This webinar is adapted from the training curriculum *Seguridad en las Lecherías: Immigrant Dairy Worker Health and Safety Training* developed by the National Farm Medicine Center and Migrant Clinicians Network.
We will learn:

- How workers are exposed to chemicals
- Health effects of chemical exposure
- Basic safety practices
- How community health workers can promote chemical safety at work
- How to train workers about chemical safety
Despite the plant being sealed, the forklifts remained in use.
Different Forms of Chemicals

Solid  |  Liquid  |  Gas

If a worker is exposed to chemicals at work, what types of health effects might they experience?
Physical Hazard

Health Hazard
Do you know someone who has been harmed or become ill from working with chemicals?

Each day thousands of workers are exposed to chemicals in the workplace
How can chemicals enter the body? Select all that apply
Which of the following contributes to the way in which chemicals affect an individual? Select all that apply.
Other factors that impact how chemicals harm you

- Type of chemical
- Gender
- Age
- Health condition
Ammonia

Routes of Exposure
How can workers protect themselves from ammonia exposure?

Personal protective equipment for ammonia (PPE)
Personal protective equipment for detergents
Other common exposures

Pesticide application in the field
Workers are required to receive chemical safety training in a language they understand.
Labels

Safety Data Sheet (SDS)
Which of the following information is provided in the Safety Data Sheet?
Section 3: Composition/Information on Ingredients

Chemical Name: Ammonia, Anhydrous
CAS Number: 7664-41-7
Chemical Family: Ammonia
Composition: 100%

Section 4: First Aid Measures

If Inhaled: Immediately remove person to fresh air and keep comfortable for breathing. In case of severe exposure or if respirator becomes necessary, medical attention should be sought. If not breathing, administer artificial respiration. If breathing is difficult, administer supplemental oxygen, if available.

If Skin Contact: Immediately remove contaminated clothing. Clothing that has been in contact with liquid ammonia may cause skin to be cool. Discontinue clothing from skin before removing. Wash skin with copious amounts of tepid water for a minimum of 20 minutes. Do not rub or apply topical, exclusive compounds, such as ointments, cements, etc., on affected area. For liquid ammonia contact, seek immediate medical attention. For severe vapor contact or if irritation persists, seek medical attention.

If In Eyes: Immediately rinse continuously with copious amounts of tepid water for a minimum of 10 minutes. Eyelids should be held apart and away from eye while flushing. Do not rub or apply topical, exclusive compounds, such as ointments, cements, etc., on affected area. Seek medical attention.

If SWALLOWED: Rinse mouth. Do not induce vomiting. If conscious, give large amounts of water to drink. May drink orange juice, citrus juice or diluted vinegar (1:4) to counteract ammonia. If unconscious, do not give anything by mouth. Seek medical attention.

NOTE TO PHYSICIAN: Respiratory injury may appear as a delayed phenomenon. Pulmonary edema may require chemical lavage. Supportive treatment with necessary ventilation actions, including oxygen, may warrant consideration.

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Anhydrous Ammonia
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Section 8: Exposure Controls/Personal Protection

Permissible Limits for Ammonia (Vapor):

<table>
<thead>
<tr>
<th>Source</th>
<th>Permissible Limit (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSHA</td>
<td>50 ppm</td>
</tr>
<tr>
<td>NIOSH</td>
<td>35 mg/m³ PEL</td>
</tr>
<tr>
<td>ACGIH</td>
<td>25 ppm, 11 mg/m³ REL</td>
</tr>
<tr>
<td></td>
<td>30 ppm, 11 mg/m³ REL</td>
</tr>
<tr>
<td></td>
<td>35 ppm, 11 mg/m³ REL</td>
</tr>
</tbody>
</table>

Protective Equipment:

EYE PROTECTION: Chemical splash goggles should be worn when handling anhydrous ammonia. A face shield can be worn over chemical splash goggles as additional protection. Do not wear contact lenses when handling anhydrous ammonia. Refer to 29 CFR 1910.133 for OSHA eye protection requirements.

SKIN PROTECTION: Ammonia impervious gloves and clothing (such as neoprene, butyl, and Teflon) should be worn to prevent contact during normal operations, such as loading/unloading and transfers. Chemical boots can be worn as additional protection.

RESPIRATORY PROTECTION: Respiratory protection approved by NIOSH for ammonia must be used when applicable safety and health exposure limits are exceeded. For escape in emergencies, NIOSH approved respiratory protection should be used, such as a full-face gas mask and canister/canisters approved for ammonia or SCBA. A positive pressure SCBA is required for entry into ammonia atmospheres at or above 300 ppm (IDLH).

Refer to 29 CFR 1910.134 and ANSI Z88.2 for OSHA respiratory protection requirements. Also refer to 29 CFR 1910.131 for respiratory protection requirements at bulk installations.

VENTILATION: Local exhaust should be sufficient to keep ammonia vapor below applicable exposure standards.

For a Hazardous Material Release Response: Level A and/or Level B ensemble including positive-pressure SCBA should be used. A positive pressure SCBA is required for entry into ammonia atmospheres at or above 300 ppm (IDLH).
Call 911

- Address of the work place
- Condition of sick or injured worker
- Name of the chemical or explanation of the accident
The role of CHWs in promoting chemical safety at work.

How to train workers about chemical safety

• Trainer guide
• Activities
  ✓ Hand lotion
  ✓ Games with prizes for the winner
• Demonstrations
  ✓ Use Personal Protective Equipment
  ✓ How to put on and take off gloves
  ✓ How to wash hands
  ✓ Bring copies of labels and Safety Data Sheets
You can do it!

Learn:
- Policies and procedures.
- Risks.
- How to protect yourself.
- What to do in an emergency.
- Attend trainings.

Use:
- Personal Protective Equipment
- Appropriate clothes and shoes.

Practice:
- Stop, look, and think safely before doing.
- Report any dangers or injuries.
Post test polling questions

Which of the following can contribute to the way in which chemicals affect an individual? Select all that apply.

a) Body size  
b) Body temperature  
c) Age  
d) Duration of exposure

Workers are required to receive chemical safety training in a language they understand.

• True
• False

Which of the following information is provided in the Safety Data Sheets?

a) First Aid measures  
b) Handling and storage  
c) Symptoms of exposure  
d) Instructions for disposal  
e) All of the above

Resources

• Safety and Health on the Farm- It’s your right and It’s the Law

• OSHA webpage- Hazard Communication Standard
Thank you for your participation

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References


This presentation is adapted from Lesson 5: **Working Safely with Chemicals**, an educational module from *Seguridad en las Lecherías: Immigrant Dairy Worker Health and Safety Training Curriculum*.  
http://www.migrantclinician.org/seguridad

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