Farming and ranching provides wonderful learning and living opportunities for children but it also presents recurring safety hazards. Most farm injuries and fatalities are predictable and preventable. The primary key is to assign chores appropriate to each child’s stage of development, provide adequate training, and teach them to recognize and avoid hazards.

According to the 2012 Child and Youth Injury Report an average of 12 children under the age of 10 are killed annually and 110 are hospitalized due to injuries sustained on farms and boys are 3 to 4 times more likely than girls to sustain a serious injury.

Children and youth use off road all terrain vehicles (ATVs) for work, transportation, and recreation in rural and remote areas, and they learn to use farm equipment at a very young age.
According to data from the 'Canadian Agricultural Injury Surveillance Program' (CAISP), the following data applies:

**Statistics for Children and Youth (less than 15 years of age) 1990-2008**

- There were 248 deaths due to agriculture-related injuries.
- 81% of the fatalities were boys.
- 71% of the fatalities were work-related.

**73% of those who died were children of the owner/operators**

- 30% of the deaths involved a tractor.
- Runover deaths accounted for 39% of all deaths. Of those, 52% were passengers, 44% were bystanders, and another 4% were operators of a piece of machinery.
- Of those who died due to drowning, 42% occurred in a dugout.

Statistics cannot begin to describe the anguish and devastation of a child's death on the family members. The numbers provide statistical data to point out the major threats to life and limb of children on the farm. To read more statistical information on agricultural injuries please scroll down to the end of this document.

**Adult Supervision is Imperative**

It's not easy for young families who maintain farms to adhere constant vigilance in the supervision of young children. The fact remains that the majority of the under-5 fatalities happened precisely because adults had lost track of a child's whereabouts. Young children **must have** adult supervision at all times.

When death is the result of falling from a tractor or piece of moving farm equipment, full responsibility lies with the adult who allowed the youngster to "come along for the ride." It doesn't matter whether the driver gave in to the child's plea, or simply wanted to keep track of the youngster. Just because Dad let you ride when you were a kid, doesn't make it OK! Allowing riders on farm equipment is definitely a negligent, irresponsible act.

**Things you Should Know**

- Know the details of the job and physical skills that are required to complete the job by getting instructions and practising ahead of time for each new chore.
- Know the hazards and learn how to stay alert and recognize potential dangers.
- Know the drill and how to handle hazards once you recognize them.
Guidelines to Protect Your Families

To protect your family members while working on the farm, teach them the following:

- Modify the rules for your farm as appropriate for the age and stage of each family member.
- Encourage your children to be involved in farm safety projects in the community.
- Teach children proper safety skills.
- Become a responsible role model in your daily work.
- Provide direction ahead of time in how to handle an emergency situation.
- Make sure all children know how to contact Emergency Services.
- Provide First Aid Training.
- Ensure that children know the location of an accessible First Aid Kit and Fire Extinguisher and provide instructions on how to use the Fire Extinguisher.

Know the Hazards

Children are susceptible and vulnerable to the same hazards on a farm as adults with large machinery, powerful tools, toxic chemicals, confining spaces, drowning hazards, animal threats and motor vehicles, but children are much less capable of fully understanding the true dangers. Childproofing is one way to help keep children safe on the farm but educating them about the potential hazards is another. Studies suggest that children that are from 10 to 14 years of age are at the greatest risk for farm-related injuries. This is also the age group that is most likely to get pushed physically, mentally and emotionally beyond their developmental ability.

Parents often fail to recognize that behaviour appropriate to a child’s developmental stage will, by its very nature, put them at risk. To protect your children from potential hazards:

- Study the developmental characteristics of children at specific ages and use the information below as a guide. Children are often drawn to dangerous situations.
- Inspect your farm from a child’s point of view for obvious hazards and remove them. Where hazards are built-in, explain the danger to children and supervise them appropriately.
Place hazardous chemicals, machinery and equipment in 'off limit' areas and make sure children understand the absolute necessity to stay away.

Educate your children about the warning signage (signs and decals) found on equipment and machinery, and teach them how to be compliant with the warnings.

