

Agricultural Fatalities in Canada 1990–2008

A summary of 19 years of injury data from
Canadian Agricultural Injury Reporting (CAIR).

www.cair-sbac.ca





Canadian Agricultural Injury Reporting (CAIR) was established in 1995 as the Canadian Agriculture Injury Surveillance Program (CAISP) to provide a comprehensive accounting of fatal and hospitalized agricultural injuries in Canada. CAIR is a national program led by volunteers with funding from the Canadian Agricultural Safety Association (CASA) through Growing Forward, a federal, provincial, territorial initiative.

Agricultural Fatalities in Canada 1990–2008 examines Canadian agricultural fatality data for the 19 calendar years from 1990–2008. It includes reported agricultural fatality data for the Canadian farm population and temporary foreign workers under the seasonal agriculture works program from Citizenship & Immigration Canada.

1,975

accidental agricultural deaths were recorded in Canada from 1990 to 2008.

70%

of agricultural fatalities in Canada were related to machinery. 46% were caused by rollovers, runovers and entanglements.

104

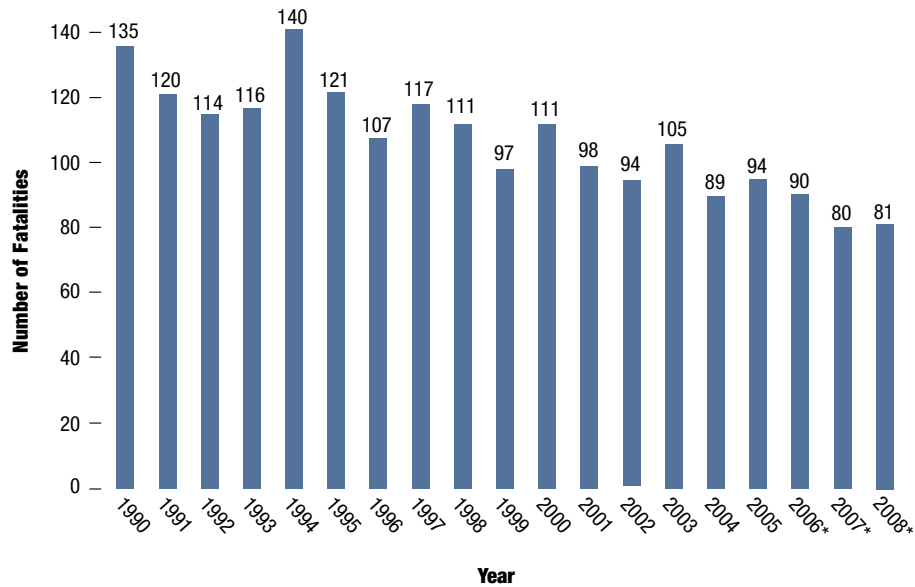
annual average deaths on farms 1990–2008. 12.9 per 100,000. 92% were male.

47%

of those killed were farmer/owner operators. 14% were their children.

How many?

