

Module 6 — Applicator Safety, Transport, Spills & Emergency Response

CORE exam · 8 practice questions · Safe transport, mix-and-load discipline, backflow prevention, the three Cs of spill response, heat illness, and drone-specific battery and site hazards.

Key numbers & facts to memorise

Transport	Cargo area, upright, secured, original labelled containers — never the cab
Backflow	Keep fill hose above the tank water line, or use a check valve
Spill response	Control → Contain → Clean up. Never flush to drain or water
ODA incidents	614-728-6987
Batteries	Never charge unattended; retire swollen or damaged packs

Transporting pesticides legally and safely

Most pesticide incidents that make the local news happen on the road, not in the field. Transport product in **original, labelled containers**, secured upright so containers cannot tip, slide or be punctured, and carried in the **cargo area — never in the passenger cab**, where a leak fills the space you are breathing. Separate pesticides from food, feed, seed, fertiliser and PPE, and never transport them with passengers or animals in the same compartment.

Inspect before you drive. Check caps, seams and bungs; look for weeping or crusted residue around closures; make sure the load is blocked so it cannot shift under braking. Carry a basic spill kit in the vehicle — absorbent, a scoop, a sealable labelled container, gloves, eye protection, clean water and soap — because a spill twenty miles from the shop is the exact scenario the kit exists for. Never leave a loaded vehicle unattended and unlocked where the public can reach the product.

Larger quantities may trigger **Department of Transportation hazardous-materials** requirements including shipping papers, placarding and driver training. Thresholds depend on the product's hazard class and the quantity carried; if you routinely move drums or totes, confirm your obligations rather than assuming farm use exempts you. The relevant exam point is simpler: know that transport rules exist, that original containers and secure upright loading are required, and that the cab is not a storage area.

Mixing, loading and protecting the water source

Mixing and loading is the highest-exposure task of the day because you are handling undiluted concentrate. Do it **outdoors or in a well-ventilated area**, standing upwind, wearing the label's mixing PPE (which is often stricter than the application PPE), at a height that keeps splashes below your face. Use dedicated measuring equipment that never goes back to household use, and pour at a controlled rate rather than glugging from a full jug.

Site selection matters as much as technique. Mix and load **away from wells, sinkholes, tile inlets, ditches and surface water**, and preferably on a surface where a spill can be recovered rather than soaking straight into a gravel drive next to a wellhead. Rotating your mix/load location across a field prevents the concentration of residues that comes from using the same spot every time.

Prevent **back-siphoning** — the most under-appreciated contamination pathway on any farm. Keep the fill hose end **above the water line in the tank (an air gap)**, or use an approved anti-backflow device or check valve. Never submerge the fill hose in the mix. If the pump loses pressure while the hose is submerged, tank contents can be drawn back into the well or hydrant system, which turns a routine fill into a drinking-water contamination event.

The three Cs: control, contain, clean up

Spill response is a rehearsed sequence, not an improvisation. **Control**: protect yourself first with PPE, stop the source — upright the container, close the valve, plug the leak — and keep people, children and animals well back. **Contain**: prevent spread using absorbent material, a soil or sand berm, or a shovelled dike, working to keep the spill away from any drain, ditch, tile inlet or water body. **Clean up**: sweep or absorb the material, place it in a sealable, labelled container, and dispose of it as the label directs; decontaminate the surface and your equipment.

Never rinse a spill into a storm drain, ditch, waterway or field tile — that converts a contained problem into a reportable water-contamination event. Do not walk away from a spill to fetch supplies if you can avoid it, which is the practical argument for a kit in every vehicle. Document what happened: product, quantity, location, time, what you did, and photographs. That record protects you later far more than it exposes you.

Know when to escalate. Significant spills, spills that reach or threaten water, and any spill involving injury require notification. In Ohio, contact **ODA Pesticide & Fertilizer Regulation at 614-728-6987**; use **CHEMTREC 1-800-424-9300** for transport emergencies, **Poison Help 1-800-222-1222** for exposure, and **911** for anything with immediate injury or fire. Post these numbers in the shop and save them in the phone you actually carry.

