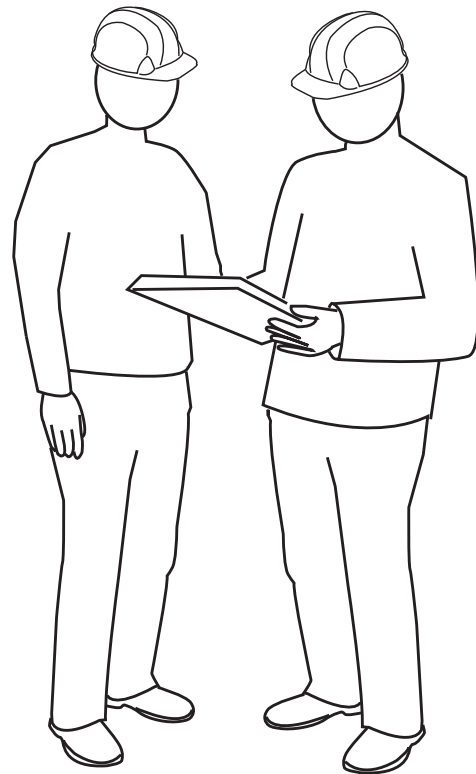


Guide to Managing Safety

**For Employers and Supervisors
In the Landscaping
and Horticultural Services Industry**



KSTATE Research and
Kansas State University Extension

*“Knowledge
for Life”*

Guide to Managing Safety

Contents

Lesson 1	
Preventing Injuries in the Workplace.....	3
Lesson 2	
Develop an Effective Safety Program.....	7
Lesson 3	
Safety Issues for a Diverse Workforce.....	15
Lesson 4	
Follow Government Regulations.....	21
Conclusion	32
Quiz Yourself Solutions	34

Disclaimer

This material was produced under grant number 46G3-HT04 from the Occupational Safety and Health Administration, U.S. Department of Labor. It does not necessarily reflect the views or policies of the U.S. Department of Labor, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.

This booklet was produced by K-State Research and Extension, Kansas State University, Manhattan, Kansas.

The information in this publication has been compiled from a variety of sources believed to be reliable and to represent the best current opinion on the subject. However, neither K-State Research and Extension nor its authors guarantee accuracy or completeness of any information contained in this publication, and neither K-State Research and Extension or its authors shall be responsible for any errors, omissions, or damages arising out of the use of this information. Additional safety measures may be required under particular circumstances.

Preventing Injuries in the Workplace

Safety: A Fundamental Business Responsibility

Federal and state laws require your business to provide a workplace that is free from safety and health hazards. Besides a general duty to provide a safe workplace, you must also observe a number of more specific regulations.

Consequences of not following government regulations can include:

- ▶ OSHA fines of up to \$70,000 per occurrence.
- ▶ Criminal charges.
- ▶ Jail time.
- ▶ Penalty of not less than \$5,000 for willfull violations.
- ▶ Civil action lawsuits brought on by injured employees.

Successful employers recognize that companies are more profitable when they avoid costly injuries and interruptions as a result of workplace accidents.

Basic Principles of Safety Management

1. No employee should risk injury or death to do a job.
2. Safety can and should be managed. Accident prevention leads to more efficient and profitable operations and improves the quality of life for employees.
3. Each employee has a right and responsibility to help in the ongoing safety improvement process. Encourage your employees to help identify and resolve safety concerns as they arise.



Lesson 1

Objectives

1. Recognize basic workplace safety principles.
2. Identify common causes of serious injury and death in the landscaping and horticultural services industry.
3. List the benefits of a safe working environment.

Common Causes of Serious Injury and Death

Motor vehicles, machinery and tree trimming hazards are major causes of injury in landscaping and horticultural services.

Common incidents include:

- ▶ Employees caught in moving parts of machinery.
- ▶ Workers struck by or run over by equipment.
- ▶ Workers killed when equipment overturned or collapsed.
- ▶ Employees electrocuted by power lines.
- ▶ Employees falling out of trees or equipment.
- ▶ Workers struck by falling trees and limbs.
- ▶ Employees killed in traffic accidents.

You must work closely with your employees to establish safe work practices and plan for each project to minimize the risk of tragic incidents.

Accident Report

Operator Killed When Run Over by Brush Hog

Summary of OSHA Accident Inspection 112399985

An employee was operating a tractor with an attached brush hog at a speed of 6-8 mph. When he tried to pass between two trees, the right rear tire of the tractor struck one of the trees. The impact threw the employee off the tractor. He was run over by the brush hog and killed.



Train employees to operate machinery safely.

Accident Report

Employee Killed in Chipper

Summary of OSHA Accident Inspection 300492832

An employee was chipping branches when the chipper became jammed. He tried to unjam the machine and was caught in the infeed roller and chopped to death by the blades.



Establish and enforce safe work practices.

Business Benefits of Managing Safety

An effective safety program will reduce accidents and costly injuries. Companies that demonstrate interest in employees through highly-visible safety programs find it easier to attract and retain loyal workers.

Financial Costs of Workplace Injuries Include:

- ▶ Medical bills.
- ▶ Ambulance service fees.
- ▶ Insurance premium increases.
- ▶ Lawsuits.
- ▶ Care for workers after they've been injured.
- ▶ Wages for time lost by employees who:
 - ▶ provide first aid.
 - ▶ stop to watch or talk about the incident.
 - ▶ clean up afterwards.
 - ▶ process insurance paperwork.
- ▶ Medical supplies.

Intangible Costs of Workplace Injuries Include:

- ▶ Pain and suffering of the injured worker.
- ▶ Damaged public relations.
- ▶ Lowered employee morale.

Accident Report Employee and Boom Fall

Summary of OSHA Accident Inspection 111961413

An employee was operating an aerial lift when the boom fell from the truck, causing the employee to fall with it. Nine of the bolts that secured the boom to the truck were rusty, indicating old breaks, and had sheared off. The employee suffered head, leg and internal injuries.