Kids Want to Grow Up Fast

Major physical and psychological changes occur during the decade between 6 and 15 years of age. It's often hard for parents to realize just how quickly their youngsters are growing up. The need for direct supervision decreases with age. However, basic rules such as staying away from areas where work is in progress must be strictly enforced.

Most children want to take part in farm work as soon as possible. This creates the need for a new kind of adult supervision. You must determine which tasks are appropriate for a child's age. Patient training in the proper methods of performing various tasks is vital. If safety rules are broken, adults have to take as much time as is necessary for explanation and enforcement.

While a young teen may be starting to look like an adult, rest assured that their physical, mental and emotional development are not complete. Simply being able to reach the clutch does not a tractor driver make! Teenagers' lack of experience and sense of immortality increase the inherent risks of operating equipment. Adults have to be very firm with youngsters at this stage, and be certain to set the right example!

Give your Children the Proper Training

Children often become a source of support to get farm work completed but think about the modern day complexities and technological advancements in farm machinery and production processes, and it's easy to see why training is so vitally important. Most injuries among new farm workers occur due to a lack of knowledge or insufficient training on the job. Provide your children with proper instructions and allow them time to practise before you send them out to do chores.

Give children the opportunity to prove they are capable of following the rules and responsible to do the job before giving them farm tasks to perform.

Select chores that match the child’s mental, physical and emotional capacities.
Introduce complex tasks only if they are age appropriate and with proper training, e.g. equipment operation. Machinery is the most common source of injury on the farm.

Train children the proper way to safely accomplish farm tasks before assigning chores.

Provide children protective equipment and ensure it is worn properly.

Explain techniques to children that will make a task easier.

Teach safety skills in ways that are appropriate to the child’s age and ability.

Make age-appropriate rules. Consistently enforce consequences if rules are not followed.

Always supervise children according to their age – young children need constant supervision.

Understand Each Child's Capabilities and Limitations

The following section highlights developmental characteristics of children at various ages. Based on this information, suggestions for age-appropriate tasks are provided.

Child Development and Age Appropriate Tasks

Children's physical and mental development follows a reasonably predictable pattern. However, each child is unique, and may or may not develop at the same rate as others of their age group.

The following synopsis of child development characteristics and age appropriate tasks was resourced from the work of Dr. Richard Clark of Ohio State University. He urges parents to monitor their own children's development, and carefully judge individual capabilities. Please note that parental expectations often exceed a child's developmental capabilities!

Preschool Years - Characteristics

- Rapid body growth and demonstrating the beginning of motor skill development.
- Balance problems, clumsiness, and slow reaction time
- Cannot differentiate speed, weight, force, acceleration, distance, or location accurately
Unable to understand cause and effect

Cannot memorize rules -- attention span less than 10 minutes

Strong-willed – they do not stop and think before acting

Curiosity is high and they lack fear

Illogical and 'magical' thinking

They have a fascination with movement

Age Appropriate Tasks for Pre-Schoolers

- Tasks must not require balance, rapid motion, or machines
- Tasks should take less than 10 minutes to complete, and must not require accuracy
- Instructions must be demonstrated and repeated each time
- 'Appropriate jobs might include 'helping' with household cleanup, watering plants, and feeding small animals
- Maximum adult supervision is essential at all times, due to child's poor co-ordination, high energy, impulsiveness, and lack of fear
- Use physical barriers such as locks and fences
- Provide safe distractions
- Prohibit riding on any kind of machinery

Ages 5 to 10 - Characteristics

- Child learns to use small and large muscles during this slow, steady growth stage
- Poor eye-hand co-ordination slowly develops with age and practice
- They exhibit boundless energy followed quickly by fatigue
- Children begin trying to master tasks that are more complex
- Memory and ability to deal with issues like location, distance, weight, force, speed, and acceleration slowly develop
Children think they have greater physical and cognitive skill than they demonstrate. Attention span is 12 to 14 minutes

Children must operate with concrete facts. They are not yet capable of thinking about abstract ideas. Oral instructions must be supported with demonstrations of how to perform each task.

