

February 2016 Alive & Well Updates: Farm Equipment Hazards

Large Machinery-Related Agricultural Injuries Across a Five-State Region in the Midwest. February 2016. Reiner, Anne; Gerberich, Susan; Goodwin; Ryan, Andrew D.; Mandel, Jeffrey. February 2016. *Journal of Occupational & Environmental Medicine* 58(2):154-161.

Objective: High agricultural injury related mortality and morbidity rates persist. This study addressed a knowledge gap regarding large machinery-related injury magnitude, consequences, and risk factors.

Methods: From randomly selected Midwestern agricultural operations in 1999 and 2001, 7420 eligible households participated. Demographic, exposure, and injury data collected for four 6-month periods used a computer-assisted telephone interview. An a priori causal model enabled survey development, data analysis, and interpretation. Directed acyclic graphs, developed from this model, facilitated potential confounder identification for specific exposures in multivariate analyses.

Results: The injury rate was 12.82 events per 1000 persons per year. Increased risk was associated with male gender, increasing age, state of residence, history of prior injury, and increasing hours worked per week.

Conclusions: Large machinery-related agricultural injuries can result in significant consequences. Associated increased injury risks require further investigation and targeting of relevant interventions.

Rearward Visibility Issues Related to Agricultural Tractors and Self-Propelled Machinery: Contributing Factors, Potential Solutions. 2016. Shawn G. Ehlers, William E. Field. *Journal of Agricultural Safety and Health*. 22(1): 47-59.

As the size, complexity, and speed of agricultural tractors and self-propelled machinery have increased, so have the visibility-related issues, placing significant importance on the visual skills, alertness, and reactive abilities of the operator. Rearward movement of large agricultural equipment has been identified in the literature as causing both fatalities and injuries to bystanders who were not visible to the operator and damage to both the machine and stationary objects. The addition of monitoring assistance, while not a new concept, has advanced significantly, offering agricultural machinery operators greater options for increasing their awareness of the area surrounding the machine. In this research, we attempt to (1) identify and describe the key contributors to agricultural machinery visibility issues, i.e., operator-related and machine-related factors, and (2) enumerate and evaluate the potential solutions being offered that address these factors. Enhanced operator safety and efficiency should result from a better understanding of the efforts to solve the visibility problems inherent in large tractors and self-propelled agricultural machinery.