Require employees to report damaged equipment and remove it from use until serviced.

Average Cost of Workers' Compensation Claims for Selected Injuries, 2000-2001:

(Costs include medical and indemnity payments)

◆ Broken bone or dislocation:	\$18,638
◆ Infection or inflammation:	\$13,277
◆ Sprain or strain:	\$11,725
◆ Burn:	\$10,817
◆ Cut, puncture or scrape:	\$ 8,494

According to the National Safety Council, the average cost of a worker's compensation case in 2000-2001 was \$13,719 per claim.

Quiz Yourself

Circle the correct answer.

Answers can be found on page 34.

1. Consequences of not following government regulations can include:
 - a. Criminal charges
 - b. Jail time
 - c. OSHA fines up to \$70,000 per occurrence
 - d. All of the above

Select the correct answer for the following sentences from the list below.

- a. Machinery
 - b. Responsibility
 - c. Accidents
 - d. Managed
2. Safety can and should be _____.
3. Each employee has the right and _____ to help in the ongoing safety improvement process.
4. An effective safety program will reduce _____ and costly injuries.
5. Motor vehicles, _____ accidents and tree-trimming hazards are major causes of injury in landscaping and horticultural services.

Develop an Effective Safety Program

Preventing accidents is essential to building a profitable business. A strong safety program shows concern for the employee's well-being. It creates a positive company image and can help an organization attract and retain workers. Safety is not a matter of luck; it is a management issue that requires time and effort.

To be effective, a safety program must involve employees in the decision-making process to help identify hazards and assist in solving problems.

Why Involve Employees in the Safety Process?

People must change their behavior to make a workplace safer. A safety program will work only if it has the cooperation and support of everyone who works there. Employees are more committed to a process when they know what is going on, are asked for their input and are given a voice in matters that affect them.

Accident Report Employee Electrocuted

Summary of NIOSH FACE Report IN 87-65

An employee was trimming a tree when his neck contacted an overhead power line and he was electrocuted. The company had no formal safety program.



Implement a safety program to prevent accidents and injuries.

Lesson 2

Objectives

1. Recognize the benefits of involving employees in developing a safety program.
2. Identify ways to create, implement and measure safety objectives.

Get Employees Involved in the Safety Process

Each employee will contribute to a safety program in different ways. Make sure there are many opportunities for each individual to participate. Here are some examples:

Safety Committee

The safety committee strongly influences the safety program. Include people who are respected, viewed as leaders by their peers and who are known for getting things done. Include people from all levels: managers, supervisors and workers. When selecting committee members, consider asking for volunteers. Periodically rotate people on and off the safety committee so different points of view can be expressed.

Safety Suggestions

Encourage employees to contact members of the safety committee any time they have suggestions about how to make the workplace safer. Ensure employees know who the committee members are and how to contact them.

Incident Reports

Encourage employees to file reports if there is an injury, close call or a problem that needs to be corrected. Make sure they know how to accurately submit reports to make the process easy and blame-free.

Incident Investigation Teams

Investigating incidents can provide valuable information, but requires tact and good judgment. Teams must be trained to gather information that will prevent future incidents without allowing the process to turn into fault-finding.

Problem Solving Teams

When a concern arises, temporarily assemble a group of employees with various points of view to find ways to solve the problem.

Safety Equipment Selection

Be sure to get the input of employees who will be using the equipment and allow them to try it out, if possible, before buying.

Safety Reviews

Include people with a variety of backgrounds to evaluate new programs, activities, equipment and facilities, in the planning stage, when problems can be solved with the least expense.

Contests

Encourage friendly competition among work groups. Keep in mind that if the contest rewards work groups for being accident-free, employees may be discouraged from reporting injuries. To avoid this problem, make sure your contests provide rewards for positive safety initiatives without discouraging accident reporting.

Safety Meetings

Frequent safety meetings give employees a chance to express their views and bring attention to important concerns.

Surveys/Questionnaires

These are more formal methods for receiving input. All responses should be anonymous.

Face-to-Face Communication

Safety leaders should visit with employees frequently to discuss concerns.

Respond When Employees Get Involved

1. Listen to what employees have to say.
2. Let everyone express an opinion, even if you do not agree.
3. Make timely, appropriate responses to every suggestion. When it is not possible to make changes, explain the situation, let employees know you appreciate their input and explain plans for addressing the issue in the future.
4. Never discourage anyone from making suggestions or from reporting injuries and unsafe conditions. Let them know you appreciate each suggestion.

Contest Ideas

See which crew can:

- ◆Get the most people trained.
- ◆Correct the most hazards.
- ◆Submit the best safety suggestions.
- ◆Report the most near-misses.

Establish Worthwhile Safety Objectives

Objectives are the “plan of action” your workplace will use to create a successful safety program. Each objective should describe an action you will take or a hazard you will correct. For example: Provide fall protection equipment and training for employees who trim trees.

- ▶ **Consider many sources of information.** Base objectives on employee suggestions, accident history, regulations, known hazards, industry standards, self-inspections and other relevant sources.
- ▶ **Eliminate the most serious hazards first.** Prioritize your efforts by ranking concerns according to both the likelihood and severity of an injury.
- ▶ **Establish clear objectives and divide the process.** Break the process into small steps so your objectives are easier to achieve.
- ▶ **Create a realistic and responsible schedule.** Take on enough projects to make a meaningful difference, but don't take on so much that you fail to meet your objectives.
- ▶ **Don't limit your objectives to existing hazards.** Review proposed new activities, programs, procedures, equipment and facilities to identify new hazards before they occur.

Accomplish Your Safety Objectives

A combination of approaches is necessary to accomplish your objectives to make the workplace safer.