Children display inconsistent use of logic

Ability to sort items by similar characteristics is developing

Children want to accompany adults, test skills, and try new tasks

Children don't take responsibility -- follow-through to task completion is rare

Children want adult approval

Children are unaware of realistic danger such as kidnapping or war, rather than falling off of machinery

**Age Appropriate Tasks for Ages 5 to 10**

Tasks should be of short duration, and should not require good eye-hand co-ordination. Supervision is still necessary and instructions should be demonstrated.

Tasks should not require accuracy, high quality, or total completion.

Provide consistent rules

Discuss safe behaviours

Implementing and tools are appropriate but not power tools.

At this stage, children enjoy tasks that involve sorting of materials. Appropriate jobs might include feeding of animals (under supervision); cleanup; yard and garden work such as weeding, watering, and picking; lawn mowing with a push mower on a flat surface (after age 10, and under supervision); hand raking; and digging.

**Ages 11 to 14 – Characteristics**

Clumsiness and co-ordination problems often accompany rapid growth.

Children master concepts of motion and direction.
Abstract thinking develops. They can understand instructions without seeing the task, and begin to apply previous work experiences to new jobs.

Children experience feelings of immortality; a belief that accidents happen to other people.

Begin to test the limits of their physical abilities. This age group does not understand that physical size is not a substitute for experience and judgement.

Self-preoccupation can spell danger for others working with children of this age.

They demonstrate aggression, risk-taking, and rebelliousness toward parents.

Other interests may create haste to complete a job.

Children want social/peer approval

Children want to practise new skills without constant supervision

**Age Appropriate Tasks for Ages 11 to 14**

- Don't mistake size for ability!
- This is potentially the most dangerous age group due to high risk-taking, ease of distraction, clumsiness, and feelings of immortality.
- Enforce consistent rules with consequences and rewards
- The usage of power tool should be limited and under strict supervision. Hand tools are best.
- They begin to incorporate tasks with higher physical requirements.
- Starting with low risk tasks begin giving more responsibility for follow-through with less supervision.
- Encourage children to talk to their peers who have been hurt in farm accidents

**Ages 15 to 18 - Characteristics**

- Most traits of awkwardness are overcome and the mastery of small and large muscles is basically complete.
- Skills are honed through practice and experience.
- Increased sense of adult responsibility and competence
- They want to be supportive and to do adult work
Abstract thinking allows for oral instruction, generalization of skills from one task to another, and thinking and projecting into the future.

Feelings of immortality persist.

They have a desire to experiment and take risks.

Teens feel size and age can substitute for ability and experience.

Characteristics of rebelliousness, risk-taking, and aggression are typical. They may resist adult authority.

Undue haste due to competing interests can result in accidents.

They may act like an adult one day, and like a child the next.

They have a strong need for peer acceptance.

**Age Appropriate Tasks for Ages 15 to 18**

- They can start to take on adult jobs.
- Use clear and consistent rules regarding drugs and alcohol.
- Reward acceptance of adult responsibilities.
- They still need to gain experience under adult supervision (e.g. equipment operation and maintenance).
- Gradually increase tasks as experience is gained.
- Don’t delegate ‘old’ equipment to teens, and ‘new’ machines to parents. Older equipment may have more operating problems and fewer safety features.
- Risk-taking and immortality feelings lead to pushing equipment beyond safety limits.
- Provide opportunities to be a role model in safety.

**Plan Your Own Child Safety Strategy**

As the statistics so clearly illustrate, the major causes of farm accidents involving children are lack of supervision and inadequate training. Obviously, we could all benefit by heightening our safety awareness. Safety is something that must become second nature.
Take Stock of Safety Status

Start by conducting an in-depth safety inspection of the farming operation. By identifying and correcting hazards, you will be taking a major step toward protecting children (and everyone else)!

An inspection should cover every facet of the operation. The 'Farm Safety Association' has developed a very detailed safety audit form that is ideal for this purpose. Hazards are identified by the farmer during an inspection tour, and target dates can be established for taking corrective action.

The audit checklist covers the home, buildings, machinery, fire prevention, electrical safety, and numerous other potential hazard areas. You can boost safety awareness by involving school age children in the inspection. (Who knows -- they may spot hazards that we overlook!)

