



Tailgate Safety Training for Landscaping and Horticultural Services

Agricultural Safety Program, 590 Woody Hayes Drive, Columbus, OH 43210

Rollovers and Rollover Protective Structures (ROPS)

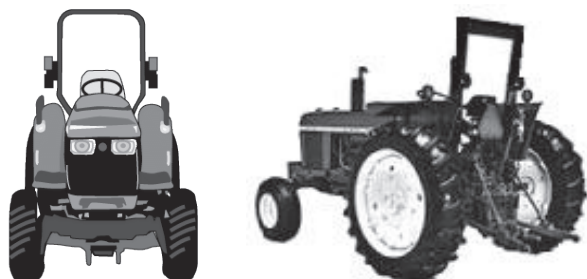
Objective: Describe the risk of tractor rollovers and effective means to avoid rollovers and minimize rollover injuries.

How to Use This Module

Tractor rollovers are a critical danger for many landscaping and horticultural services workers. For this module:

- Review the information below on rollovers, ROPS, and means to prevent rollovers.
- Ask your supervisor to show you tractors with ROPS.
- Ask your supervisor to demonstrate a folding ROPS.
- Ask co-workers or supervisors to describe any rollovers they have experienced.
- Review the important points.
- Take the True/False quiz to check your learning.

Background



Tractor rollovers account for 50% of tractor-related deaths in the United States. Distracted operators, speed, and rough or uneven ground are leading causes of tractor rollover. ROPS do not prevent rollovers, but they are 99.9% effective in preventing death or serious injury.

The Occupational Safety and Health Administration (OSHA) requires ROPS and seat belts to be installed on all tractors over 20 HP operated by employees.

Rollover Protective Structures (ROPS)

Rollover protective structures (ROPS) became available in the mid-1960s. ROPS were not available for all new tractors until the mid-1970s. However, ROPS were not standard equipment on new tractors until 1985.

Many tractors without ROPS are still in use. They contribute to the fatality rate because they are not ROPS- and seat belt-equipped. Use of ROPS and seat belts are 99.9% effective in preventing deaths due to tractor overturns.

There are three types of rollover protective structures:

- **Rollover protective frame.** Either two or four post frames are securely mounted to the main body of the tractor. Use the provided seat belt to keep the operator within the protected area.



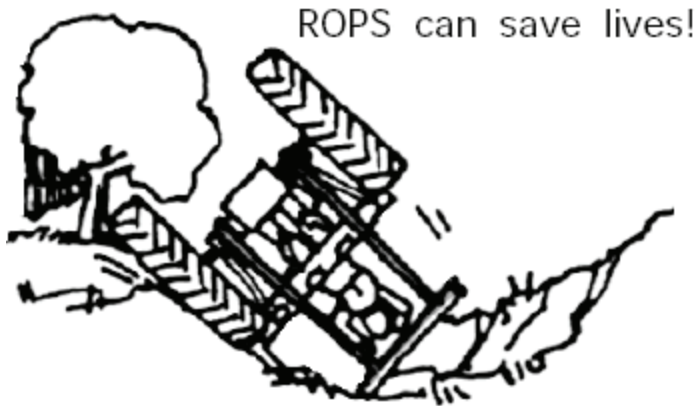
- **Folding ROPS.** The top portion of the ROPS folds down so less overhead clearance is needed. This allows for low-clearance areas like orchards or low overhead doors.
- **Rollover protective enclosure.** A rollover protective enclosure utilizes the protective frame but totally encloses the frame with metal and glass. Seat belts are provided and must be used to contain the operator within the protected area. In addition, a cab enclosure gives protection from weather, dust, chemicals, noise, and vibration.

Enclosures on older tractors were designed for operator comfort, not for rollover protection. They are not considered ROPS. ROPS must meet regulations and standards that certify that they provide adequate protection in a tractor rollover. To find out if a frame or enclosure is certified, look for a certification label, contact the manufacturer, or check for the presence of a manufacturer-installed seat belt.

For tractors not equipped with a ROPS, check with the manufacturer or dealer for the availability of ROPS retrofit kits. If they are available, the tractor should be retrofitted. If kits are not available, the tractor should not be operated. Install and use seat belts on tractors with ROPS. Seat belts ensure that the operator stays within the zone of protection offered by the ROPS during a mishap. Seat belts should not be used on tractors without ROPS.

Reducing the Risk of a Side Rollover

- Set wheels as far apart as possible.
- Lock the brake pedals together before high-speed road travel.
- Match speed to operating conditions and loads. Do not let the front wheels bounce.
- Slow down before turning.
- Use engine braking when going downhill.
- Avoid crossing steep slopes. Watch for depressions on the downhill side and bumps on the uphill side. Turn downhill, not uphill, if stability becomes a problem.
- Stay 10 feet or more away from ditches and steep slopes. Slow down to maintain control.
- Stay 10 feet or more from a riverbank. The bank may be steep. Slow down to maintain control.
- Keep front-end loader buckets as low as possible when moving.
- If the right front tire goes off the road into the ditch, turn downward or hold steady and slowly recover. Do not attempt to turn sharply back onto the roadway.



Reducing the Risk for Rear Overturn

- Always hitch loads at the drawbar.
- Use front weights to increase tractor stability.
- Start forward motion slowly and change speed gradually.
- If possible, avoid backing downhill.
- Drive around ditches.
- Back out or be towed out of ditches or mud.

Review These Important Points

- Install and use seat belts on tractors with ROPS.
- ROPS do not prevent rollovers from occurring.
- Most rollovers involve tractor speed, operator error, or unsafe driving conditions.
- Follow safety steps to prevent rollovers.

About These Modules

The author team for the training modules in the landscape and horticultural tailgate training series includes Dee Jepsen, Program Director, Agricultural Safety and Health, Ohio State University Extension; Michael Wonacott, Research Specialist, Vocational Education; Peter Ling, Greenhouse Specialist; and Thomas Bean, Agricultural Safety Specialist. Modules were developed with funding from the Occupational Safety and Health Administration, U.S. Department of Labor, Grant Number 46E3-HT09.

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture or the U.S. Department of Labor.

Answer Key: 1 = F, 2 = T, 3 = T, 4 = T, 5 = F.

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EXTENSION

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Name _____

True or False?

- | | | |
|--|---|---|
| 1. There are two types of rollover protective structures used on tractors. | T | F |
| 2. Seat belts are to be worn on tractors with ROPS. | T | F |
| 3. Fifty percent of all tractor-related deaths in the United States are caused by rollovers. | T | F |
| 4. To find out if a tractor frame or enclosure is certified, read label posted on the equipment. | T | F |
| 5. Turn uphill if stability becomes a problem on a slope. | T | F |