training guide:

You should download and print this training guide to review it. At the end of this document is a 20-question exam to which you should pass with 80% accuracy. When completed, sign and date the exam and **provide a copy of the test pages** to your supervisor. This will serve as your record of completion.

Farm Safety Training Guide

Introduction:

The dangers involved with farming activities have always existed. Even in this day and age, hundreds of people die every year from farm related accidents. According to the National Institute of Occupational Safety and Health (NIOSH) Agricultural Safety webpage, agriculture ranks among the most hazardous industries.

Here at the University of Maine, we are committed to proactively preventing all hazards associated with agricultural research.

This training guide will cover many types of hazards that you may find at one of the University's farms. However, this session does not completely cover all of your training. When you have completed this training module, complete the training by clicking the 'take exam' button on the on-line training page. Once that is completed, the Farm Supervisor will then cover any area specific hazards.

Farm Safety Hazards

What hazards are agricultural workers exposed to?

Farmworkers are exposed to numerous safety, health, environmental, biological, and respiratory hazards. These include vehicle rollovers, heat exposure, falls, musculoskeletal injuries, hazardous equipment, grain bins, unsanitary conditions, pesticides, and many others. Below, you will find some of the more common hazards discussed.

Tractor Safety

There are many different types of accidents that can occur while operating a tractor. Rollovers or overturns account for over half of the fatal tractor accidents and are responsible for many disabling injuries and much property damage. Other tractor related accidents are:

- Being caught by or entangled in a Power Takeoff (PTO)
- Colliding with motor vehicles or roadside objects
- Slipping and falling while mounting and dismounting
- Running over bystanders
- Striking overhead hazards
- Being crushed by a poorly supported tractor during repair work
- Being overcome by exhaust gases (carbon monoxide) inside closed buildings

Prior to operating a tractor, each employee/student/volunteer must attend a hands-on tractor operating training class. Proctored by a competent person, this class will cover how to safely operate a tractor. Once this class is completed and you have the farm supervisor's permission, you are ready to operate a tractor.

Once you are properly trained, you should follow five simple steps prior to operating a tractor.

- Make sure that you are mentally and physically fit to operate a tractor that day.
- Be familiar with the operation of the tractor. Read the Operator's Manual if one exists.
- Perform a visual inspection of the environment around the tractor. Look for any obstacles that may be under the tractor or in its path of travel, including bystanders, tools, and equipment.
- Perform a visual safety inspection of the tractor, looking for things that are out of place. Look for fluids dripping, tire wear or low tire pressure, or any broken or missing parts.
- Perform a pre-operational check of the tractor to assure you that it is in safe operating condition. Adjust the seat! Check the brakes and hydraulics.

Rollover Protective Structure

Rollover Protective Structure or ROPS, is a cab or frame that provides a safe environment for the tractor operator in the event of a rollover. Rollover protective structures are engineered for each specific tractor and must meet national and international standards. Each ROPS that meet these standards should have a certification sticker. All University of Maine Farm tractors are required to have ROPS.

There are several methods to reduce the possibility of tractor rollovers. Follow these tips, use caution when operating a tractor, and use a seat belt on tractors equipped with ROPS.

Remember, ROPS are only effective if the operator is using a seatbelt.

- Set wheels at the widest spacing possible for the task at hand.
- Reduce speed when turning.
- Avoid operating tractors near ditches, embankments, and holes.
- Do not attempt to cross steep slopes
- Avoid turning uphill when operating on slopes. If you must turn uphill, slow down and turn as gradually as possible.
- Operate front-end loaders and transport front end loads with the bucket as low as possible. Raise only when necessary to dump.
- Lock brake pedals together before driving at transport speeds.

Power Takeoff Safety

The Power Takeoff (PTO) shafts are used to transmit power from a tractor or other source of power to an implement. Two speeds are commonly used with PTO shafts, 540 and 1000 rpm. RPM means revolutions per minute, the number of complete turns of the shaft in 60 seconds.