Elimination or Control of Hazards

You may need to alter or replace equipment, use less hazardous materials, mechanize hazardous tasks, enclose hazards behind barriers, etc.

Training

Inform employees of hazards and teach them how to avoid injury on the job.

Workplace Procedures

Change the way work is performed to reduce the risk to employees. Limit the number of people who are allowed to perform hazardous tasks, use chemicals at times when fewer people are in the area or limit the amount of time a worker can be exposed to heat, chemicals, vibration and other hazards.

Personal Protective Equipment

Use safety glasses, hard hats, safety shoes, ear plugs, chemical-resistant gloves, respirators, etc. to protect employees.

Accident Report

Employee Electrocuted

Summary of OSHA Accident Inspection 3228319

A tree trimmer, who was not wearing a hard hat, was operating an aerial lift. As he raised the boom upward, his head contacted an overhead power line. The employee was electrocuted.



Train employees to use proper protective equipment and keep a safe distance from power lines.

Measure Your Accomplishments

It will take time to reduce injury rates. A good safety program will reduce the number of severe injuries, even if there is an increase in the number of minor incidents reported.

Focus on Success

Measure accomplishments such as the number and/or quality of:

- ▶ Hazards corrected.
- ▶ Safety inspections and reviews.
- ▶ Safety meetings and training.
- ▶ Safety improvements to procedures and equipment.
- ▶ Safety suggestions received.
- ▶ Reports of near-misses.
- ▶ Housekeeping improvements.
- ▶ Safe behaviors exhibited by employees.
- ▶ Risk assessments completed.
- ▶ Incidents investigated.
- ▶ Problems solved.

Keep the Ball Rolling

At least once a year, evaluate your program and set new goals. Identify what has worked and keep it up. Decide what didn't work, find out why and make the necessary adjustments.

Document Accomplishments

Safety is achieved in successive steps and a written record will be a valuable reminder of how far you've come.

- ▶ Document and publicize each accomplishment.
- ▶ Ensure everyone knows what has been achieved.
- ▶ Keep an ongoing record of hazards identified, actions taken and progress made.

Lead by Example

Effective leaders influence others by providing information, showing others that change is in their best interest, challenging them to do better and providing a dependable example.

Make sure employees understand why they need to change and exactly what is expected.

The influence you have on others will depend not only on what you say, but also what you do. People will follow your lead only if your daily decisions and actions are consistent with your message.

Take time to listen to others' perspectives and make sure you understand the entire situation before you give advice. People will be more open with you if they know you won't jump to the wrong conclusions.

Don't drop the ball. If you promise to do something, do it and always take responsibility when you make a mistake.

Don't blame employees for accidents. If an accident occurs, wait until the dust settles then give the employee a chance to show what was learned by asking a question such as, "What can we do to keep this from happening again?" You will probably find that the employee learned from the incident and will be more likely to approach you about important issues in the future.

When Helping Others Change Behaviors, Ask Yourself:

- Have they been trained?
- Have they been told what specific actions to take?
- Have they been recognized for doing things right?
- Have they been corrected if their behaviors are unsafe?

Quiz Yourself

Select the correct answer for the following sentences from the list below.

Answers can be found on page 35.

- a. Discourage
 - b. Employees
 - c. Behavior
 - d. Responses
 - e. Consistent
1. To be effective, a safety program must involve _____ in the decision-making process.
 2. People must change their _____ to make a workplace safer.
 3. Make timely, appropriate _____ to every suggestion made by employees.
 4. Never _____ anyone from making suggestions or from reporting injuries and unsafe conditions.
 5. People will follow your lead only if your daily decisions and actions are _____ with your message.

Safety Issues for a Diverse Workforce

As employers and supervisors, you must adapt your management strategies to fit the needs of a diverse workforce.

Never tolerate harassment or discrimination in the workplace. Besides the legal consequences, harassment and discrimination can lead to emotional stress, distraction, lowered productivity and an increase in job-related injuries and illnesses.

You must also keep in mind that diversity can affect an employee's understanding of safety issues.

Language Barriers

When language barriers arise, you must ensure that each employee understands how to work safely.

Employees who do not understand instructions that are given in English may nod in agreement, or say yes, even when they do not fully understand what is being said. As a result, they may begin a job without knowing the safest way to perform the work.

When training employees, always demonstrate a task — don't just talk about it. Next, ask the workers to show you how to perform the same task.

Bilingual employees can be especially helpful for providing work instructions and training. In large workforces, it can be helpful to make bilingual mentors easy to identify. An example is to have mentors wear a different colored hard hat so they are easily spotted among other employees.

Be aware that some workers may not have the reading skills to comprehend training materials, even if they are written in their native language. It can be helpful to partner new employees with more experienced workers who speak their language. This type of hands-on training is one of the most effective methods for teaching job skills to low-literacy workers.

Lesson 3

Objectives

1. Identify cultural differences in the workplace.
2. Recognize government requirements for young workers.

Questions to Ask Workers:

- Was safety considered important where you worked before?
- What safety rules are you used to observing?
- Can you tell me some reasons why people don't always work safely?

Cultural Diversity

Attitudes about safety vary from culture to culture. Open the lines of communication so employees fully understand that safety is important in your company.

- ▶ Ask them how they view the importance of safety at work.
- ▶ Make sure they understand your expectations.
- ▶ Have open discussions to resolve any misunderstandings of company safety policies.

Many workers may do whatever it takes to get the job done — even if that means taking risks. Visit with your employees often to make sure they understand that they should never risk their safety to finish a job.

In many cultures, it is considered disrespectful to question persons in positions of authority. Therefore, some workers may carry out instructions even when obvious dangers are present. Visit with your workers often about their responsibility to speak up when they encounter a problem.

Remember: The best way to establish trust with workers is to develop strong personal relationships and treat everyone fairly.

