

Hazard Mapping in the Ag Classroom

Objectives:

- To examine the hazards in agricultural production.
- To identify and locate hazards so that those hazards can be targeted for elimination.
- To embrace a participatory process that involves as many students as possible.
- To respect the vast array of skill, experience and know-how that students have about their farm jobs and their dangers.
- To collectively and creatively pool our knowledge and prioritize what problems to eliminate.

A Hazard Map is a visual representation of the workplace where there are hazards that could cause injuries or illness. The Hazard Mapping method draws on what students know from their farming experience. The Hazard Mapping approach works best when conducted among a small group of students with some similarity in their work and exposures.

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Hazard Mapping Process

The Hazard Mapping process can be used to identify risks at an entire farm and to specify hazards associated with an AREA, BUILDING, JOB CLASSIFICATION or PROCESS.

The farm-wide map can be used to show at a glance the major hazards throughout the farm.

After completing the farm-wide map, it may be obvious that a more detailed map of certain buildings would be helpful in “narrowing down” the processes, areas or jobs that have more dangerous hazards or where students exposures to hazards are greatest. There are a variety of risks on the farm that create opportunities for mapping.

To get more specific information, you can conduct another Hazard Mapping session to focus on a specific area, building, job classification or process. These area-specific Hazard Maps can be used to get more detailed information. For example, these area-specific maps might target:

- Farm sheds
- Confinement operations
- Feeding operation
- Machinery and small equipment
- Manure pits
- Grain silos
- Chemical storage area

Selection of Hazard Map

In order to facilitate the learning process and ensure that students are offered a variety of facilities please consider the following.

- 1) Count off numbers from 1-8, to form the group. Students will choose from the list above and conduct exercises.
- 2) Pull names from “hat” with the area- specific map names i.e. Farm Sheds, Confinement, etc.

****Please note each team should have no more than 8 members to ensure maximum participation.****

Use of Participatory Learning in Hazard Mapping

Basic Structure

The participatory learning method is based on a series of problem-solving activities. A hazard activity can take from 45 minutes to an hour. Each activity has a common basic structure:

- Small Group Tasks
- Report-Back
- Summary

1. **Small Group Tasks:** The training always begins with groups working together at their tables in groups of 4-5 students (a maximum of 8). Each hazard mapping activity has a task, or set of tasks, for the groups to work on.

2. **Report-Back:** For each hazard activity, the group selects

- 1) person to sketch floor plan on graph paper
- 2) a scribe who takes notes on the small group discussion and reports back to the class as a whole.

During the report-back, the scribe informs the entire class as to how his or her group solved the particular problem. The trainer records each scribe's report-back on large pads of paper in front of the class so that everyone can refer to them.

3. **Summary:** Before the discussion drifts too far, the trainer needs to bring it all together during the summary. Here, the trainer highlights the key points of the hazard activity and brings up any problems or points that may have been overlooked during the report-back.

Three Learning Exchanges in Hazard Mapping

The AgriSafe Hazard Mapping activity is based on the idea that every training is a place where learning is shared. Retention of information is enhanced when students are active participants. Learning is not a one-way street that runs from trainer to worker. Rather this approach is a structured procedure that allows us to share information. It is based on three learning exchanges:

- **Student-to-Student**
- **Student-to-Trainer**
- **Trainer-to-Student**

Student-to-Student: Most of us learn best from each other. This activity is set up in such a way as to make the exchange a key element of the training. The student –to-student exchange allows participants to learn from each other by identifying hazards in their small groups.

Student-to-Trainer: Lecture-style training assumes that the trainer knows all the answers. It is understood that the trainers also have a lot to learn and this is the purpose of the student-to-trainer exchange. It occurs during the report-back and it is designed to give the trainer an opportunity to learn from the participants.

Trainer-to-Student: This is the trainer’s opportunity to clear up any confusion and make points they think are key. By waiting until the summary section, trainers know better what students need to know.

Active Learning

The model is based first on the assumption that the learner’s active involvement in the learning process is essential. Instructors are expected to serve not only as teachers but also as facilitators of learning. Instructors may manage the learning process by engaging learners in a variety of activities that lead students to an understanding of content and development for application in other areas.

Consider this OSHA resource for training ideas:

Resource for Development and Delivery of Training to Workers
(OSHA 3824 - 2015) (English: [PDF](#)* [Order Now](#)).

