

INCIDENT FACTS

REPORT #:

71-232-2023

REPORT DATE:

January 30, 2023

INCIDENT DATE:

September 8, 2022

WORKER:

32 years old

INDUSTRY:

Miscellaneous Crops Farming

OCCUPATION:

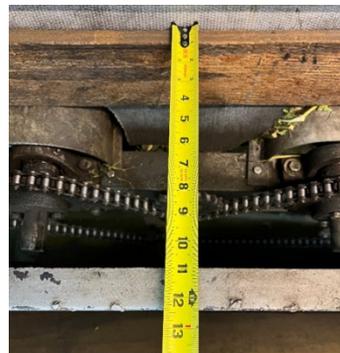
Hop Farm Worker

SCENE:

Indoor Hop Sorting Area

EVENT TYPE:

Amputation / Machine



Close up of 11-inch unguarded gap above chain and sprocket drive where worker reached in and mangled his hand.

[For a slideshow version, click here.](#)



This narrative was developed to alert employers and workers of a tragic incident and is based on preliminary data ONLY and does not represent final determinations regarding the nature of the incident or the cause of the injury. Developed by WA State Fatality Assessment and Control Evaluation (WA FACE) and the Division of Occupational Safety and Health (DOSH), WA State Dept. of Labor & Industries. WA FACE is supported in part by a grant from the National Institute for Occupational Safety and Health (NIOSH grant# 5U60OH008487). For more information visit www.lni.wa.gov/safety-health/safety-research/ongoing-projects/work-related-fatalities-face.

Farm Worker's Hand Mangled in Hop Harvester

SUMMARY

A 32-year-old hop farm worker mangled his hand in an employer-built hop harvester machine. He was a Spanish-speaking worker who started at the family-owned farm eight days earlier for the annual hop harvest. He worked the night shift as a machine mechanic's assistant.

The injury happened around 4 a.m. when the worker's shift was ending. Getting ready to clock out, he saw a long bine sticking out from the hop harvester's arm picker. The picker stripped leaves and stems from hop bines using a chain and sprocket drive that operated between 190 - 210 rpm. When the worker reached over into an open 11-inch gap above the picker to remove the bine, the energized rotating chain pulled his left hand in, shredded his work glove, and badly mangled his fingers and palm.

Co-workers gave first aid and drove him to the hospital, where doctors amputated his index and middle fingers and part of his thumb. He was hospitalized for ten days. Months later, he has not returned to work and needs more treatment for his physical and mental trauma.

Following the incident, investigators found:

- The hop harvester's arm picker had a horizontal steel mesh guard that was too low to prevent someone from reaching over into an 11-inch unguarded gap above the chain and sprocket drive.
- The worker did not follow his training from the employer to notify a lead mechanic, who was nearby, to perform lockout/tagout (LOTO) procedure requirements before cleaning out debris.

REQUIREMENTS

- Unless guarded by location, all sprocket wheels and chains must be enclosed. See [WAC 296-307-28030\(3\)](#)

RECOMMENDATIONS

FACE investigators concluded that to help prevent similar occurrences, employers should:

- If a machine cannot be guarded by distance and location, protect workers from hazards created by rotating or revolving parts by using one or more safeguarding methods. Make sure guards are:
 - Made of strong, durable materials, such as angle iron, solid metal, expanded metal, and wire mesh.
 - Securely fastened to the machine or the building structure if they cannot be attached to the machine.
 - Regularly inspected and maintained, or replaced if not in serviceable condition.
- Make sure guards protect workers by preventing hands or other body parts from reaching through, over, under, or around the guard into the hazard area; and preventing objects or debris from falling onto or being thrown towards a worker.
- Install warning signs on and near machines to remind workers of operating hazards and LOTO requirements written in a language all workers can understand.
- Conduct Job Hazard Analysis (JHA) to identify machine operation hazards and solutions before use.

RESOURCES

[Safeguarding Equipment and Protecting Employees from Amputations.](#) OSHA
[Machine Safety.](#) Washington State Department of Labor & Industries



Hop harvester machine in which worker mangled his hand trying to remove debris. Arrow shows gap above horizontal steel mesh guard and chain and sprocket drive where worker reached in. Note machine's lack of hazard warning and LOTO signage.