Agricultural Injuries to the Hand and Upper Extremity
Yaffe, M. A., & Kaplan, F. T. (2014). Agricultural injuries to the hand and upper extremity. *JAAOS-Journal of the American Academy of Orthopaedic Surgeons*, *22*(10), 605-613.

Agricultural injuries involving the hand and upper extremity are common, debilitating injuries that reflect the significant occupational hazards associated with the agricultural industry. Farm injuries occur in all age groups and are associated with significant resource utilization and treatment costs. Most of these injuries are associated with machinery, including tractors, power take-off devices, grain augers, hay balers, and combine harvesters. Each piece of machinery produces specific injury patterns and a spectrum of bone and soft-tissue injuries that are frequently characterized by the loss of a digit or limb, permanent disability, loss of function, and serious complications such as infection. Management of agricultural injuries includes expedient administration of antibiotic and tetanus prophylaxis, aggressive irrigation, serial débridement, consideration of delayed wound closure, and reconstruction or replantation of amputated digits and limbs, if feasible.

Hand Injuries in Agricultural Accidents
Hansen, T. B., & Carstensen, O. (1999). Hand injuries in agricultural accidents. *The Journal of Hand Surgery: British & European Volume*, *24*(2), 190-192.

The aim of this study was to investigate the incidence of hand injuries due to farming accidents in a defined population with a representative mixture of agricultural activities. During a 12-month period all agricultural accidents treated at the five hospitals in the County of Ringkøbing, Denmark were prospectively registered. Follow-up was done by telephone interview 4 months after the accident. Of the 260 persons injured in agricultural accidents, 117 (45%) had lesions of the upper extremity and 73 persons (28%) had hand injuries. The most common injuries were lacerations and amputations (45%) followed by fractures (36%). Mean sick leave was 25 days, and mean work impairment was 31 days in patients with hand injuries.

Farm Hand Tools Injuries: A Case Study From Northern India
Kumar, A., Singh, J. K., Mohan, D., & Varghese, M. (2008). Farm hand tools injuries: A case study from northern India. *Safety science*, *46*(1), 54-65.

Hand tools are commonly used on Indian farms. There are 800 million hand tools used on Indian farms by 260 million farm workers. This study was done in two phases. In the first phase, data on agricultural related injuries was collected from nine contiguous villages in a total population of 19,723 persons. In the second phase of study 21 more villages were added and population covered was 78,890. A total of 576 agricultural injuries were reported in Phase I, hand tools accounted for 332 (58%) of total agricultural injuries. In Phase II, 54 (19%) injuries were hand tool related out of total 282 agricultural injuries. Most of the injuries i.e. 98% and 91% of the hand tool injuries caused were AIS 1 (45% and 17% of the total AIS 1 injuries) in Phase I

and II. Seventy percent of AIS1 hand tool injuries had a recovery time of more than 7 days in Phase I. In Phase II, all AIS 1 injuries took more than 7 days to recover. The mechanism of injuries was slippage of tool from hand or hitting a hard surface with impact type soil interactive tools (spade). The foot and legs were the most frequently injured body part in these tools. For harvesting tools (sickle), deep cuts of fingers and in weeding fork abrasions on under side of little finger because of ground contact were common injuries. For axe and sugar cane cutter, higher severity injuries were sustained on upper extremities. There are 1700 injuries related to hand tools per hundred thousand farm workers per year in rural India. Productivity was impaired to the tune of 24,000 days per hundred thousand population because of injuries caused by hand tools on these farms.