Agricultural fatalities by calendar year, 1990–2008



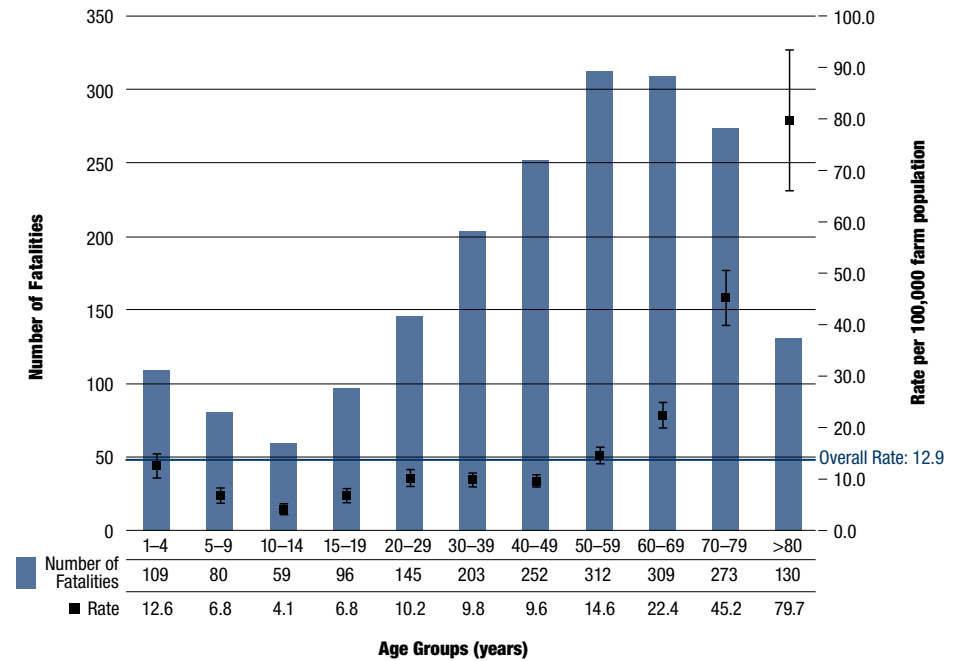
From 1990 to 2008, there were 1,975 agricultural fatalities in Canada. An average of 104 deaths each year. During the first 10 years of the surveillance period, there was an average of 118 fatalities each year. During the last nine years, the average number of fatalities dropped to 89 each year.

* Due to incomplete data from Quebec from 2006–2008, this graph has been adjusted for 2006–2008 using the average number of deaths in the previous five years in Quebec.

Who died?

Agricultural fatality rates by age group, 1990–2008

The overall fatality rate was 12.9 deaths per 100,000 farm population.

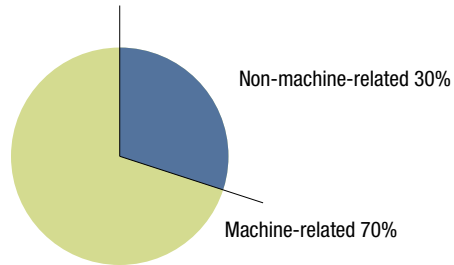


The age groups with the highest number of deaths, those 50 to 59 years of age (312 deaths) and those 60 to 69 (309 deaths) years of age, did not have the highest rate. **The age group with the highest fatality rate was 80 years and older (130 deaths) with a rate of 79.7 deaths per 100,000 farm population.**

47% of the persons killed in agricultural injury events were farm owner/operators. A further 14% of the victims were children of farm owner/operators and 11% were hired workers.

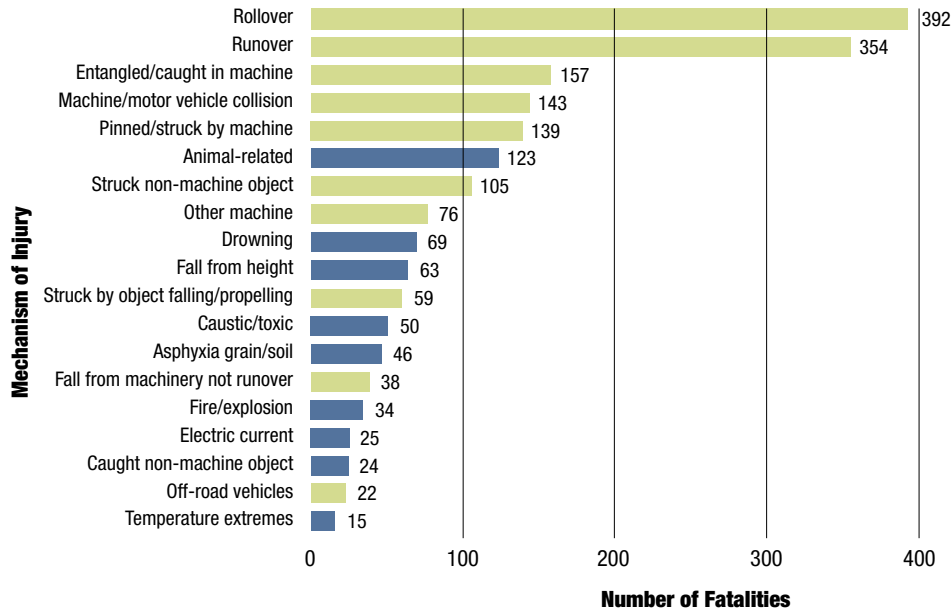
How did it happen?