The typical PTO shaft can:

- Wrap up 424 feet of shoelace in one minute at 540 revolutions-per-minute (RPM), or 785 feet of shoelace at 1000 RPM. How long is your shoelace?
- Wrap your arm or leg around the PTO shaft nine times in one second at 540 PTO rpm, or nearly 16 times in one second at 1000 PTO rpm. Is your body that flexible?
- Produce second degree burns on your skin, even if you are lucky enough to have the PTO strip only the cotton clothing from your body. Nylon and other synthetics will cut into skin and muscle tissue rather than rub across it.
- Grind away skin, muscles, tendons, and break bones starting in less than three-fourths of one second when you are caught by an unshielded PTO shaft.
- A very strong person can generate about three-fourths of one horsepower. A tractor transmits nearly all of the engine horsepower to the PTO shaft. There is simply no contest; even between a very strong person and a PTO shaft -- the tractor will win.

How Can You Be Safe When Using PTO Shafts?

- First, make sure the shaft is shielded. This includes the driveline shield that covers the implement driveline, and the master shield that covers the universal joint and PTO stub shaft on the tractor.
- Maintain the shield so it can work for you. PTO driveline shields are usually mounted on bearings, so they need to be maintained. Always replace the shield when it is damaged or missing.
- Next, keep a safe distance from it when in use. Keep others away, too. How far? A distance of twice your height is a good start.
- Allow only those who absolutely must be in the area to be there. Keep all children away!
- Always pay attention to what is happening. Most PTO victims were caught by surprise.
- If something goes wrong -- stop the machinery; take the PTO out of gear, stop the engine and set the brake. Put the keys in your pocket before working on the machinery.
- When stopping the machinery for any reason -- end of work, lunch, repairs, or communication -- take the PTO out of gear, stop the engine and set the brake.

Guarding of Farm Field Equipment and Farmstead Equipment

Keep all guards in place when the machine is in operation.

- Guard all “Nip Points” on each piece of equipment. All belts, pulleys, shafts, spindles, sprockets, chains, or moving parts shall be guarded.
- Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning, or unclogging the equipment, except where the machine must be running to be properly serviced or maintained. If the machine must be running, the supervisor must instruct employees as to all steps and safely service or maintain the equipment. Potato Scrubbing Equipment with an unguarded procedures which are necessary to belt and flywheel.
- Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine.
- Lockout electrical power before performing maintenance or service on farmstead equipment.

Driving Farm Machinery on Public Roads

You may be asked to operate a tractor on a public road while you are working at one of the University of Maine Farms. Is so, you must obey all traffic laws. Make sure the tractor has a ‘Slow Moving Vehicle” emblem attached in a conspicuous location. If you are towing a farm implement that obstructs the sign attached to the tractor, you are required to attach an additional sign to the farm implement. Be sure that the tractor’s flashing lights are visible and working. If you are pulling an implement that blocks your view of traffic, as a co-working to escort you with a truck that has the hazard lights flashing. Always look before making a left turn. This step may allow you to avoid a serious accident as a driver attempts to pass.

Tractor Safety Rules

- Do not permit others to ride.
- Hitch only to the drawbar and hitch points.
- Never engage in stunt driving or horseplay.
- Set the brakes securely when the tractor is stopped.
- If you get stuck, notify the farm supervisor.
- Properly mount and dismount the tractor. Do not jump off!
- Do not leave a front-end loader bucket in the up position.
- Keep the front-end loader bucket low as possible while transporting.
- Wear hearing protection while operating a tractor.
- Shift to a lower gear before going up or down hills. Don’t coast, and avoid “free-wheeling” gears.
- Refuel only when the engine is turned off. Don’t smoke while refueling.

- Do not operate a tractor inside of a building for prolonged periods of time. Carbon Monoxide, the “Silent Killer”.
- Never leave a tractor running unattended.
- Always wear your seatbelt.

Mower Safety

Each year many serious accidents occur while mowing the lawn. In fact, according to U.S. Consumer Product Safety Commission, at least 60,000 injuries are treated by hospital emergency room each year due to lawn mower accidents. The two most common lawn mower related injuries are getting cut by a lawn mower blade and being struck by a propelled object. Prior to operating a mower, the farm supervisor will review the operating characteristics of the machine. But first, here are some helpful mower safety tips.

If you have time, check out the information about lawnmower accidents from the OSHA webpage.