Heat, fatigue and drone-specific hazards

PPE and August do not cooperate. Wearing chemical-resistant clothing suppresses evaporative cooling and sharply raises the risk of **heat exhaustion and heat stroke**, whose early symptoms — headache, nausea, dizziness, weakness — are nearly identical to early pesticide poisoning. Because you cannot reliably tell them apart in the field, treat the symptoms seriously either way: stop, get to shade, decontaminate, hydrate, and get medical evaluation if symptoms do not resolve quickly. Schedule spraying for cooler hours, drink before you are thirsty, and rotate crew.

Fatigue is the quiet risk in drone operations, because the work rewards long days during narrow weather windows. Sustained attention degrades measurably after hours of repetitive flight lines, and the errors it produces — a missed buffer, a wrong tank, a forgotten flow shut-off at a turn — are exactly the errors with regulatory consequences. Build in breaks and a hard stop, and use checklists precisely because checklists work when attention does not.

Drone-specific hazards deserve their own habits. **Lithium polymer batteries** should be charged per manufacturer guidance, never unattended, never near flammables, with a suitable extinguisher available; swollen, punctured or damaged packs must be retired from service rather than nursed through one more

field. Spinning propellers on agricultural-scale aircraft cause serious lacerations — establish and enforce a takeoff/landing exclusion zone. Add power lines, guy wires, grain legs, irrigation pivots and overhead cables to your site survey, and treat the mixing station, the landing pad and the tank as three separate contamination-control zones so you are not carrying concentrate onto the controller you hold all day.

Practice questions

Answer these closed-book, then check against the answer key that follows. Ohio requires 70% to pass.

1. Pesticides being transported should be carried:

- A) In the passenger cab within reach
- B) Secured upright in the cargo area in original labelled containers
- C) Loose in the truck bed
- D) Mixed with feed to save space

2. To prevent back-siphoning while filling a spray tank you should:

- A) Submerge the fill hose fully
- B) Keep the hose end above the tank water line, or use an anti-backflow device
- C) Fill as fast as possible
- D) Remove all screens and valves

3. The correct order of spill response is:

- A) Clean up, contain, control
- B) Control, contain, clean up
- C) Contain, clean up, control
- D) Report, rinse, resume

4. A spill should never be:

- A) Contained with absorbent
- B) Photographed and documented
- C) Washed into a storm drain, ditch, tile inlet or waterway
- D) Reported when significant

5. Mixing and loading should be done:

- A) Next to the wellhead for convenience
- B) Away from wells, sinkholes, tile inlets and surface water
- C) Inside the closed cab
- D) Downwind of yourself

6. Early heat illness and early pesticide poisoning are difficult to distinguish because:

- A) Both cause frostbite
- B) Both can cause headache, nausea, dizziness and weakness
- C) Neither has symptoms
- D) Both cause fever only

7. A swollen lithium polymer drone battery should be:

- A) Charged more slowly
- B) Retired from service and disposed of properly
- C) Punctured to relieve pressure
- D) Used until it fails

8. The Ohio number for pesticide regulatory questions and incidents is:

- A) 614-728-6987 (ODA Pesticide & Fertilizer Regulation)
- B) 1-800-222-1222
- C) 1-800-424-9300
- D) 614-292-4070

Answer key & explanations

- 1. B)** Secured upright in the cargo area in original labelled containers — Cargo area only, secured upright, original labelled containers, separated from food, feed and seed.
- 2. B)** Keep the hose end above the tank water line, or use an anti-backflow device — An air gap or approved check valve prevents tank contents being drawn back into the water source if pressure drops.
- 3. B)** Control, contain, clean up — Control the source, contain the spread away from water, then clean up into a sealable labelled container.
- 4. C)** Washed into a storm drain, ditch, tile inlet or waterway — Flushing a spill to water turns a contained incident into a reportable contamination event.
- 5. B)** Away from wells, sinkholes, tile inlets and surface water — Keep mix/load sites away from water access points, and rotate locations to avoid concentrating residues.
- 6. B)** Both can cause headache, nausea, dizziness and weakness — Because the presentations overlap, treat symptoms seriously: stop work, cool, decontaminate and seek evaluation.
- 7. B)** Retired from service and disposed of properly — Swollen or damaged packs are a fire risk and must be removed from service, never nursed along.
- 8. A)** 614-728-6987 (ODA Pesticide & Fertilizer Regulation) — ODA Pesticide & Fertilizer Regulation: 614-728-6987. Poison Help is 1-800-222-1222; CHEMTREC 1-800-424-9300; OSU PSEP 614-292-4070.