Gender Differences

Employers and supervisors must realize how gender affects the safety needs and expectations of the workforce. Some important considerations include:

- ▶ Provide equipment and tools of various sizes. Make sure the tool fits the worker, don't try to make the worker fit the tool.
- ▶ During the initial training period, provide an opportunity for new employees to partner with experienced employees of the same gender, if possible. Encourage all experienced employees to share their knowledge with everyone on the job—including those of the opposite gender.
- ▶ Some pesticides and other hazardous chemicals can be harmful to fetuses and reproductive organs. Make sure all workers (male and female) are informed of any reproductive hazards they face and allow them to take appropriate precautions.
- ▶ Ensure private, clean restroom facilities with hand washing supplies nearby. For unisex restrooms, ensure the door has a lock.

The Aging Workforce

Research shows that older workers, on average, are NOT more likely than others to be involved in accidents. Older workers do; however, have a higher rate of injuries from falls than younger workers.

Older employees often have advanced knowledge, skills and judgment abilities that make them especially valuable in the workplace. Encourage them to participate in company decision processes and to contribute any ideas they might have. Challenge them to share their wisdom with younger workers who are just starting out.

Young Workers

The following actions should be taken by supervisors to protect young workers.

- ▶ Evaluate every job in advance to determine if young workers can perform it safely.
- ▶ Less experienced employees may not transfer a concept from one situation to another. It is especially important for young workers to successfully complete job-specific safety training before performing any new duties. This training should be repeated periodically and when there are changes in work procedures and equipment.
- ▶ Take time to point out hazards whenever they are encountered. Inexperienced workers may not realize that a hazard exists even when it is obvious to a long-term employee.
- ▶ Always model the appropriate behavior. Everyone learns by observing — if long-term employees take dangerous shortcuts, so will young workers.

Accident Report

Youth Crushed Beneath Tractor

Summary of NIOSH FACE Report IA 95-009

A 12-year-old boy was driving a tractor too close to a ditch when it overturned, crushing him to death. The tractor had no safety belt or ROPS structure.



Observe U.S. Department of Labor regulations for employing youth.

Hazardous and Prohibited Occupations

The U.S. Department of Labor has established restrictions on the type of work that may be performed by youth under 18 years of age. The rules may vary somewhat depending on the nature of your business and the state in which you operate. Employers should contact their state department of labor or visit the

U.S. Department of Labor Web site.:

<http://www.youthrules.dol.gov/index.htm>

Youth under age 18 are prohibited from the following (exceptions are allowed in some circumstances, visit the U.S. Department of Labor Web site for more details):

- ▶ Driving and being an outside helper on a motor vehicle.
- ▶ Logging operations.
- ▶ Power-driven hoisting apparatus, including forklifts.
- ▶ Power-driven circular saws, band saws and guillotine shears.
- ▶ Wrecking and demolition operations.
- ▶ Excavation operations.
- ▶ Other operations as specified by the Department of Labor.

Youth ages 14-15 are prohibited from the operations listed above, plus the following:

- ▶ Manufacturing.
- ▶ Public utility jobs.
- ▶ Construction or repair jobs.
- ▶ Power-driven machinery or hoisting apparatus other than typical office machines.
- ▶ Processing jobs.
- ▶ Workrooms where products are manufactured or processed.
- ▶ Warehousing and storage.
- ▶ Other operations as specified by the Department of Labor.
- ▶ Youth ages 14-15 also have restrictions on the amount of hours and time of day they may work.

Quiz Yourself

Select the correct answer for the following sentences from the list below.

Answers can be found on page 36.

- a. Safety Training
- b. Fairly
- c. Older
- d. Sizes
- e. Demonstrate

1. To help overcome language barriers, always _____ a task.
2. The best way to establish trust with workers is to develop strong personal relationships and treat everyone _____.
3. Provide tools and equipment of various _____ so the tool fits the worker.
4. Challenge _____ employees to share their wisdom with younger workers who are just starting out.
5. Require young workers to successfully complete job-specific _____ before performing any new duties.

Follow Government Regulations

OSHA and other agencies have established standards to promote safety and health in the workplace. Employers must observe these regulations in order to minimize the risk of injury to workers. Failure to protect worker safety can result in devastating business losses due to the cost of accidents as well as fines imposed by government agencies.

Occupational Safety and Health Administration (OSHA)

You can get help complying with OSHA regulations by contacting your regional OSHA office or by visiting the OSHA Web site at <http://www.osha.gov>.

Environmental Protection Agency (EPA)

If your company applies pesticides, you will also need to comply with safety regulations established by the EPA. For help with pesticide regulations, contact your local or state Cooperative Extension Service, your regional EPA office or visit the EPA Web site at <http://www.epa.gov>.

Transportation Safety Resources

State and local traffic laws and drivers licensing requirements must be observed. If your company operates commercial motor vehicles, the operators may be required to have commercial driver's licenses and undergo drug and alcohol testing. Information is available from the Federal Motor Carriers Safety Administration's Web site at <http://www.fmcsa.dot.gov>.

Other Resources

Depending on your work activities and geographical location, you may also need to comply with regulations administered by other agencies. The local Chamber of Commerce, state Cooperative Extension Service and state or local economic development agencies can be good sources of information regarding business laws and regulations in your area. For a listing of Extension offices, visit the Web site of Cooperative State Research, Education and Extension Service at <http://www.csrees.usda.gov>.

Lesson 4

Objective

1. Identify government regulations specific to the 10 most common OSHA citations.



10 Most Common OSHA Violations in Landscaping and Horticultural Services

During OSHA inspections of landscaping and horticultural services worksites in fiscal year 2004, the 10 most commonly cited safety regulations were as follows:

1. Personal Protective Equipment (29 CFR 1910.132)

This standard requires employers to provide Personal Protective Equipment (PPE). Employers must conduct an assessment to determine what PPE is necessary. They must also make sure PPE is appropriate, that it fits properly and that it is adequately maintained. Finally, employers must provide training to workers. For landscaping and horticultural services, PPE commonly includes items such as:

Safety Glasses or Goggles

Eye protection may be required when workers are exposed to flying particles, impact by objects, chemicals, and other eye hazards.

