Filling and Mixing Chapter 26

- Give reasons why risks are high during mixing and loading
- When should you mix/load pesticides and why?
- Identify features of a good mixing/loading site
- Explain why using water with a high pH can be a problem and what you can do.
- Describe the porper selection and storage of tools used for measuring/opening containers
- Describe how exposure concerns during mixing and loading affect PPE selection.
- Tell how to open pesticide containers and pour out contents.
- Describe the purpose and benefits of closed handling systems.
- When emptying containers
  - What are the benefits of emptyng completely and consequences of not
  - List precautions you should take
  - Where can you find the requirement for emptying/rinsing
  - Outline the steps for triple rinsing, pressure rinsing, plastic containers, bags
- What should you do with pesticide containers after mixing/loading?
- Determine which label directions to follow if you mix two or more pesticides together
- List 4 conditions that must exist before you would mix 2 pesticides
- Describe benefits and potential problems of mixing 2 or more pesticides
- Distinguish between compatible and incompatible pesticides
- Physical and chemical compatibility
  - Define each
  - Provide examples

Objectives

- Learn how, when and where to mix concentrated pesticides
- Understand importance of protecting environment from spills and safety measures to take
- How to determine compatibility of mixtures

Risks in mixing and loading

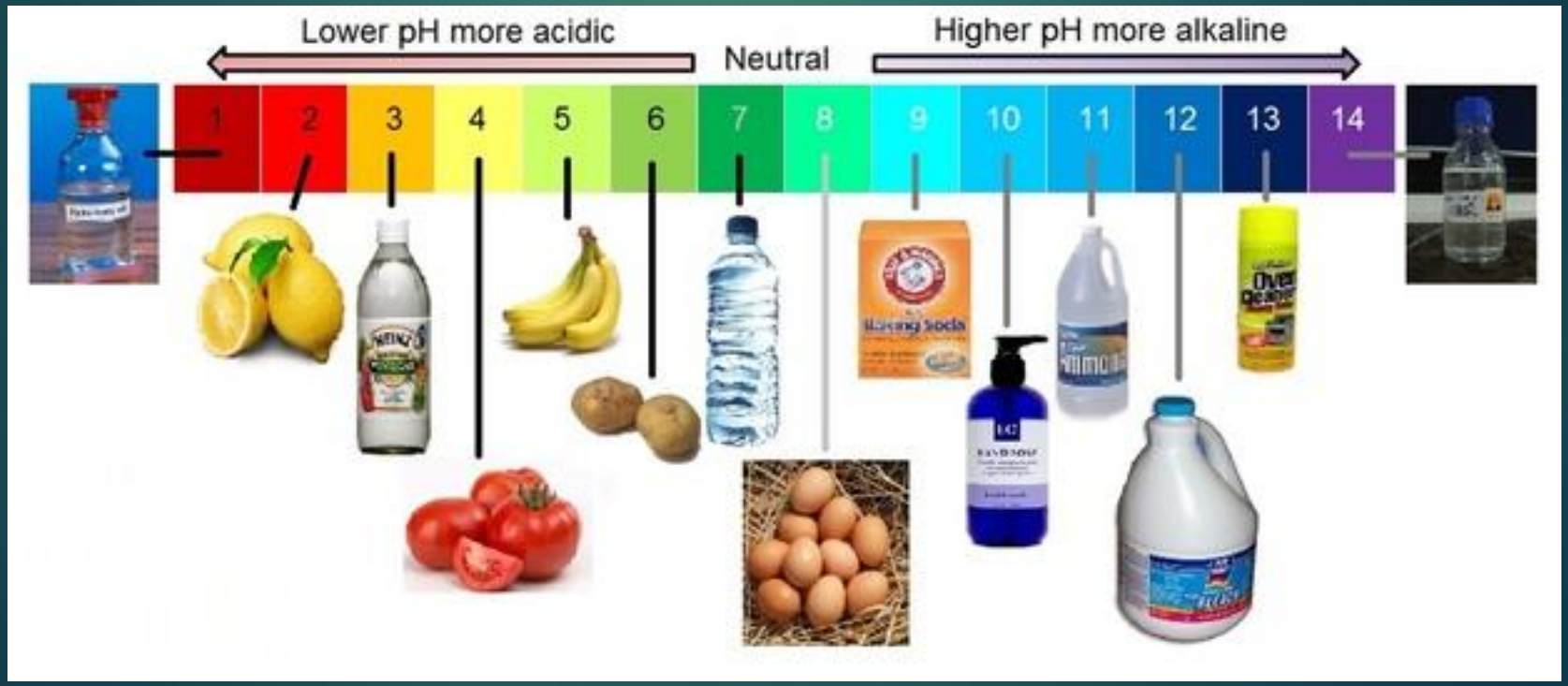
- **Most concentrated form, more risk of poisoning**
- Handling and pouring from open containers
- Water source can be contaminated
- Pesticide spills - concentrate

When and Where…

- First! Read the label!
- Mix/load just before you are ready to apply
- Never in a home
- Mix away from people, livestock, and pets
- Mix at a place where there is no danger of spill contaminating a water source or groundwater. If near a pond – grade the soil away from the pond
- Concrete pads with berms

Water source?

- If pH is higher than 8.0, pesticides can break down.
- Check pH with pH meter or test strips
- Use buffering agent to reduce pH to 4-6



The Safe Applicator

- Use plastic measuring tools
- Use PPE listed on label for mixing and loading
- Have water, soap, single use towels, and spare coveralls
- Open bags with sharp knives/scissors – don't tear open
- Keep head higher than fill hole in sprayer and upwind

Closed handling systems:

- Transfer concentrate to tank without coming into contact
  - Gravity or suction systems
  - Others include WSB – do not break bags!

- Decreased occurrence of spills
- More accurate measurement

The Safe Applicator

- Close each container immediately after measuring
- Measure accurately
- Keep all measuring devices in the pesticide storage
- Only mix what you need
- Use air gap or back siphon device

Triple Rinsing!

1. Let container drain,
2. Fill 20% full
3. Close lid and shake
4. Let drain in tank
5. Repeat 2 more times rinsing cap

- Puncture rinsed container – date
- Pressure rinsing
  30 sec = triple rinse, for ≤ 5 gal
- Empty Bags
  cut other end, shake into tank

Mixing 2 or more pesticides

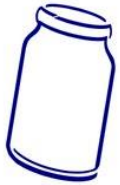
- Check label for
  - Order of mixing
  - Compatibility
  - Application methods allowed
- Comply with most restrictive label for PPE, REI, PHI

Compatibility

- **Chemical**
  - Phytotoxicity
  - Change in toxicity, more or less
  - More common with water quality issues or mixing with fertilizers
- **Physical**
  - Lumps and uneven mixing

Jar Test for Compatibility

Mix proportionate amounts of all products



1. Fill jar ½ full with water or carrier
2. Add products one at a time in proper order
3. Shake jar and see what happens
4. Allow jar to stand for 10-15 minutes.
5. Products are not compatible if have a precipitate, heat is given off, or products separate into layers

W-A-L-E

Sequence for adding pesticides to tank

- Fill tank to ¼ full

- **W** = Wettables and WDG
- **A** = Agitate until dispersed, then add more water to 90%
- **L** = Liquid suspensions (F or L), ME, S, SP, adjuvants
- **E** = Emulsifiable concentrates

- Top off tank with remaining water