Colorado Face Investigation 92CO025

SUBJECT:

A farm owner/operator in Colorado died of suffocation when his clothing became entangled in the machinery he was attempting to adjust.

SUMMARY:

The 42-year-old farmer was fatally injured when he attempted to adjust the spacing on the cultivator he was using. The deceased had stopped the forward motion of the tractor but left the tractor run. He then raised the cultivator in order to adjust the hilling wings. The cultivator was equipped with a hydraulic powered weeder bar that functioned off of the tractors power take-off (PTO). As the deceased was exiting from under the cultivator his jacket caught on the connecting bolt of the rotating weeder bar and twisted to the point of strangulation. When coworkers found the deceased the county sheriff and coroner were notified. The deceased was pronounced dead at the scene. The Colorado Department of Health (CDH) investigator concluded that to prevent future similar occurrences, employers should:

- Ensure that all power sources are shut off prior to making adjustments to machinery.

- Develop, implement and enforce a comprehensive written safety program.

- Employers should conduct a job site survey on a regular basis to identify potential hazards, implement appropriate control measures, and provide subsequent training to employees that specifically addresses all identified site hazards.

INTRODUCTION:

On April 23, 1992 a male, 42-year-old, Colorado farmer was fatally injured while making adjustments on equipment. The investigation of this work-related fatality was prompted by a newspaper report of the incident on April 28, 1992. The CDH investigator conducted an on-site investigation and spoke to family members. Photographs of the equipment were taken and the cultivator manufacturer was

contacted for product literature. The local sheriffs department was unable to produce a written police report and no autopsy had been performed.

The farm in this case had been family owned for 19 years and employs a total of 8 personnel. The deceased functioned as a collateral safety officer for the farm and there were no written safety programs or policies. Safety training was not conducted although occasional safety topics were discussed with coworkers.

INVESTIGATION:

Information obtained from the family members indicated that the cultivator the deceased was operating had a tendency to plug up with weeds because the hilling wings were not adjusted properly. The one-year-old cultivator was a "Dammer Diker" manufactured by AG Engineering of Tri Cities, Washington. This particular unit was equipped with a weeder bar that is manufactured by Coaldale Iron Products, LTD, Coaldale, Alberta, Canada. The weeder bar is a hexagon rod that is rotated by a hydraulic drive unit powered by the PTO of the tractor. The tractor being utilized with this piece of equipment was a John Deere Model 4640. The deceased had apparently stopped the tractor, raised the cultivator, and with the tractor still running and the PTO engaged proceeded to make adjustments on the cultivator. The safety warning label on the cultivator (photograph #1) states "DO NOT RIDE OR WORK ON MACHINE WHILE IN MOTION" and "SECURELY BLOCK WHILE ADJUSTING OR WORKING ON MACHINE." These safety precautions were repeated in the owner-operator manual. (attachment 2) As he was coming out from under the equipment a connecting bolt on the rotating weeder bar came in contact with his jacket. The entangled jacket wrapped around the weeder bar and strangled the deceased.

CAUSE OF DEATH:

The cause of death as listed on the death certificate was suffocation due to or as a consequence of clothes caught in cultivator PTO.

RECOMMENDATIONS/DISCUSSION:

Recommendation #1: Ensure that all power sources are shut off prior to making adjustments to machinery.

Discussion: Safety precautions recommended by the manufacturer should be strictly followed. In this incident the manufacturer had a safety warning label on the equipment and safety precautions listed in the owner-operator manual advising that the equipment not be worked on while in motion.

Recommendation #2: Employers should develop, implement, and enforce a comprehensive written safety program.

Discussion: This employer did not have a written comprehensive safety program. All employers should evaluate the tasks done by workers to identify all potential hazards. The employer should then develop and implement a safety program addressing these hazards, provide worker training in safe work procedures and implement appropriate control measures.

Recommendation #3: Employers should conduct a job site survey on a regular basis to identify potential hazards, implement appropriate control measures, and provide subsequent training to employees that specifically addresses all identified site hazards.

Discussion: A through inspection of the equipment would have revealed the potential hazard of the rotating shaft and connecting bolt. A possible appropriate control measure would be to replace the bolt with a spring steel roll pin that did not extend beyond the shaft edges.

_____

Lyle E. McKenzie
Chief Investigator/Industrial Hygienist
Environmental Epidemiology Division
Occupational Epidemiology Program