The AgriSafe Factsheet Reading Method

The process described below focuses everyone on the important information in the AgriSafe factsheets.

The process is as follows:

- **First, select a scribe for this Task.**

Each of you will be assigned a small number of AgriSafe factsheets to read. You will then share the factsheet information with your table.

- **Your trainer will assign your individual factsheets this way:**
- **Starting with the scribe and moving to the left, count out loud from one to five. Keep going around the table until all numbers (factsheets) are distributed. The assigned numbers correspond to Factsheets 1 through 5 on the following pages.**

Five AgriSafe Fact Sheets

1. Zoonotic Disease
2. Heat Related Illness
3. Respirator Selection Guide
4. Head to Toe PPE
5. Hearing Protection

If time allows, once everyone has read their assigned factsheets individually, the instructor will ask what they have learned.

Three Student Activities

Activity #1

As a classroom, list the hazards commonly associated with the type of farming operation in which you work. Be prepared to explain how each item constitutes a hazard at your farm.

Expected Outcome: Participants will be able to identify potential hazards and ways to reduce harmful risks while performing duties in agricultural environments.

Activity #2

In your groups, choose a scribe and review the AgriSafe factsheets. The factsheets will help you identify the areas on your farm where injuries and illness are greatest.

Then, based on your own experience and the factsheets, use the sheet of paper and markers and follow steps 1 through 3 below to help create one Hazard Map for your group. Write large and use the entire sheet of paper for your map. Use the factsheets to help you label and describe the specific hazard areas.

Step 1: Make a drawing on the sheet of paper that shows the basic layout of your farm or specific area your group has been assigned.

Step 2: Identify the hazards in each area using a color-coded circle on the map.

Step 3: Based on your map, make a list of the hazards that concern you the most and be ready to tell us why these hazards are a concern for your group.

Expected Outcome: In smaller group settings, participants will be able to actively learn through various roles such as the scribe, the reporter and those that provide examples and feedback on activities. These various methods of participation will reinforce the lesson objectives.

Activity #3

In your groups, choose a scribe. Answer the following questions and be prepared to report your answers to the group.

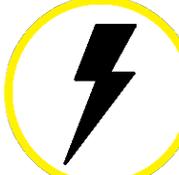
1. What were the positive aspects of working in a group while creating this map?
2. What would be the advantages of using Hazard Maps at your farm workplace?

Expected Outcome: This summary exercise will encourage more participation from students in a smaller setting. These conversations in general terms should help each individual consider environments in which they are exposed to potential hazards.

Identify Hazards (step by step approach)

Steps	Pg	Who is Responsible	Time	Materials
Pre-Test		Trainer	5	Surveymonkey link
Review the objectives of hazard mapping	1	Trainer	3	Projector or board
Explain the difference between a hazard and risk		Trainer	3	Projector or board
Review OSHA Whistle Blower policy and Worker Rights		Trainer	3	Share via projector https://www.osha.gov/OshDoc/data/General_Facts/whistleblower_rights.pdf https://www.osha.gov/Publications/osha3165.pdf
Create Groups of 4-8 students	2	Trainer	3	-
Assign farm specific area or farm wide mapping to groups	2	Group or Trainer	3	Pictures of : -Farm sheds -Confinement operations -Feeding operation -Machinery and small equipment -Manure pits -Grain silos -Chemical storage area
Assign a Scribe	3	Trainer	3	-
Distribute 1-2 factsheets to each group and allow group to read factsheets	3	Trainer	10	Zoonotic Disease Heat Related Illness Respirator Selection Guide Head to Toe PPE Hearing Protection
Discuss lessons learned from fact sheet as a classroom	5	Class	10	Projector or board
Activity 1 : Discuss General Hazards	6	Class	10	Factsheets
Activity 2: Create a Hazard Map (s)	6	Groups	20	Sticker sheet with icons, large graph paper, markers
Activity 3: Reflection of Mapping Process	6	Groups	10	Large sheets for recording
Post-Test		Trainer	5	Surveymonkey link

AgriSafe Key for Hazard Icons

	Low Hazard	Med Hazard	High Hazard
Livestock			
Chemical			
Respiratory			
Ergonomic			
Hearing			
Electrical			
General Hazard			