Face Shields

Face protection may be required when workers are exposed to flying particles, impact by objects, chemicals, welding and other hazards.

Hearing Protection

Ear plug or muffs must *be available* if workers are exposed to noise levels that average 85 decibels (dB) or more for an 8-hour workday. Ear plugs or muffs must *be worn* if workers are exposed to noise levels that average 90dB or more during the workday (employees who have not had a baseline audiogram *must wear* hearing protection if the 8-hour average is 85 dB or more).

Hard Hats

Head protection may be required when workers encounter falling objects or electrical current.

Cut-Resistant Leg Protection

Cut-resistant leg protection is required when workers operate chainsaws. An exception can be made if leg protection increases the risk of falling while climbing. An exception can also be made if the employee is working in an aerial lift (bucket truck) meeting certain requirements.

Gloves

Appropriate gloves may be required when workers are at risk of exposure to sharp edges, chemicals, burning surfaces, electrical current and other hazards.

Footwear

Protective footwear may be required when workers are at risk of injury due to chainsaws, falling or rolling objects, crushing or penetrating materials or electrical hazards.

Electrical Insulating Materials

Electrical insulating blankets, matting, covers, line hoses, gloves and sleeves may be required if workers are exposed to power lines and other electrical conductors.

Respirators

Respiratory protection may be required if workers are exposed to hazardous airborne dusts, vapors, gases, mists or fumes.

Compliance Guidelines

Practical guidelines for complying with the personal protective equipment standard can be found on the Web:

OSHA Publication 3151-12R 2003, Personal Protective Equipment

Personal Protective Equipment

<http://www.osha.gov/Publications/osha3151.pdf>

OSHA PPE Web page

<http://www.osha.gov/SLTC/personalprotectiveequipment/index.html>

2. Vehicle-Mounted Elevating and Rotating Work Platforms (29 CFR 1910.67)

This standard identifies requirements for aerial lifts, also known as bucket trucks and cherry pickers. Requirements include:

- ▶ Aerial lifts must be designed and manufactured according to industry standards and any field modifications must be approved by the manufacturer.
- ▶ Workers must be properly trained, observe safe operating procedures and use fall protection equipment (e.g. harness and lanyard attached to the bucket or boom).
- ▶ Aerial lifts must be set up safely before use and controls must be tested at the beginning of each day.
- ▶ Capacities and limitations of aerial lifts must not be exceeded.
- ▶ Precautions must be taken when working near power lines.
- ▶ Aerial lifts must be properly secured before travel. Never remove a truck while workers are in the bucket unless the equipment is specifically designed for that purpose.
- ▶ Operation of upper and lower controls must be properly coordinated.
- ▶ Test of electrical insulation must be performed periodically.

Compliance Guidelines

A complete copy of standard 29 CFR 1910.67 can be found on the Web: *<http://www.osha.gov/comp-links.html>*

3. Hazard Communication (29 CFR 1910.1200)

The hazard communication standard requires employers to inform workers about the hazards of chemicals in the workplace. Chemicals that are commonly used in the landscaping and horticultural services industry include fuels, lubricants, pesticides, cleaning solvents and other hazardous substances. Employer obligations include the following:

- ▶ Develop a written hazard communication program.
- ▶ Discuss chemicals with other employers on the worksite.
- ▶ Make sure chemical containers are labeled.
- ▶ Make employees aware of chemical hazards that could result from any non-routine tasks or activities involving unlabeled pipes.
- ▶ Compile a list of the hazardous chemicals in the workplace that is keyed to the appropriate hazard warnings. (Note: Pesticide labeling is covered by separate regulations enforced by the EPA.)
- ▶ Ensure that Material Safety Data Sheets (MSDS) are readily accessible in the workplace for each hazardous chemical in use.
- ▶ Provide workers with information and training on hazardous chemicals.

Compliance Guidelines

Practical guidance for complying with the hazard communication standard can be found on the Web:

OSHA Publication 3111 2000 (Reprinted)

Hazard Communication Guidelines for Compliance

<http://www.osha.gov/Publications/osh3111.pdf>

OSHA Publication 3084 1998 (Revised)

Chemical Hazard Communication

<http://www.osha.gov/Publications/osh3084.pdf>

OSHA Hazard Communication Web page

<http://www.osha.gov/SLTC/hazardcommunications/index.html>

4. General Duty Clause (Section 5 (a) (1) of the OSH Act)

The general duty clause requires employers to protect workers from recognized hazards that are capable of causing serious injury or death. Employers are typically cited under the General Duty Clause when a serious hazard is obvious, but there is no specific OSHA standard to cover it.

5. Logging Operations (29 CFR 1910.266)

The logging standard contains many requirements relating to tree trimming and felling operations. Topics addressed in the standard include:

- ▶ Personal protective equipment.
- ▶ First-aid kits.
- ▶ Safety belts for machines equipped with rollover protective structures (ROPS), falling object protective structures (FOPS) or overhead guards.
- ▶ Portable fire extinguishers.
- ▶ Weather conditions that affect safety.
- ▶ Locating workers so they do not endanger each other.
- ▶ Signaling and signal equipment.
- ▶ Safety near overhead electric lines.
- ▶ Flammable and combustible liquids.
- ▶ Explosives and blasting agents.
- ▶ Hand and portable powered tools.
- ▶ Machines and vehicles.
- ▶ Tree harvesting procedures.
- ▶ Employee training.