When taking stock of your farm's safety status, think about 'close calls' that could have resulted in serious injury or death. Try to determine the factors responsible for the near-accident, and take steps to minimize the chance of it happening again. It may be a worthwhile exercise to discuss the incident with children who are old enough to comprehend.

Good housekeeping is very important to maintaining a safe farmstead. Many children have been injured by tripping over objects that were left lying on the ground. Other youngsters have been hurt when they became entangled in old fence wire or baler twine. All tools and objects should be neatly stored; everything else should go to the dump or recycling centre.

When storing items, be careful not to create new hazards, for example, a couple of straw bales below a fuse box can put the danger of electrocution within a child's reach. Heavy objects should never be left leaning against walls or fences. Children may try to climb these items, and could fall or even pull the object on top of themselves.

According to the laws of Ontario, dangerous materials require special consideration. Pesticides and other toxic chemicals should be kept in locked storage and in their original containers. Empty containers should be rinsed out and kept in locked storage until they are disposed. Secure storage for treated seed and fertilizer is also important. Warn children of the dangers posed by these materials, in the strongest possible terms!

Supervision is Still Number One

Small children must be supervised at all times. It's simply not enough to tell them to "stay away" from the work area. Toddlers want to be with their parents, and tend to forget what they were told when they see Daddy driving up on the tractor.
Childcare poses a difficult problem for many young farm families. There will be times when both Mom and Dad have to pitch in to make sure that fieldwork is completed on time.

Try to anticipate when you will need a baby-sitter or daylong child care. Do you have relatives or neighbours who could look after the youngsters during busy periods? Child care resources are being developed in some rural municipalities.

Under some circumstances, you may simply have to isolate preschoolers in a ‘safe’ area. A fenced area near the house is a good idea. One dairy farmer constructed a playroom in the barn. Glass doors make it possible to keep an eye on the youngsters while doing the chores.

Even when children are confident in a safe room or yard, adult supervision is required. Kids may find a way to get out, and can still get hurt while they are just playing.

Training for Older Children and Teens

Direct supervision becomes less important with older children and teens. However, parental direction remains crucial. You have to be firm about the rules. Certain areas like pesticide storage, large animal pens, silos and grain bins, farm machinery shed, etc. should be off limits.

Dress Kids for Safety

Appropriate protective gear is essential for safety in the farm workplace. It is equally important to children's well-being, whether they are teens helping with farm work or toddlers playing in the yard.

Everyone should cover up for protection against sunburn. The earlier in life that ultraviolet damage to skin occurs, the greater the potential for cancer development later. When children start riding bikes, (All Terrain Vehicles (ATV)'s, etc., make it a rule that they must always wear helmets.

Older children working on the farm should wear protective gear to suit the job, e.g. safety shoes, hard hats, gloves, respiratory protection, etc.

Protect Your Children's Hearing

Children working on the farm are at the same risk of suffering hearing loss as adults. To prevent them from experiencing early hearing loss, keep them away from loud machinery. Do not allow them in confined livestock areas, especially at times when animals are most likely to be very loud. When loud noises cannot be avoided, provide children with well fitted hearing protection devices.
Animal Safety

Children love animals, but animals can sometimes be unpredictable in nature. Children need to be taught how to work around animals. Keep livestock in pens or fenced-in areas and teach children to:

- Respect all animals
- Be calm and move slowly around animals
- Stay away from animals with babies, and be mindful to stay away from the back end of animals
- Approach large animals at the shoulder
- Never handle stallions, bulls, rams and boars
- Always have an escape route

Help Is Available

Check with your children's teachers to find out if farm safety courses are being covered in the curriculum. If not, take your concerns to the principal and/or the School Board.

Send your kids to 'Safety Information' seminars and 'Farm Safety' day camps when these events take place in your area. 4-H Farm Safety Clubs operate in many counties. Please click on Farm Safety Association for more information

The Farm Safety Association maintains a comprehensive library of literature and videos for children. Family viewing of safety videos is an excellent way to heighten safety awareness. Please call 1-877-494 9777 to obtain a list of available material.

