

Tripod orchard ladders are an important tool of the trade for workers who do pruning, thinning, and harvesting. However, use of orchard ladders has led to severe injuries and worker hospitalizations. From 2014 to 2018, **43 Washington orchard workers were hospitalized due to ladder falls**. Over half of these workers were unable to work for a year or more after their injury.

Ladder falls in orchards are preventable! Training on proper set up, correct use, and inspection of orchard ladders can keep workers safe.

Worker falls from orchard ladder while overreaching

A worker was thinning apples from the fourth rung of an 8-foot orchard ladder when she lost her balance and fell to the ground, breaking her right collar bone. She was taken to the local hospital in an ambulance and later transported by helicopter to Seattle where she had surgery to repair her collar bone. Investigators believe overreaching may have led to the fall.



Worker breaks wrist after fall from orchard ladder

An experienced worker was using an orchard ladder to prune trees on sloped ground. The worker climbed the ladder to the fifth or sixth rung of an 8-foot ladder when he lost his balance and fell off. The worker landed on his right wrist and fractured it. His wrist required multiple surgeries to repair. Investigators found that the ladder was not set up properly.



Traumatic fall from orchard ladder

A worker fell from an orchard ladder while reaching to cut a branch. He landed on his chest and hit his head on frozen ground. He lost consciousness and was taken to the hospital in an ambulance. He suffered multiple traumatic injuries, including fractures to his nose, ribs, neck, and skull, and was placed in intensive care. He also suffered a spleen laceration, brain bleed, and an open face wound, and had to undergo surgery.

Investigators found that the ladder had been set up parallel to the tree instead of facing it. As the worker was reaching past the side rails to cut the branch, the ladder tipped in the opposite direction, causing him to fall.



Image: OSHA

Recommendations

Consider safer options.

Mobile work platforms are a safer alternative to orchard ladders, if used properly. Mobile work platforms allow workers to stand on a sturdy surface to perform their duties, and reduce fall hazards through the use of railings or other worker fall protection.

Training

Employers must train workers before they use ladders. Ladder training should be reviewed each year with workers.

Supervisors should do **spot checks** to make sure ladders are being used correctly, and **conduct retraining when needed.**

Training for safe orchard ladder use should include:

- **Safe set up.** Orchard ladders need the side rails and tripod pole to slightly penetrate the ground to function properly and remain stable. Avoid positioning over a hole or soft spot. The tripod pole must be positioned uphill when set up on uneven surfaces.
- **Stay centered.** Keep centered between the ladder's side rails and do not overreach. Re-position ladders when needed to avoid overreaching.
- **Three points of contact.** Always climb up and down facing the ladder using three points of contact.

Inspection

Ladders must be inspected before use. Remove a ladder from service if it does not pass inspection. Consider using an inspection checklist—DOSH's [ladder safety checklist tool](#) includes a section for orchard ladders.

Ladders

Store ladders out of the elements to avoid weathering.

PPE

Provide appropriate personal protective equipment (PPE) for working on ladders. Non-slip boots with a stiff sole and defined heel help prevent slipping.

Requirements

Training

- Employers must train workers to use ladders at the beginning of employment. Training must include proper use of ladders, including how to set a ladder and properly dismount with a full load. See [WAC 296-307-05503\(1\)](#)
- Employers must instruct workers to:
 - Not stand on the top two steps (the top cap and the next step down) of orchard ladders.
 - Not step off the ladder onto branches except onto the main crotch. See [WAC 296-307-05505](#)

Inspection

- Ladders must be checked for defects before use, and thoroughly inspected periodically. Ladders must be inspected immediately after the ladder tips over. See [WAC 296-307-05501\(1\)](#)

Ladders

- Orchard ladders longer than sixteen feet are prohibited. See [WAC 296-307-05505\(1\)](#)

Reporting

- Employers are required to contact DOSH within 8 hours of a workplace fatality or in-patient hospitalization of any employee and within 24 hours of a non-hospitalized amputation or loss of an eye of any employee. See [WAC 296-27-031](#)

Resources

Safety Standards for Agriculture, Chapter 296-307 WAC: <https://app.leg.wa.gov/wac/default.aspx?cite=296-307>

Safe Use of Tripod Orchard Ladders Fact Sheet—OSHA: www.osha.gov/sites/default/files/publications/OSHA3728.pdf

Protecting Workers from Tripod Orchard Ladder Injuries—OSHA Quick Card (English/Spanish): www.osha.gov/Publications/OSHA3705.pdf

Video: Orchard ladders: Life-changing injury stories.— Pacific Northwest Agricultural Safety and Health Center (Spanish): <https://www.youtube.com/watch?v=Y8w9JoiMrmw&feature=youtu.be>

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