Compliance Guidelines

Requirements are extensive, but practical guidelines for complying with the logging standard can be found on the Web:

OSHA Logging Web page

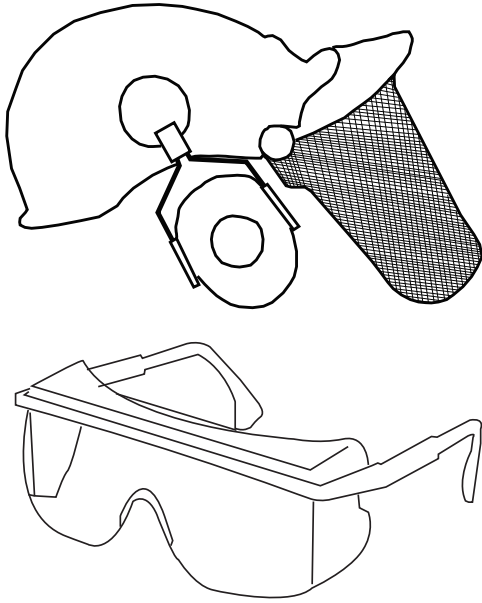
<http://www.osha.gov/SLTC/logging/index.html>

OSHA Logging e-Tool

<http://www.osha.gov/SLTC/etools/logging/mainpage.html>

NIOSH Logging Web page

<http://www.cdc.gov/niosh/injury/traumalog.html>



6. Eye and Face Protection (29 CFR 1910.133)

Employers must ensure that workers use appropriate eye or face protection when exposed to hazards such as flying particles, impact by objects, liquid chemicals and radiant energy from welding. Eye and face protection must comply with industry standards and must not interfere with a worker's prescription lenses.

In landscaping and horticultural services, employees commonly need eye protection when operating chainsaws, wood chippers and string trimmers. Eye or face protection may also be needed when pouring gasoline and other hazardous chemicals and when mixing or applying pesticides. Finally, protection is typically needed while welding, cutting, brazing and when using lasers.

To protect against particles and impact, safety glasses should be equipped with side shields. To protect from chemical splashes, goggles are usually a better choice. For welding, cutting, brazing and lasers, goggles and face shields must be rated for intensity (and in some cases wavelength) of radiation emitted.

Compliance Guidelines

Practical guidelines for complying with the eye and face protection standard can be found on the Web:

OSHA Eye and Face Protection e-Tool

<http://www.osha.gov/SLTC/etools/eyeandface/index.html>

OSHA Publication 3151-12R 2003

Personal Protective Equipment

<http://www.osha.gov/Publications/osha3151.pdf>

OSHA Eye and Face Protection Web page

<http://www.osha.gov/SLTC/eyefaceprotection/index.html>

Accident Report

Employee's Eye Cut by Flying Debris

Summary of OSHA Accident Inspection 119806867

An employee was mowing grass with a tractor, but was not wearing safety glasses. He looked back and a piece of metal was thrown from the mower and punctured his right eye. He lost all vision in that eye.



Require employees to wear eye protection when operating mowing equipment.

7. Head Protection (29 CFR 1910.135)

Employers must ensure that workers wear hard hats when there is a potential for head injury due to falling objects. In addition, employers must require workers to wear hard hats that protect from electrical shock near power lines and other electrical conductors that could contact the head.

- ▶ Hard hats must conform to industry standards. Hard hats are rated according to the type of impact protection and class of electrical protection they offer.
- ▶ Type I hard hats protect against impact from falling objects (top impact).
- ▶ Type II hard hats protect against top, side, front and rear impact.
- ▶ Class E hard hats also protect against high voltage.
- ▶ A Type I Class E hard hat protects against both top impact and high voltage, and is commonly worn in this industry.

Compliance Guidelines

Practical guidelines for complying with the occupational head protection standard can be found on the Web:

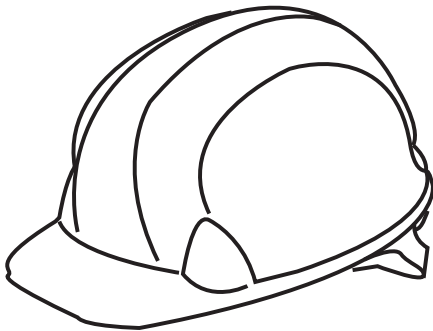
OSHA Publication 3151-12R 2003

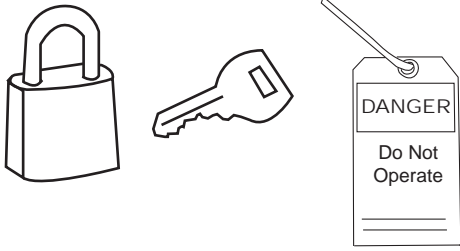
Personal Protective Equipment

<http://www.osha.gov/Publications/osha3151.pdf>

OSHA's PPE Web page

<http://www.osha.gov/SLTC/personalprotectiveequipment/index.html>





8. The Control of Hazardous Energy, Lockout/Tagout (29 CFR 1910.147)

The lockout/tagout standard contains many requirements to protect workers when they repair, service or perform maintenance on equipment with moving parts or hazardous power sources such as hydraulics or electricity. When servicing landscaping and horticultural equipment, the motor must be shut off, precautions taken to prevent the equipment from starting up, and additional measures may be required to protect workers from moving parts and hazardous power sources. The lockout/tagout standard requires employers to:

- ▶ Develop a written energy control program.
- ▶ Use locks to keep equipment from being started accidentally during service and maintenance. Note: tags are allowed instead of locks in some cases.
- ▶ Use energy control procedures to ensure the safety of employees who service and repair equipment.
- ▶ Periodically inspect the workplace to make sure lockout/tagout procedures are being used and correct any problems noted.
- ▶ Provide training and information to employees who are involved in, affected by or located in areas where equipment is serviced or maintained.