Before Using the Mower:

- Read the operator’s manual to familiarize yourself with the machine.
- Learn the location and use of controls, gauges, and dials with the machine (the farm supervisor should review the mower’s operation with you)
- Check to see that all belts, chains or gears are properly guarded.
- Check the discharge chute to see that it is present, point downward, and unobstructed.
- Inspect the work area for debris, holes, ditches, stumps, irrigation valves, etc. Remove all debris and clearly mark any obstacles.
- Wear ear plugs or muffs to protect your hearing.
- Wear safety glasses to protect your eyes from flying debris.

- Dress properly! Do not wear shorts or open-toed shoes while cutting the grass. If you are using a push mower, a heavy, leather boot is required (Steel-toed boots are strongly recommended).
- Do not disable any safety devices.

Mowing Precautions:

- Start the engine properly; do not bypass the starting mechanism by using a screwdriver or other tool.
- Familiarize yourself with speeds, slope capabilities, braking and steering characteristics, and mower clearances.
- Do not allow passengers.
- Do not mow during dark or twilight.
- Use caution when mowing on a slope.
- Always look behind you before backing.
- If you are using a push mower, always push the mower in front of you. Do not pull it behind you.
- Never leave a mower unattended with the engine running. Always disengage the blades, put the mower in neutral or park, turn off the engine, and apply the parking brake.
- Never engage in stunt driving or horseplay.

Pesticide Safety Awareness

Pesticides are chemical agents that are used to control pests. They include herbicides, fungicides, insecticides, and others. Most pesticides are organic compounds which interfere with a physiological process in the pest organism. At the University of Maine Farms, a wide variety of pesticides are used on a continual basis.

The purpose of this section is to inform all University of Maine employees of hazards associated with pesticide application. All University employees that apply pesticides shall receive additional pesticide safety training. Remember, only licensed applicators are allowed to apply pesticides.

Pesticide Exposure:

Before a pesticide can harm you, it must enter your body. Pesticides may enter your body, through ingestion, skin absorption, inhalation, and injection.

Oral Exposure:

Oral exposure may occur because of an accident, but is more likely to occur as the result of carelessness, such as blowing out a plugged nozzle with your mouth, smoking or eating without washing your hands after using a pesticide, or eating fruit that has been recently sprayed with a pesticide. The seriousness of the exposure depends upon the oral toxicity of the material and the amount swallowed.

Dermal Exposure:

Dermal (skin) exposure accounts for about 90% of the exposure pesticide users receive from nonfumigant pesticides. It may occur any time a pesticide is mixed, applied, or handled, and it often goes undetected. Dry materials--dusts, wettable powders, and granules, as well as liquid pesticides--can be absorbed through the skin.

The seriousness of dermal exposure depends upon the:

- dermal toxicity of the pesticide
- rate of absorption through the skin
- size of the skin area contaminated
- length of time the material is in contact with the skin
- amount of pesticide on the skin
- condition of the skin

Rates of absorption through the skin are different for different parts of the body. Using absorption through the forearm as the standard, absorption is over 11 times faster in the lower groin area than on the forearm. (Absorption through the skin in the scrotal area is rapid enough to approximate the effect of injecting the pesticide directly into the bloodstream.)

Absorption continues to take place on all of the affected skin area as long as the pesticide is in contact with the skin. The seriousness of the exposure is increased if the contaminated area is large or if the material remains on the skin for a period of time.

Inhalation Exposure:

Inhalation exposure results from breathing pesticide vapors, dust, or spray particles. Like oral and dermal exposure, inhalation exposure is more serious with some pesticides than with others, particularly fumigant pesticides. Inhalation exposure can occur from the applicator's smoking; breathing smoke from burning containers; breathing fumes from pesticides while applying them without protective equipment; and inhaling fumes while mixing and pouring pesticides.

Injection Exposure:

In the image above, the person is using a knife to open a poorly labeled pesticide container. The knife could become contaminated during this process. If cut by the contaminated knife, the pesticide could be injected directly into the bloodstream.

An injection exposure is probably the least frequent type of pesticide exposure. This type of exposure usually occurs when a glass bottle of pesticide breaks. The contaminated glass from the bottle becomes imbedded into the body. This is very similar to hypodermic needle injection.

