

# Agricultural Fatalities in Ontario: 1990-2011

## Understanding the Issue

There were 631 agricultural fatalities in Ontario between 1990 and 2011.

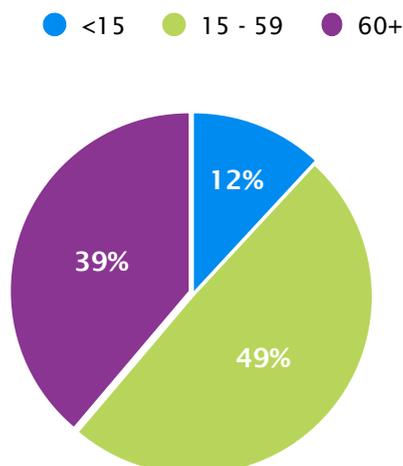
Ontario is home to 51,590 farms.<sup>1</sup> The physical conditions, the nature of farm work and, for some, a lack of separation between home and workplace mean agricultural workers are often exposed to potentially hazardous conditions. Between 1990 and 2011, there were a total of 631 agricultural fatalities recorded in Ontario. Significantly more Ontario farmers suffered fatal injuries while using machines than from non-machine causes. This Ontario Injury Compass highlights risk factors for agricultural injury, as well as prevention strategies to address this issue.

## Risk Factors

### Age

Age is an important risk factor for agricultural injury. Figure 1 shows the majority of fatalities in Ontario occurred among those aged 15 - 59. Those aged 60 and over represented 39% of fatalities and children and youth under the age of 15 represented 12%.

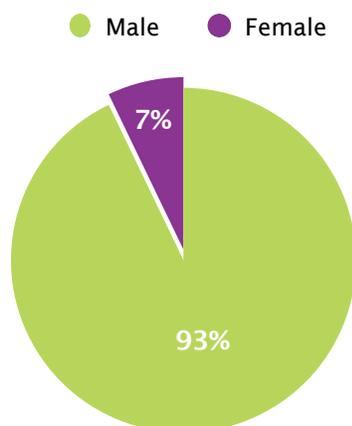
FIGURE 1. Agricultural Fatalities by Age Group, Ontario,



### Sex

The majority of agricultural deaths in Ontario are males. As shown in Figure 2, males represented 93% of all agricultural fatalities in Ontario between 1990 and 2011. This is consistent with national and international trends.

FIGURE 2. Agricultural Fatalities by Sex, Ontario, 1990 - 2011



## Non-Machine Causes

Fatalities not related to the use of a machine accounted for 179 out of 631 records.

Agricultural injuries are recorded as non-machine related or machine related. Non-machine injuries were a factor in 179 cases while 444 cases were related to machine use. In all, the machine/non-machine cause was unknown in 8 cases. In the non-machine category, injuries were most often related to being struck by an object (33) or an animal (30), as shown in Table 1. Other common causes included falling from height, coming into contact with a harmful substance/radiation, and drowning.

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## Machine-Related Causes

Machine-related fatalities accounted for 444 out of 631 records.

Considering fatalities that were related to machine use, rollovers were the most common cause of fatal injury, as shown in Table 2. Rollovers are recorded as sideways or backwards; sideways rollovers accounted for 89 fatalities and backwards rollovers accounted for 40 fatalities. Entanglement or being caught in machinery was a factor in 52 deaths. 46 deaths were related to an alighted operator, which occurs when an unmanned machine slips into gear and rolls, injuring a person in its path. Further, 38 deaths occurred due to a fall from a moving machine.

## Leading Prevention Strategies

### Roll-Over Protective Structures (ROPS)

Evidence shows using roll-over protective structures (ROPS) on heavy equipment such as tractors can prevent roll-over fatalities.<sup>2</sup> It is important to note seatbelts must be worn inside these vehicles for ROPS to be completely effective.

### Passive Safety Barriers

Particularly for children, safety barriers limit exposure to potential hazards including water sources, large animals and machinery. Barriers around areas like haylofts are important to prevent falls from heights, a

**TABLE 1. Common Non-Machine Causes of Agricultural Fatalities in Ontario, 1990-2011**

Cause	Fatalities
Struck by non-machine object	33
Crushed/struck by animal	30
Fall from height	21
Contact with radiation, caustic, toxic or noxious substance	19
Drowning	16
All other non-machine causes combined	60
<b>Total Non-Machine</b>	<b>179</b>

**TABLE 2. Common Machine Causes of Agricultural Fatalities in Ontario, 1990-2011**

Cause	Fatalities
Sideways rollover	89
Entangled/caught in machinery	52
Alighted operator/other person run-over, pinned or struck by unmanned machine	46
Backwards rollover	40
Operator fell from moving machine, then run-over, pinned or struck	38
All other machine causes combined	179
<b>Total Machine</b>	<b>444</b>

leading cause of non-machine fatality (Table 1).

### Preventing Machinery Entanglements

A number of precautions can be taken to prevent entanglements, including:

- Dressing appropriately (e.g. wear fitted clothing, cover long hair)
- Ensuring all moving machinery parts have guards or shields
- Turning off the engine or power source when leaving, adjusting or repairing machinery

For more information, visit the Agricultural Health and Safety Network website: [www.aghealth.usask.ca/resources/](http://www.aghealth.usask.ca/resources/)

### Age-Appropriate Work

Children working on farms should be assigned developmentally appropriate tasks. For further information,

see the *North American Guidelines for Children's Agricultural Tasks*, [www.nagcat.org](http://www.nagcat.org).

Through the lifespan, farmers may consider modifying their approach to continue working as safely as possible. Modifications can include putting extra mirrors on machinery, taking more frequent rest and hydration breaks and avoiding working alone if possible.<sup>3</sup>

Suggested citation: Cowle, S. & Carey, S. (2014). Agricultural Fatalities in Ontario: 1990-2011. *Ontario Injury Compass*, Issue 5, July 2014. Parachute: Toronto, ON.

### Occupational Health & Safety Practices

While occupational health and safety practices are not as heavily enforced for farms as for other workplaces, these practices are best to identify hazards, mitigate risk, and coordinate emergency response if necessary. Important elements include: setting aside time for training, meetings and inspections; budgeting funds for equipment repairs and replacement; writing a plan to mitigate hazards; and having an emergency preparedness plan.<sup>4</sup>

### Methodology

Agricultural fatality data from 1990 - 2011 were obtained from the Canadian Agricultural Injury Reporting (CAIR) System. The Alberta Centre for Injury Control and Research (ACICR) is contracted by CAIR to collect and analyze data from across Canada using detailed records from hospitals and coroner's offices. The CAIR data analyst isolated the subset of data containing all incidents that occurred in Ontario, and provided this data to the Ontario Injury Prevention Resource Centre (OIRPC).

### References

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4. Canadian Agricultural Safety Association. (2012). *Ontario FarmSafe Resource Guide*. Retrieved from [www.wsp.ca/WSPS/media/Site/Resources/Downloads/Ontario-FarmSafe-RSCGuide\\_Final-LwRs.pdf](http://www.wsp.ca/WSPS/media/Site/Resources/Downloads/Ontario-FarmSafe-RSCGuide_Final-LwRs.pdf)