Compliance Guidelines

Practical guidance for complying with the lockout/tagout standard can be found on the Web:

OSHA Publication 3120 2002 (Revised)

Control of Hazardous Energy: Lockout/Tagout

<http://www.osha.gov/Publications/osh3120.pdf>

OSHA Lockout/Tagout Web page

<http://www.osha.gov/SLTC/controlhazardousenergy/index.html>

OSHA Lockout/Tagout e-Tool

<http://www.osha.gov/dts/osta/lototraining/index.htm>

9. Recordkeeping Forms (29 CFR 1904.29)

The recordkeeping standard requires records of recordable on-the-job injuries and illnesses using forms developed by OSHA (or equivalent forms, such as forms provided for by an insurance company).

Exception: If your company has 10 or fewer employees at all times during the last calendar year, you do not need to keep OSHA injury and illness records unless OSHA or the Bureau of Labor Statistics informs you in writing that you must keep records.

Important: Regardless of the exception on recordkeeping, all employers covered by OSHA — even those with fewer than 10 employees — must report to their OSHA Regional Office (or call 1-800-321-6742) within 8 hours to report any workplace incident that results in either of the following:

- ▶ A fatality
- ▶ The hospitalization of three or more employees

Forms must be completed as follows:

- ▶ Within seven calendar days after learning of a recordable injury or illness, the employer must complete information as follows:
 - Enter a one or two line description of each recordable injury or illness on the OSHA 300 Log of Work-Related Injuries and Illnesses.
 - Complete an OSHA 301 Injury and Illness Incident Report for each recordable injury or illness entered on the OSHA 300 Log.
- ▶ Annually, complete an OSHA 300-A Summary of Work-Related Injuries and Illnesses as a year-end summary of the OSHA 300 Log.

Compliance Guidelines

Practical guidance for complying with the recordkeeping standard can be found on the Web:

OSHA Publication 3169

Recordkeeping

<http://www.osha.gov/recordkeeping/pub3169text.html>

OSHA Recordkeeping Web page

<http://www.osha.gov/recordkeeping/index.html>

Recordable injuries and illnesses include:

- ▶ Death
- ▶ Days away from work
- ▶ Restricted work or transfer to another job
- ▶ Medical treatment beyond first aid
- ▶ Loss of consciousness
- ▶ Significant injury or illness diagnosed by a physician or other licensed health care professional, even if it does not result in any of the above

What is Flash Point?

The flash point is the lowest temperature at which a liquid produces vapors that will ignite in air. (Flammable liquids don't actually burn, but their vapors do.)

For instance, the flash point of ordinary gasoline is typically around minus 45 degrees F (45 degrees below zero), depending on the formulation. This means that if liquid gasoline is chilled below this temperature, it will not produce a flammable mixture of vapors — meaning it will not normally burn (please don't attempt to test this!)

- ▶ A liquid is considered flammable if it has a flash point below 100 degrees F.
- ▶ A liquid is considered combustible if it has a flash point above 100 degrees F.

Typical flash points of other chemicals used in landscaping and horticulture include:

- ▶ Turpentine, 95 F (flammable)
- ▶ Kerosene, 110-150 F (combustible)
- ▶ Diesel fuel, 100-200 F (combustible)
- ▶ Ethylene glycol, 230 F (nonflammable)
- ▶ Hydraulic fluid, 300-400 F (nonflammable)
- ▶ Motor oil, 400 F (nonflammable)

Important: Flash points can vary, depending on the formulation. Check the MSDS for the flash points of the chemicals you use.

10. Flammable and Combustible Liquids (29 CFR 1910.106)

This standard requires you to protect your employees from chemicals that can ignite or explode. The standard applies to the storage, handling and use of liquids with a flash point below 200 degrees Fahrenheit.

The standard has special requirements for the storage of flammable and combustible liquids in:

- ▶ Containers
- ▶ Cabinets
- ▶ Storage Rooms

The standard also contains requirements for dispensing and using flammable and combustible liquids in a manner that protects employees from fires and explosions.

Compliance Guidelines

Practical guidance for complying with the recordkeeping standard can be found on the Web:

OSHA Fire Safety Web page

<http://www.osha.gov/SLTC/firesafety/index.html>

OSHA Small Business Outreach and Training Page

<http://www.osha.gov/SLTC/smallbusiness/sec8.html>

Quiz Yourself

Circle the correct answer.

Answers can be found on page 37.

1. Some of the most common OSHA citations in landscaping and horticultural services include:
 - a. Personal protective equipment
 - b. Hazard communication
 - c. General duty clause
 - d. All of the above

Select the correct answer for the following sentences from the list below.

- a. Record-keeping
 - b. Assessment
 - c. Chemicals
2. Employers must conduct an _____ to determine what personal protective equipment is necessary.
3. The hazard communication standard requires employers to inform workers about the hazards of _____ in the workplace.
4. The _____ standard requires records of recordable on-the-job injuries and illnesses using forms developed by OSHA.

Conclusion

Managing safety is your responsibility. Creating a successful safety program and properly training employees will lead to a safer, more profitable business.

You have been presented with safety tips, guidelines, information resources and exercises designed to help you manage your company's safety program. Use this information to keep you and your employees safe.

Quiz Yourself

Circle the correct answer.

Answers can be found on page 38.

1. Financial costs of workplace injuries include:
 - a. Medical bills
 - b. Lawsuits
 - c. Insurance premium increases
 - d. All of the above

2. Some of the most common OSHA citations in the landscaping and horticultural services include:
 - a. Vehicle-mounted elevating and rotating work platforms
 - b. The control of hazardous energy, lockout/tagout
 - c. Recordkeeping forms
 - d. All of the above

Select the correct answer for the following sentences from the list below.

- a. Evaluate
 - b. Meetings
 - c. Behavior
 - d. Mentors
-
2. Frequent safety _____ give employees a chance to express their views and bring attention to important concerns.