Personal Hygiene:

An all too common method of pesticide exposure is ingestion. Usually, this does not refer to an employee opening a bottle of Diazinon and gulping down a pint. However, it does refer to an employee neglecting to wash his/her hands before eating lunch. Another scenario could be an employee smoking a cigarette that has been contaminated with a pesticide.

General rules pertaining to personal hygiene when working with or around pesticides:

- Wash your hands. Always wash your hands before you eat, smoke, use the restroom, and go home. This should remove most pesticide residue from your hands.
- Do not bring any pesticide into the break room or where you eat your lunch.
- Do not smoke while you are around pesticides. Not only can you inhale and ingest trace amounts of pesticides, but also the pesticide could be flammable.
- Do not launder pesticide-contaminated clothes at home.
- Properly maintain personal protective equipment as recommended by manufacturer. Store your personal protective equipment (PPE) away from pesticides.

Restricted Entry Intervals:

Restricted-Entry Intervals (REI's): The amount of time that must past before it is safe to enter the area where pesticides have been applied. Re-entry intervals can range from 12 to 48 hours.

To prevent inadvertent exposure, employers are required to warn employees about pesticide-treated areas. Notification can be oral or via signs.

If the pesticide is highly toxic, notification must be both oral and via signs.

Pesticide Application Information at a Central Location:

Each University of Maine Farm is required to post information in an easily seen, central location about each pesticide application that occurs. This pesticide information must be posted just prior to application and must remain posted for 30 days after the end of the restricted entry interval listed on the pesticide label.

Farm Superintendents must tell workers and handlers where the information is posted and allow them access. The information must remain legible and employees must be notified of any changes to the emergency medical facility information.

Information that must be listed in a central location for each pesticide application:

- Product name
- Environmental Protection Agency (EPA) registration number
- Active ingredient(s)
- Location and description of treated area(s)
- Time and date of application
- Restricted Entry Interval
- Name, address, and telephone number of the nearest emergency medical facility
- An EPA Worker Protection Poster

Large Animal Safety

Animals have been entwined in agriculture since primitive times. Being both fond and dependent on them, we dislike viewing them as potentially dangerous. However, animals can be as dangerous as any farm tractor or pesticide.

General Animal Safety:

Approach the animal safely: The proper approach to a large animal is critical to working with them safely. Most large animals can see at wide angles around them, but there is a blind spot directly behind their hind quarters beyond which they cannot see. Any movement in this "blind spot" will make the animal uneasy and nervous.

The safest approach is to "announce" your approach through a touch to their front or side. Most large animals will kick in an arch beginning toward the front and moving toward the back. Avoid this kicking region when approaching the animal.

Leave yourself an “out”: When you are inside a handling facility or milking lane, always leave yourself a way to get out if it becomes necessary. Try to avoid entering a small area enclosed with large animals unless it is equipped with a man-gate that you can get to easily.

Be careful around sick or hurt animals: When working with sick and hurt animals be sure to protect yourself from any animal-borne diseases such as undulant fever, tetanus, rabies, etc. Wear rubber gloves and other protective clothing for protection and practice good hygiene by washing your hands and face after handling animals.

Maintain even lighting: Shadows mixed with light spots inside handling facilities will increase the animal's fear and tension. Try to keep the lighting in these moving areas dispersed evenly.

Avoid sudden or loud noises: Even the most docile animal can be frightened by a sudden or loud noise. Try to keep sudden or loud noises at a minimum, especially when a co-worker is working with an animal.

Use caution around animals with young: All domesticated animals have strong maternal instincts. Most animals show few, if any, maternal instincts during the initial part of the pregnancy. However, that can change dramatically after giving birth.

Horse Safety:

Though tractors now pull the nation’s plows, many of us still own horses. However, these horses are now used for recreation. No matter how experienced one is in handling horses or how well one knows his or her horse, one must remember that in handling a large animal, which weighs 1,000 pounds, precaution and safety should be practiced at all times.

Horses tend to be excitable and can be frightened by the most unexpected circumstances. If one is not prepared for such an emergency, you may find yourself being dragged, crowded, or stepped on. All could lead to serious injury or even death.