Child Safety is in Your Hands

Remember that children sometimes are careless. They may try to do too much, and sometimes deliberately disobey their parents. In the end, child safety is the responsibility of adults. No matter how carefully they are educated, children lack the experience and knowledge to make all the right choices on their own.
Growing up on the farm provides children with the opportunity to learn many valuable skills they would otherwise not be exposed to in an urban environment. With the right training and hazard awareness, they will develop into strong, confident farm workers.

**Canadian Agricultural Safety Association (CASA)**

"The Canadian Agricultural Safety Association (CASA) is a national non-profit organization dedicated to improving the health and safety of farmers, their families and workers. CASA works collaboratively with agricultural safety and health specialists and producers in all provinces and territories to promote health and safety on Canadian farms and ranches.

CASA provides national leadership and direction for agricultural health and safety, to reduce injuries and lessen their negative impact on farmers, their families and workers. CASA’s long term objective is to ensure that no one is hurt farming."

CASA contains a multitude of safety resources including photography, presentations, audio and video formats and teaching kits.

If you would like to read more information about this organization, please click on Canadian Agricultural Safety Association (CASA) or contact them via the information below.

3325 – C Pembina Highway
Winnipeg, MB R3V 0A2
Email: info@casa-acsa.ca
Phone: 1-877-452-2272 or (204) 452-2272
Fax: 1-877-261-5004 or (204) 261-5004

**A Child Safety Checklist**

The following list covers several of the most important threats to children's health and safety on the farm. It is by no means comprehensive, but can serve as a starting point toward making your farm a safer place. Discuss the items on the list point-by-point with your children. See who can point out additional safety hazards. This exercise will help boost overall family safety awareness.

- No riders! NO RIDERS! NO RIDERS!
- Before moving equipment (especially when backing up), make sure you know where the children are and that they are in a safe environment.
- Don't allow children to play with idle machinery.
☐ Leave hydraulic equipment (such as frontend loaders, 3-point implements, combine heads, etc.) in the 'down position'.

☐ When tractors and self-propelled machines are parked, brakes should be in lock position and the keys should be removed from the ignition.

☐ Always leave a tractor (Power Take-Off) PTO lever in the 'neutral' position.

☐ Keep machinery in good repair. Pay particular attention to protective shielding, (Roll Over Protective Structure) ROPS, and seat belts.

☐ Safety training must be completed before children are allowed to operate machinery. A degree of supervision will continue to be needed until teens become experienced operators.

☐ Farm ponds and manure storage structures should be surrounded by childproof fencing.

☐ Place fixed ladders out of reach, or fit them with a special barrier. Store portable ladders away from dangerous areas.

☐ Practise good housekeeping. Don't leave items lying around that could pose a tripping hazard. Heavy objects should not be left leaning against walls or fences.

☐ Livestock facilities and operating machinery should be 'off- limits' to young children. Adult supervision is required at all times.

☐ Shield dangerous machinery components, electrical boxes, and wiring out of reach of small children or fit with locking devices.

☐ Store pesticides and other dangerous chemicals in locked facilities.

☐ Place warning decals on all grain bins, silos, wagons, and trucks.

☐ Don't start unloading grain from wagons or bins until you have double-checked that no one is inside.

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**Statistical Agricultural Injuries to Children and Youth**

**Fatal Agricultural Injuries by Calendar Year, 1990-2008**

From 1990 to 2008, there were 1,975 agricultural fatalities in Canada. An average of 104 deaths each year. The peak year for fatalities was 1994, with 140 cases (7% of the total number of cases). During the first 10 years of the surveillance period there was an average of 118 fatalities each year. During the last 9 years the average number of fatalities dropped to 89 each year.
Fatal agricultural injuries by age group and gender, 1990-2008
92% of the persons who died in agricultural injury events were male. The ratio of males to females was highest for the 60+ age group (18.8:1), and lowest for the 1 to 14 year age group (4.3:1).

Fatal agricultural injuries by major cause, 1990-2008
70% (1,381) of agricultural fatalities were machine-related. The leading machine related mechanisms of fatal injury were machine rollovers, machine runovers, and machine entanglements. The 594 agricultural fatalities that were non-machine-related (30%) included being struck by an animal or an object, drownings (mainly in children), falls from height, and exposure to toxic substances.