 3. At least once a year, _____ your program and set new goals.

 4. In large workforces, it can be helpful to make bilingual _____ easy to identify.

 5. When training employees, especially young workers, always model the appropriate _____.

Quiz Yourself

Solutions

Lesson 1

Circle the correct answer.

1. Consequences of not following government regulations can include:
 - a. Criminal charges
 - b. Jail time
 - c. OSHA fines up to \$70,000 per occurrence
 - d. All of the above

Select the correct answer for the following sentences from the list below.

- a. Machinery
 - b. Responsibility
 - c. Accidents
 - d. Managed
2. Safety can and should be **d** .
 3. Each employee has the right and **b** to help in the ongoing safety improvement process.
 4. An effective safety program will reduce **c** and costly injuries.
 5. Motor vehicles, **a** accidents and tree trimming hazards are major causes of injury in landscaping and horticultural services.

Lesson 2

Select the correct answer for the following sentences from the list below.

- a. Discourage
- b. Employees
- c. Behavior
- d. Responses
- e. Consistent

1. To be effective, a safety program must involve **b** in the decision-making process.
2. People must change their **c** to make a workplace safer.
3. Make timely, appropriate **d** to every suggestion made by employees.
4. Never **a** anyone from making suggestions or from reporting injuries and unsafe conditions.
5. People will follow your lead only if your daily decisions and actions are **e** with your message.

Lesson 3

Select the correct answer for the following sentences from the list below.

- a. Safety Training
- b. Fairly
- c. Older
- d. Sizes
- e. Demonstrate

1. To help overcome language barriers, always e a task.
2. The best way to establish trust with workers is to develop strong personal relationships and treat everyone b .
3. Provide tools and equipment of various d so the tool fits the worker.
4. Challenge c employees to share their wisdom with younger workers who are just starting out.
5. Require young workers to successfully complete job-specific a before performing any new duties.

Lesson 4

Circle the correct answer.

1. Some of the most common OSHA citations in landscaping and horticultural services include:
 - a. Personal protective equipment
 - b. Hazard communication
 - c. General duty clause
 - d. All of the above

Select the correct answer for the following sentences from the list below.

- a. Record-keeping
 - b. Assessment
 - c. Chemicals
2. Employers must conduct an **b** to determine what personal protective equipment is necessary.
3. The hazard communication standard requires employers to inform workers about the hazards of **c** in the workplace.
4. The **a** standard requires records of recordable on-the-job injuries and illnesses using forms developed by OSHA.

Conclusion

Circle the correct answer.

1. Financial costs of workplace injuries include:
 - a. Medical bills
 - b. Lawsuits
 - c. Insurance premium increases
 - d. All of the above

2. Some of the most common OSHA citations in the landscaping and horticultural services include:
 - a. Vehicle-mounted elevating and rotating work platforms
 - b. The control of hazardous energy, lockout/tagout
 - c. Recordkeeping forms
 - d. All of the above

Select the correct answer for the following sentences from the list below.

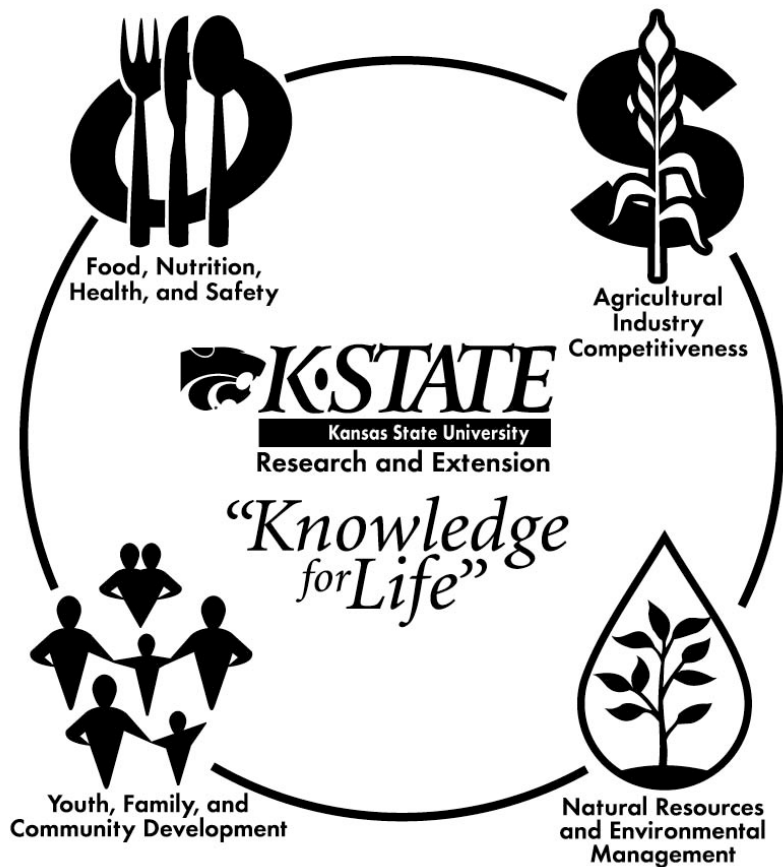
- a. Evaluate
 - b. Meetings
 - c. Behavior
 - d. Mentors
-
2. Frequent safety **b** give employees a chance to express their views and bring attention to important concerns.

 3. At least once a year, **a** your program and set new goals.

 4. In large workforces, it can be helpful to make bilingual **d** easy to identify.

 5. When training employees, especially young workers, always model the appropriate **c** .

Notes



This publication is produced by K-State Research and Extension, Manhattan, Kansas,
www.oznet.ksu.edu

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

**Kansas State University Agricultural Experiment Station
 and Cooperative Extension Service**

MF 2715

April 2006

K-State Research and Extension is an equal opportunity provider and employer. Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, as amended. Kansas State University, County Extension Councils, Extension Districts, and United States Department of Agriculture Cooperating, Fred A. Cholick, Director.