Horse Safety Basics:

- Begin your riding experience with competent instruction. Choose a horse whose disposition and training matches your capabilities. Beginners should avoid powerful, spirited, or temperamental mounts.
- Dress properly for the ride. No loose or flappy garments to catch on branches or scare the horse. Footwear should have a deep heel. Always wear protective headgear!
- Approach every horse quietly and never unexpectedly from behind. Speak softly when approaching, to let it know of your presence. Always approach at an angle, never approach from the rear. Horses have monocular vision, which leaves them with a blind spot in front of their nose, under their head, and directly behind them.

When you are within reach, touch the horse first by gently stroking the shoulder and move calmly to the head.

- Use the correct size stirrup. Check your tack for wear and cracking. Make sure the girth of cinch is tight to keep the saddle from slipping.
- Ride with care near low branches of fences, on rough, slippery or sloping ground and when visibility is poor.
- Ride single file on trails and on or alongside a road.
- Never attach yourself to the horse by any tack or equipment. You could be dragged if you fell off the mount.

Dairy Cattle Safety:

Dairy cattle are generally more nervous than other animals. Creatures of habit, they are easily startled, especially by strange noises and persons. Here are a few tips when working with dairy cattle.

- Calmly announce your presence when approaching a cow.
- Gently touch the animal rather than let the first contact be a bump or shove.
- When moving cows into a constraining space such as a milking parlor stall or squeeze chute, give the animal time to adjust before starting the work at hand.
- A gentle cow can become dangerous when defending calves.

Material Handling

Preventing a back injury is much easier than repairing one. Because your back is critically important to your ability to walk, sit, stand, and run, it's important to take care of it. Most back pain arises from using your back improperly, so learning a few basic rules about lifting, posture and proper exercise can help keep your back in good shape.

Lifting Techniques:

- **Spot the hazard** – Take note of heavy, stressful, awkward, or repetitive activities. Bending and twisting can cause back injury as easily as attempting to lift heavy objects.
- **Assess the risk** – Assess the likelihood of each identified hazard resulting in injury. If you consider there is a significant risk of serious injury, look for the best way to minimize the risk.
- **Make the changes** – Here are some possible changes that one can make to eliminate or reduce back injury.
    - Plan ahead. Consider the safest possible ways of lifting, carrying, holding, lowering, pushing or pulling
    - Eliminate unnecessary tasks

- Avoid double handling
- Use mechanical aids
- Ask for help
- Lighten the load

- **Use correct body techniques** – When lifting a load from ground level, bend knees, keep back straight, keep load close to your body, lift with leg muscles, support forearms with knees, and support the load with your body. When lowering a load, use leg muscles and lower the load by bending your knees, not you back.

Confined Space Awareness

The Occupational Safety and Health Administration (OSHA) define a Confined Space as a space that:

- is large enough and so configured that an employee can bodily enter and perform assigned work (and)
- has limited or restricted means for entry or exit (and)
- is not designed for continuous employee occupancy.

Confined or enclosed spaces include, but are not limited to, storage to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, and open top spaces more than 4 feet deep such as pits, tubs, vaults, and vessels."

In an agricultural setting, the three most common environments that meet OSHA's definition of a confined space are, manure pits, grain bins, and silos. **Other than specifically, trained Facility Maintenance employees, no one should ever enter a**

confined space. All confined spaces have been labeled with a sign that says “Permit-Required Confined Space. Do Not Enter”. If you are unsure whether or not a space is a confined space, ask your supervisor before entering.

Lockout Tagout (LOTO) Awareness

Farm workers performing service or maintenance on machinery and equipment may be exposed to hazards from the unexpected energization, startup of the machinery or equipment, or release of stored energy in the equipment. At the University of Maine Farms, properly trained and authorized individuals are required to perform LOTO on all equipment or machinery that require servicing or maintenance. The performance of LOTO requires the adoption and implementation of practices and procedures to shut down equipment, isolate it from its energy source(s), and prevent the release of potentially hazardous energy while maintenance and servicing activities are being performed.

Only authorized personnel are allow to perform service or maintenance on any equipment or machinery located at the University of Maine Farms. To become authorized to perform LOTO, one must receive additional LOTO training by a qualified individual. Contact your supervisor if you believe you need LOTO training.

