



Safety in Agriculture  
Search for Safety  
Laboratory Exercise

**Hearing Protection**

Record the noise levels for the readings taken:

ITEM

NOISE LEVEL

The noise level readings are given in dBA. Look at the examples of hearing protectors (hp). The greater the Noise Reduction Rating (NRR), the more protection the hp provides. For the above instances that a worker would be exposed to, select the appropriate hearing protection to be used. Actual exposure must be less than 85 dBA in order to prevent hearing loss.

What are the different types of hearing protection?

Identify likes and dislikes of the styles of hearing protection:



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**Lock-Out/Tag-Out**

- a) What is lock-out/tag-out?
  
- b) If 6 people need to enter an area to perform maintenance, how many different locks and keys are required? \_\_\_\_\_
  
- c) Lock-out is used to protect equipment start-up by other people as well as by \_\_\_\_\_.

**Fire Extinguisher Demo**

- a) What is PASS?
  
- b) What are the classifications of fire extinguishers?

CLASSIFICATION	TYPE OF COMBUSTIBLE
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- c) Which extinguisher is considered the 'all-purpose' extinguisher? \_\_\_\_\_

**Grain and Trenching Entrapment**

At the barrel filled with sand, pull on the rope (attached to a disk) to attempt to 'rescue' someone who is buried.

Was it possible to pull out the disk? \_\_\_\_\_

What is the magnitude of the forces holding someone buried in grain or soil? \_\_\_\_\_



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**Electrical Safety**

- a) Explain how wood can conduct electricity?
- b) If power lines were on your car and you had to escape, how should you keep your feet and why?
- c) If you see a line on the ground, is it safe to touch?
- d) Who needs to be called before you do any digging? \_\_\_\_\_  
If they are not called, how costly could this be for you?
- e) If a power line is lying across your driveway, is it safe to move it with a tree limb?
- f) What are the dangers when using a generator during a power outage?

**Respirator Fit Testing**

- a) The two types of fit testing for respirators are:
- b) Which type is easier to perform?  
Which is more accurate?
- c) When should a full-face respirator be used instead of a half-face respirator?



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#### Air Quality

EH&S will demonstrate air quality measurement. A \_\_\_\_\_ meter is used to determine the oxygen level and contaminant levels in a simulated confined space.

- What types of hazards are present?
- How could a person be protected if they had to enter the space?
- Identify 3 additional safety hazards that a grain bin, silo, or other confined space may have.

The indoor air quality (IAQ) meter and hand-held pump are used to measure carbon dioxide, temperature, and humidity.

CO<sub>2</sub> = \_\_\_\_\_ Temp = \_\_\_\_\_ Humidity = \_\_\_\_\_

- What are the advantages and disadvantages of the 2 different instruments for measuring carbon dioxide?
- Why should your home have a CO detector?

What should you look for when purchasing one?



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#### **Pesticides**

Select a pesticide label, and identify the following:

- Name of the pesticide \_\_\_\_\_
- Minimum PPE required:

For the PPE required on the label, match each with its identifier from the PPE on the PAPA mannequin (PAPA = Proper Attire for Pesticide Application).

- What other safety precautions need to be taken with this chemical?
- When is it safe for workers to go back into the fields?

That time is known as \_\_\_\_\_

- What can be used to help alleviate heat stress when PPE is required during extremely warm and humid weather?

#### **About the Search for Safety Mannequins**

- **PAPA** (Proper Attire for Pesticide Applications)\*
- **MAMA** (Machinery Applications and Mechanical Actions)\*
- **KID** (Keep Injuries Down)
- They can all wear the **SAFE-T-KAP** (Safety Awareness for Everyone through Knowledge, Attitude, and Practice)

\* Originally, "Protection Against Pesticide Accidents" and "Mothers Against Machinery Accidents" -- however, the current trend among safety professionals is not to use the term "accident" since it implies that nothing could have been done to prevent it.

**Florida AgSafe --- [www.flagsafe.ufl.edu](http://www.flagsafe.ufl.edu)**



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**Tractors and Machinery**

Small Tractor Demo:

- a) Hitching above the drawbar makes it easier for the tractor to:
- Why can't a person escape from a rear overturn?
- b) Use of the seatbelt and ROPS showed that the operator would be \_\_\_\_\_ in the event of an overturn.
- c) Pictures are provided showing transporting of Large Round Bales. Which one shows an incorrect procedure? \_\_\_\_\_. What is the hazard?
- d) Explain the significance of the statement 'short-cuts do not save time when put in the perspective of taking risks.' (See MAMA. Do item 3 of "You May Be Quick" exercise first.)
- e) What is needed when a tractor is driven on the public roads?
- What color is it *supposed* to be?
- This is used for vehicles that travel less than \_\_\_\_\_ miles per hour?
- f) In the publication, Safer Tractor Operations for Agricultural Employers (<http://edis.ifas.ufl.edu/ae195>), what is included with the operator checklist that will be beneficial to an employer?
- g) The instructional seat is fine when used \_\_\_\_\_. It should not be used for \_\_\_\_\_.
- h) *Home in One Piece* is the story of John Thompson. What happened to John?



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**Machine and Reaction Time Activity**

You May Be Quick...  
*But Machines Are Quicker!*

1. My reaction time was \_\_\_\_\_ seconds.  
My height is \_\_\_\_\_.
  
2. For each of the following identify what would have happened to you in that amount of time:
  - a) In that amount of time, how much 'length' would have been entangled in a 6" auger at 400 rpm. \_\_\_\_\_
  - b) In that amount of time, how much 'length' would have been pulled into a belt and pulley traveling at 66 feet per second? \_\_\_\_\_
  - c) In that amount of time, how much 'length' would have been pulled into a power take-off shaft rotating at 1000 rpm? \_\_\_\_\_
  - d) In that amount of time, how much 'length' would have been pulled into a PTO traveling at the slower speed of 540 rpm? \_\_\_\_\_
  - e) I would have ben cut \_\_\_\_\_ times by the rotary lawn mower.
  
3. One thing that I routinely do by taking a short cut is:  
  
This shortcut "saves" me an estimated \_\_\_\_\_ seconds each time I do this task.  
100 repetitions of this task would save a total of \_\_\_\_\_ minutes.  
Is the risk taken worth the time supposedly "saved"?

**Machines have no memory and no conscience...  
...They don't care who you are or what they cut!**



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**Tractor Hazard ID Activity and Short-Cut Simulation Activity**

Hazards found on the tractor (set up for this lab).

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

For the short-cut simulation: it took me \_\_\_\_\_ seconds to walk around the tractor and \_\_\_\_\_ seconds to step over the simulated PTO hazard. Thus, I "saved" \_\_\_\_\_ seconds by taking the short-cut. For 100 repetitions, I would have saved a total of \_\_\_\_\_ minutes! Yet, for every 100 of those times I would have put myself at serious risk for \_\_\_\_\_ or death.

$$\frac{\boxed{\phantom{000}} \text{ seconds saved} \times 100 \text{ repetitions}}{60 \text{ seconds in a minute}} = \boxed{\phantom{000}} \text{ minutes}$$