Agricultural fatalities by major cause, 1990–2008



70% (1,381) of agricultural fatalities were machine-related due to machine rollovers, machine runovers and machine entanglements.

The 30% of agricultural fatalities unrelated to machinery (594) included being struck by an animal or an object, drownings (mainly in children), falls from height, and exposure to toxic substances.



Almost half of all agricultural fatalities in Canada (46%) were due to three machine-related causes: machine rollovers, machine runovers and machine entanglements (903 fatalities).

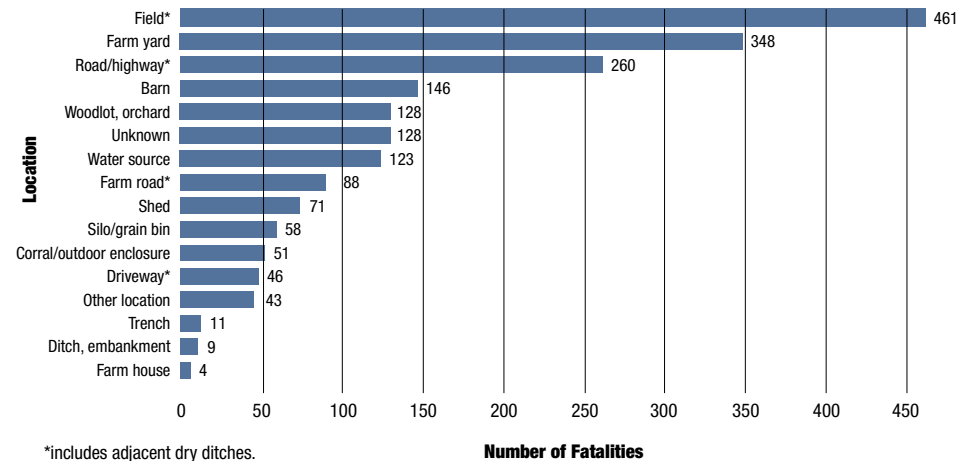
Over all age groups, the leading causes of agricultural fatalities in Canada were machine rollovers and machine runovers each with 20% and 18%, machine entanglements (8%), traffic collisions and being pinned or struck by a machine each with 7%, animal-related events with another 6% and being struck by a non-machine object (5%).

There were 1,381 machine-related agricultural fatalities in Canada from 1990 to 2008. **Tractors were associated with 37% of all agricultural deaths in Canada.**

Where did they die?

The most common locations for agricultural fatalities were fields (23%), farm yard (18%), road/highway (13%) and barns (7%).

Agricultural fatalities by location of injury, 1990–2008



A closer look at agricultural fatalities, 1990–2008:

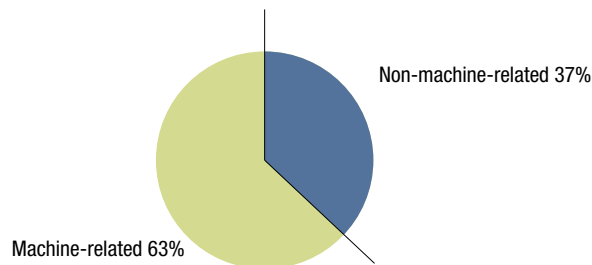
Children and Youth under age 15

Who? From 1990 to 2008, there were 248 agricultural fatalities among children and youth in Canada under 15 years of age, an average of 13 per year. The average number of child fatalities per year was 16 for the first 10 years of the surveillance period, and 10 deaths for the last nine years.