Fatal agriculture bystander runovers by age group, 1990-2008
Of the 83 bystanders runover, more than half (51%) were children between 1 and 9 years of age. Children between 1 and 4 years of age had the highest number of bystander runover fatalities and the highest crude rate of 3.9 fatalities per 100,000-farm population.

Fatal agricultural drownings by drowning location, 1990-2008
Of the 69 non-machine related drowning deaths from 1990 to 2008, 39% occurred in dugouts, 20% in lakes or ponds, 12% in rivers or streams, and 10% in manure pits or sewage lagoons. More than half, 53% of the victims were less than ten years old.

Fatal agricultural injuries by relationship to farm operator, 1990-2008
Of the cases where the relationship between the victim and the farm operator was known, 47% of the persons killed in agricultural injury events were farm owner/operator. A further 14% of the victims were children of farm owner/operator and 11% were hired workers.

Fatal agricultural injuries in children and youth by calendar year, 1990-2008
From 1990 to 2008, there were 248 agricultural fatalities among children and youth under 15 years of age. This is an average of 13 per year. The peak year for fatalities was 1990, with 26 cases (10% of the total number of cases). The average number of child fatalities per year was 16 for the first ten years of the surveillance period, and 10 deaths for the last nine years.

Fatal agricultural injury rates in children and youth by year (age-std), 1990-2008
From 1990 to 2008, the rate of non-machine related fatalities increased an average of 2.7% annually. The number of non-machine fatalities has remained consistent, but the number of children on farms has decreased over the years, thereby increasing the rate. The rate of machine related fatalities decreased an average of 1.5% annually. The number of fatalities has decreased over the years.

Fatal agricultural injuries in children & youth by age group and gender, 1990-2008
From 1990 to 2008, 81% of the child victims of agricultural fatalities were male. The ratio of males to females was highest for the 10 to 14 year-old age group (7.4:1), and lowest for the 5 to
9 year-old age group (3.4:1). This age group experienced the highest proportion of females killed than in any other age group, including all adult age groups. 44% (109) of the children killed in agricultural injury events from 1990 to 2008 were less than five years old, including 17 one-year old toddlers and 68 two and three-year old toddlers. 81% of the children who died were boys.

**Fatal agricultural injuries in children and youth: the relationship to agricultural work, 1990-2008**

Although 71% of the agricultural fatalities among children were work related, in most cases (79%) the victim was not performing the work. He or she was killed by someone else who was engaged in agricultural work. Non-work related agricultural deaths included those due to hazards of the farm environment such as large animals, improperly stored equipment, barn lofts, dugouts, sewage lagoons, and troughs.

**Fatal agricultural injuries in children and youth by major cause, 1990-2008**

63% of agricultural fatalities in children were machine-related. These included machine runovers, machine rollovers, and machine entanglements. The 37% of agricultural fatalities that were non machine-related included drownings, being struck by objects, being caught under heavy objects and falling from a height.

**Fatal agricultural injuries in children & youth by cause of injury, 1990-2008**

For children aged fourteen 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%). In children, just three mechanisms of injury (machine runovers, drownings and machine rollovers) were responsible for 67% of all deaths. Runovers and drownings were most common among young children. Older children and teenagers were more often killed in machine runovers and rollovers.

**Fatal agricultural injuries in children and youth by location of injury, 1990-2008**

The most common locations for child agricultural fatalities were farmyards (29%), fields (18%), water sources (16%), and barns (8%). At least 45.0% of the deaths occurred in locations close to the farm home such as the farmyard, farm driveway, barn, and sheds. Leaving small children to play unsupervised near the farm home is a dangerous practice.

**Fatal agricultural injuries in children and youth by relationship to farm operator, 1990-2008**

From 1990 to 2008, 73% of persons aged one to fourteen killed in agricultural injury events were children of owner/operators. A further 10% were child visitors and 9% were other relatives of farm owner/operator.
References

Agriculture Injuries in Canada for 1990-2000, Canadian Agricultural Injury Surveillance Program (CAISP).

Dr. Richard Clark of Ohio State University

Farm Safety Association, Ontario

Government of Alberta, Agriculture and Rural Development

Canadian Agricultural Safety Association (CASA)