What to do if you find a piece of equipment that is locked and tagged out:

- Do not remove the lock, locking device, or tag.
- Do not attempt to use that piece of equipment or machinery. It is locked out for a reason.
- If you need to use a piece of equipment or machinery that is locked and tagged out, talk to the person(s) who locked and tagged it out. That person’s name should be written on the tag.
- Inform your supervisor if someone has removed a lock or tag.

Cold Exposure

During winter months, farm employees may be required to face the occupational hazard of exposure to the cold. Prolonged exposure to freezing temperatures can result in health problems as serious as trench foot, frostbite, and hypothermia. Workers in such industries as construction, commercial fishing and agriculture need to be especially mindful of the weather, its effects on the body, proper prevention techniques, and treatment of cold-related disorders.

Preventing Cold-Related Disorders:

- **Wear a minimum of three layers of clothing**
  - An outer layer to break the wind and allow some ventilations (Gore-Tex® or Nylon)
  - A middle layer of wool or synthetic fabric to absorb perspiration and retain insulation in a damp environment. Down is a useful lightweight insulator, but ineffective once it becomes wet.
  - An inner layer of cotton or synthetic weave to allow ventilation.
  - Pay special attention to feet, hands, face, and head. Also, footgear should be insulated to protect against cold and dampness.
- **Avoid exertion** – Cold weather puts an extra strain on the heart. If you have heart disease or high blood pressure, follow your doctor's advice about shoveling snow or performing other hard work in the cold. Otherwise, if you have to do heavy outdoor chores, dress warmly and work slowly. Remember, your body is already working hard just to stay warm, so don't overdo it.
- **Select the warmest part of the day** – Reduce the amount of activities performed outside. When employees must brave the cold, select the warmest hours of the day (10:00 am – 2:00 pm).
- **Remain hydrated** – Fluid replacement is important while working in cold temperatures, because significant dehydration can occur. In addition, employees should be encouraged to eat a normal, well balanced diet.
- **Take breaks** – Set up a work-rest cycle for employees working outside in cold temperatures.

Cold-Related Disorders:

Hypothermia

When exposed to cold temperatures, your body begins to lose heat faster than it can be produced. Prolonged exposure to cold will eventually use up your body's stored energy. The result is hypothermia, or abnormally low body temperature. Body temperature that is too low affects the brain, making the victim unable to think clearly or move well. This

makes hypothermia particularly dangerous because a person may not know it is happening and won't be able to do anything about it.

Hypothermia is most likely at very cold temperatures, but can occur even at cool temperatures (above 40°F) if a person becomes chilled from rain, sweat, or submersion in cold water.

Victims of hypothermia are most often (1) elderly people with inadequate food, clothing, or heating; (2) babies sleeping in cold bedrooms; and (3) people who remain outdoors for long periods -- the homeless, hikers, hunters, etc.

Warnings signs of hypothermia:

- shivering / exhaustion
- confusion / fumbling hands
- memory loss / slurred speech
- drowsiness
- glassy look in their eyes

What to Do:

- If you notice any of these signs, take the person's temperature. If it is below 95°, the situation is an emergency – call 911!
- Get the victim into a warm room or shelter.
- If the victim has on any wet clothing, remove it.
- Warm the center of the body first -- chest, neck, head, and groin -- using an electric blanket, if available. Or use skin-to-skin contact under loose, dry layers of blankets, clothing, towels, or sheets.
- Warm beverages can help increase the body temperature, but do not give alcoholic beverages. Do not try to give beverages to an unconscious person.
- After body temperature has increased, keep the person dry and wrapped in a warm blanket, including the head and neck.

Frostbite:

Frostbite is an injury to the body that is caused by freezing. Frostbite causes a loss of feeling and color in affected areas. It most often affects the nose, ears, cheeks, chin, fingers, or toes. Frostbite can permanently damage the body, and severe cases can lead to amputation. The risk of frostbite is increased in people with reduced blood circulation and among people who are not dressed properly for extremely cold temperatures.

Recognizing Frostbite:

At the first signs of redness or pain in any skin area, get out of the cold or protect any exposed skin -- frostbite may be beginning. Any of the following signs may indicate frostbite:

- a white or grayish-yellow skin area
- skin that feels unusually firm or waxy
- numbness

A victim is often unaware of frostbite until someone else points it out because the frozen tissues are numb.