From 1990 to 2008, 81% of the child victims of agricultural fatalities were male. Although 71% of the agricultural fatalities among children were work-related, in 8 out of 10 cases, the victim was not actually doing the work. He or she was killed by someone else who was engaged in agricultural work.

And 73% of children aged 1 to 14 killed on the farm were children of owner/operators. 10% were child visitors and 9% were other relatives of farm owner/operator.

How? Agricultural fatalities in children and youth *by cause*, 1990–2008



63% of agricultural fatalities in children were machine-related, including machine runovers, machine rollovers and machine entanglements. The machine types most frequently involved in agricultural fatalities among children were tractors (47%), off-road vehicles (13%), motor vehicles (12%) and wagons/trailers (7%). Tractors were associated with 30% of child deaths overall.

Older children and teenagers were more often killed in machine runovers and rollovers. The 37% of agricultural fatalities that were unrelated to machines included drownings, being struck by objects, being caught under heavy objects and falling from a height.

Runovers and drownings were most common among young children. For children aged 14 and under, machine runovers caused by far the largest proportion of fatal injuries (39%), followed by drownings (16%), machine rollovers (12%), animal-related incidents (6%), being caught in or under an object (5%) and being struck by a non-machine object (4%).

Where? The most common locations for child agricultural fatalities were farm yards (29%), fields (18%), water sources (16%) and barns (8%). At least 45% of the deaths occurred in locations close to the farm home.

A closer look at agricultural fatalities, 1990–2008:

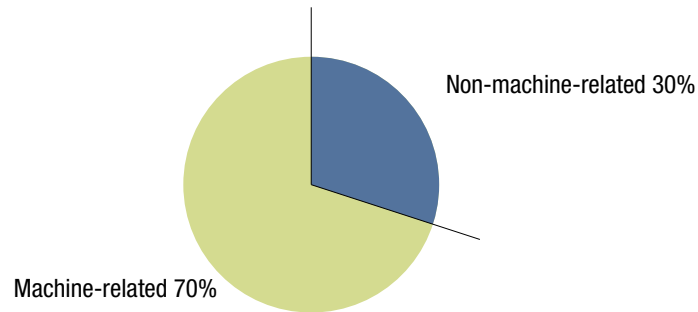
Adults aged 15 to 59

Who? From 1990 to 2008, there were 1,008 agricultural fatalities of Canadian adults aged 15 to 59, an average of 53 deaths each year. For the first 10 years, the average number of fatalities each year was 61. For the last nine years, the average was 44 fatalities each year. The decline in the average annual number of fatalities was mainly due to a reduction in machine rollover and entanglement fatalities over the surveillance period.

92% of the younger adults killed in agricultural injury events were male. And 9 out of 10 were doing some sort of agricultural work when they died. Deaths that were non-work-related (6%) were due to hazards of the farm environment such as drownings in dugouts and horseback riding.

42% of younger adults killed in agricultural injury events were farm owner/operators. 19% of the victims were hired workers and 9% were children of owner/operators. 7% of the fatalities were to persons unknown to the farmer. In most cases, these were people who died as a result of a traffic collision with farm machinery.

How? 70% of agricultural fatalities in younger adults were machine-related, and included machine rollovers, entanglements, traffic collisions, machine runovers, and being pinned or struck by a machine. Fatalities unrelated to machinery included being struck by objects, exposure to toxic substances, animal-related events and falls from heights.



Machine runovers caused almost as many deaths of older adults as machine rollovers. In younger adults, machine rollovers were responsible for more than twice as many fatalities as machine runovers.

Tractors were involved in almost half (46%) of fatalities among younger adults, followed by motor vehicles at 16%. **Tractors were associated with 35% of all agricultural deaths among younger adults.**

Where? Most commonly, fatalities in younger adults took place in the field and adjacent ditches, public roads and their adjacent ditches, farm yards, barns and woodlots.