What to Do:

- If you detect symptoms of frostbite, call 911!
- Get into a warm room as soon as possible.
- Unless absolutely necessary, do not walk on frostbitten feet or toes – this increases the damage.
- Immerse the affected area in warm -- not hot -- water (the temperature should be comfortable to the touch for unaffected parts of the body).
- Do not rub the frostbitten area with snow or massage it at all. This can cause more damage.
- Don't use a heating pad, heat lamp, or the heat of a stove, fireplace, or radiator for warming. Affected areas are numb and can be easily burned.

These procedures are not substitutes for proper medical care. Hypothermia is a medical emergency and frostbite should be evaluated by a health care provider. It is a good idea to take a first aid and emergency resuscitation (CPR) course to prepare for cold-weather health problems. Knowing what to do is an important part of protecting your health and the health of others.

Heat Exposure

As temperatures rise, so can problems related to heat. As gardeners and horticultural workers, we need to be aware of how serious heat related illnesses can be and how to avoid them. If the body does not rid itself of excess heat fast enough, it cooks the brain and other vital organs. Heat stroke is often fatal, and those who survive may have permanent damage to their vital organs.

Preventing Heat-Related Disorders:

Acclimatization (to heat): – Is a process of adaptation that involves a stepwise adjustment to heat over a week or sometimes longer. An acceptable schedule for achieving acclimatization is to limit occupational heat exposure to one-third of the work day during the first and second days, one-half of the workday during the third and fourth days, and two-thirds of the workday during the fifth and sixth days. The acclimatization procedure must be repeated after days off due to illness or a vacation of one week or more. To achieve acclimation, a person must work in the heat at the activity level required by the job. If the risk of heat stress is increased, additional acclimatization will be required.

Fluid replacement – Always drink plenty of water when in the heat. Simply relying on feeling thirsty will not ensure adequate hydration. To replace the four to eight quarts of sweat that may be produced in hot environments, people require one-half to one cup of water every 20 minutes of the workday. Water at 55°F is preferable to ice water or warm water

Physical fitness is extremely important – The rate of acclimatization is a function of how physically fit the individual is. The unfit worker takes longer to acclimate than one who is fit.

Limit exposure time – Schedule as many hot activities as practical for the coolest part of the day (early morning or late afternoon). Employ additional help or increase mechanical assistance if possible.

Minimize heat exposure – Take advantage of natural or mechanical ventilation (increased air velocities up to 5 mph increase the rate of evaporation and thus the rate of heat loss from the body) and heat shields when applicable.

Take rest breaks – At frequent, regular intervals, preferably in a cool environment sheltered from direct sunlight. Anyone experiencing extreme heat discomfort should rest immediately.

Wear permeable, loose-fitting clothing – Generally less clothing is desirable in hot environments, except when the air temperature is greater than 95°F or a person is standing next to a radiant heat source. Then covering exposed skin is beneficial to reducing heat stress.

Heat Exhaustion:

Heat exhaustion results from the reduction of body water content or blood volume. The condition occurs when the amount of water lost as sweat exceeds the volume of water

drunk during the heat exposure. Heat exhaustion usually develops after several days of exposure to high temperatures. The victim of heat exhaustion may have some or all of the signs or symptoms: heavy sweating; clammy, flushed, or pale skin; weakness; dizziness; nausea; rapid and shallow breathing; headache; vomiting; or fainting.

First-aid treatments for heat exhaustion consist of the following:

- Call 911, especially if victims faint or vomit.
- Move the victims to a cool area.
- Place them on their backs with their feet raised.
- Loosen clothing and apply cool, moist cloths to the body, or fan the victim.
- Slowly administer sips of salt water (plain water for those with heart or blood pressure problems).

Factors that may increase the risk of heat stress include sleep distress, obesity, poor physical condition, lack of acclimatization, dehydration, and alcohol use. Many commonly used drugs may also interfere with the body's response to heat stress. Preexisting medical conditions, such as cardiovascular disease, diabetes, certain skin disorders, and some diseases of the central and peripheral nervous systems, can impair people's normal physiological response to heat stress. Consult your physician for more information concerning the above conditions.

Farm Safety Training Guide Exam

The following questions are designed to test your understanding of Farm Safety. To get credit, you must score at least 80 %.

When completed, sign and date and provide a copy of the test pages (pages 20 through 24 only) to your supervisor. This will serve as a record of completion. It is not necessary to print the entire document.

Question 1: Rollovers or overturns are the leading cause for fatal tractor accidents.

True

False

Question 2: Prior to operating a tractor, each employee, student, or volunteer must:

a. Sign a waiver that releases the University of Maine of any responsibility.

b. Complete this training.

c. Complete a hands-on tractor operator training class.

d. Have a valid driver's license.

e. b & c

Question 3: Rollover Protective Structures are only effective if the operator is wearing a seatbelt.

True

False

Question 4: When operating a University of Maine tractor, the operator is required to wear a seatbelt at all times.

True

False

Question 5: Passengers are allowed to ride on tractors when:

a. The fender is wide enough to ride on it safely.

b. The speed of the tractor is less than 5 MPH.

c. No one is watching.

d. Never

Question 6: When operating a tractor on a public road, the operator must:

a. Have a "slow moving vehicle" emblem attached to the tractor.

b. Make sure that the flashing lights are visible and working.

c. Look in front and behind before making a left turn

d. All of the above

Question 7: All Power Takeoff (PTO) shafts are required to be entirely guarded while in operation.

True

False

Question 8: Who is allowed to apply pesticides at a University of Maine farm?

a. A Licensed Applicator

b. Any employee, if directed by the Supervisor

c. A trained pesticide handler as long as a licensed applicator is within visual & vocal range.

d. All of the above

e. a & c

Question 9: What type of exposure accounts for about 90% of all pesticide exposures?

a. Dermal

b. Oral

c. Injection

d. Inhalation

e. A person has an equal chance of being exposed to a pesticide via all of the above exposure methods.

Question 10: A Restricted Entry Interval sign is designed to warn only visitors from entering an area where a pesticide has recently been applied.

True

False

Question 11: Where is the best location to obtain information about a recent pesticide application?

a. Farm Superintendent

b. Fellow Employee

c. At the Pesticide Application Information Board posted in a central location

d. The MSDs

e. All of the above

Question 12: What are some possible alternatives to lifting a heavy object by yourself?

a. Ask for help.

b. Lighten the load.

c. Use mechanical assistance.

d. All of the above

Question 13: A confined space is defined by OSHA as:

a. Large enough and so configured that an employee can bodily enter and perform assigned work

b. Has limited or restricted means for entry or exit.

c. Not designed for continuous employee occupancy.

d. All of the above

Question 14: Any University employee is allowed to enter a confined space as long as they have permission from their supervisor.

True

False

Question 15: Any University of Maine employee is authorized to perform Lock Out Tag Out?

True

False

Question 16: If you need to use a piece of equipment that is currently locked and tagged out, you should:

a. Remove the Lock and Tag by yourself.

b. Ask your supervisor to remove the Lock and Tag.

c. Talk to the person(s) who locked and tagged it out to determine the status of that piece of equipment.

d. None of the above

Question 17: What is the best way to protect against frostbite and hypothermia?

a. Remain hydrated.

b. Work outside during the warmest part of the day.

c. Wear a minimum of three layers of clothing.

d. Make sure you extremities are protected from the cold.

e. all of the above.

Question 18: One of the most important things you can do on a hot, summer day to prevent Heat Stress is:

a. Drink plenty of fluids

b. Keep working

c. Drink plenty of alcoholic beverages

d. a and c

Question 19: If you are feeling any signs of Heat Stress you should:

a. Notify your supervisor

b. Drink plenty of fluids

c. Rest and cool down

d. All of the above

Question 20: When you are finished with this quiz, the Farm Superintendent is required to train you on the area-specific hazards associated with the farm that you will be working at?

True

False

Signature:

Date:

(Exam answers on next page)

Training Exam Answers

1. True
2. True
3. e.
4. e.
5. d.
6. d.
7. True
8. a.
9. a.
10. False
11. c.
12. d.
13. d.
14. False
15. False
16. c.
17. e.
18. a.
19. d
20. True