A closer look at agricultural fatalities, 1990–2008:

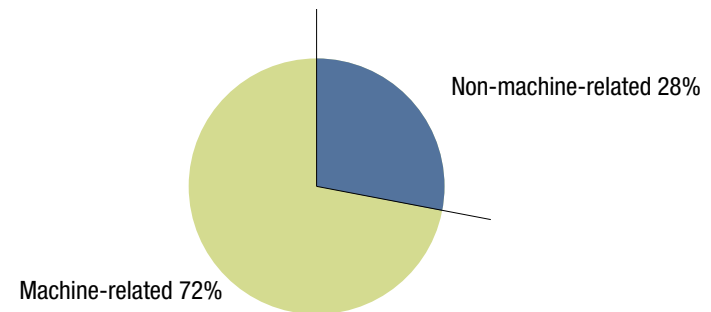
Adults aged 60 and over

Who? From 1990 to 2008, there were 712 agricultural fatalities among adults aged 60 and over, an average of 37 deaths each year. The average number of fatalities per year was 40 for the first 10 years of the surveillance period, the average for the last nine years was 34 fatalities each year. There was a significant decrease in the number of fatalities in the last three years.

95% of the older adults killed in agricultural injury events were male. 41% (295) of all older adults killed during agricultural work were males aged 60 to 69 years.

Of the 706 fatalities in which the relationship was identified, 71% were farm owner/operators. A further 7% of the victims were relatives of farm owner/operator and 4% were hired workers.

How? 95% of the older adults who died were engaged in agricultural work. 72% were machine-related. Fatalities unrelated to machines included animal-related events, being struck by an object and falls from height.



In adults aged 60 and over, 46% of all deaths were due to two main mechanisms of injury, machine rollovers (25%) and machine runovers (24%). In older adults, the proportion of fatalities due to runovers was more than twice the proportion of fatalities due to runovers in younger adults (10%).

Tractors were involved in 65% of fatalities of older adults on the farm, followed by motor vehicles at 9% and power take-offs (PTOs) at 4%. **The proportion of tractor-related deaths in adults aged 60 and over was 19.1% greater than for younger adults.**

The next most common mechanisms of fatal injury in older adults were being struck by an animal, being pinned or struck by a machine, machine entanglements, and traffic collisions. **Older adults had a far higher proportion of animal-related fatalities (10%) than younger adults (5%).**

Where? Older adults most commonly died in incidents in fields and their adjacent ditches, farm yards, public roads and their adjacent ditches and woodlots.

For the full report *Agricultural Fatalities in Canada 1990–2008* and more information on agricultural injury reporting in Canada, go to cair-sbac.ca, the website of Canadian Agricultural Injury Reporting (CAIR).

Canadian Agricultural Injury Reporting (CAIR) contracts with the **Alberta Centre for Injury Control & Research at the University of Alberta** in Edmonton, Alberta to collect and analyze information on agricultural injuries provided by designated collaborators from across Canada. Through CAIR, researchers, representatives of government agencies, farmers and health and safety specialists all contribute to the analysis and dissemination of the trends and safety messages.

CAIR collects and analyzes agricultural fatalities to prevent more.

Preventing injuries in agricultural work settings is challenging because of the unique nature of the agricultural work environment. In other industries, victims of occupational injuries are usually workers aged 18 to 65 but because farms and ranches are homes as well as work sites, children and the elderly are also victims of agricultural injuries.

To understand the who, what, where, why, when and how of agricultural injuries across Canada, CAIR through ACICR works with provincial agencies such as the offices of the coroner or chief medical examiner, departments of vital statistics or farm safety associations to collect lists of all potential agriculture-related fatalities within each province. Then CAIR's provincial collaborators pull data from detailed case reports, enter it using a standard data abstraction form and send it on to ACICR for verification, coding and analysis.

Canadian Agricultural Injury Reporting

3325 – C Pembina Highway

Winnipeg MB R3V 0A2

Tel. (204) 452-2272

Fax. (204) 261-5004

e-mail: cair-sbac@casa-acsa.ca

www.cair-sbac.ca