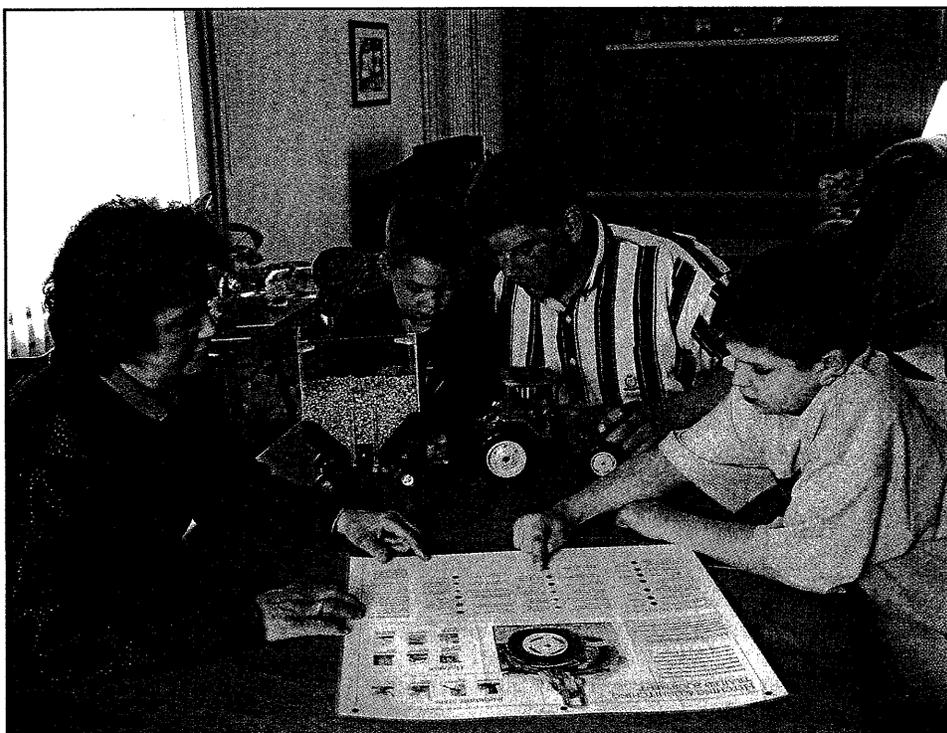


Helping kids do the job safely

This special report is brought to you by the
National Children's Center for Rural and
Agricultural Health and Safety
and *Successful Farming Magazine*



Photograph: Ron Van Zee

Kevin and Julie Paap review new farm safety guidelines with sons Andy and Matt. The guidelines are designed to help parents assign chores based on child development principles.

By Cheryl Tevis
Farm Issues Editor

Kevin Paap is a fourth-generation farmer. He knows that learning responsibility, developing a strong work ethic, and spending time together are the primary reasons that parents assign farm chores to their kids.

When he leaves home for his off-farm job, his wife, Julie; assumes the work on their Garden City, Minnesota, farm. "Our sons help somewhat, when they can," he says. "You always have to consider age-appropriate jobs."

Kevin knows that many injuries occur because children are involved in farm work that exceeds their physical and mental abilities. His other job, as a farm safety and

Emergency Medical Services instructor, serves as an acute reminder of the human tragedy behind these statistics:

- About 104 children die each year from ag injuries.
- Children younger than 16 years of age are victims of up to 20% of all farm fatalities in both the U.S. and Canada.
- Children who do not live on farms are victims of one-third to one-half of nonfatal childhood ag injuries.

This 16-page exclusive report, sponsored by Texaco, features a preview of new guidelines designed to help parents incorporate their children's developmental abilities into decisions they make about assigning farm chores. 



Helping kids do the job safely

Best Practices

A key to injury prevention is matching a child's developmental capabilities and level of adult supervision with a task.

How much weight can a 10-year-old safely lift? When is my child ready to drive a tractor?

Through the years, parents have asked these questions – and more. For the first time, the *North American Guidelines for Children's Agricultural Tasks* (NAGCAT) offers parents a unique resource in assigning work tasks to children ages 7-16.

"The *Guidelines* do not tell how to get the job done—they help parents use a developmental checklist to assess a child's readiness for the job, based on the steps involved," says Barbara Lee, director, National Children's Center for Rural and Agricultural Health and Safety, a program of the Marshfield (Wisconsin) Clinic and a site of the Children's Safety Network.

Physical, emotional and cognitive



Photograph: Ron Van Zee

A focus group of farm women give feedback on the *Guidelines* to Chris Hanna at the National Children's Center for Rural and Agricultural Health and Safety in Marshfield, Wisconsin. A second focus group in Illinois also was held.

readiness are key issues addressed in the *Guidelines*.

"We're pleased to see attention to this important issue by a national team effort involving parents, specialists in agricultural safety, child development and other key partners," says Linda Rosenstock, M.D., director, National Institute for Occupational Safety and Health.

Dennis Murphy, Pennsylvania State University ag safety and health specialist, is one of nine primary advisers from Canada and the U.S.

who has served on the project team for the past four years.

He's quick to admit that the issues are challenging. Farm economics, combined with the seasonal, unpredictable nature of work, availability of labor, and safety of equipment often impede efforts. The situation is complicated by the fact that home is the workplace. The potential for injury is an everyday occurrence.

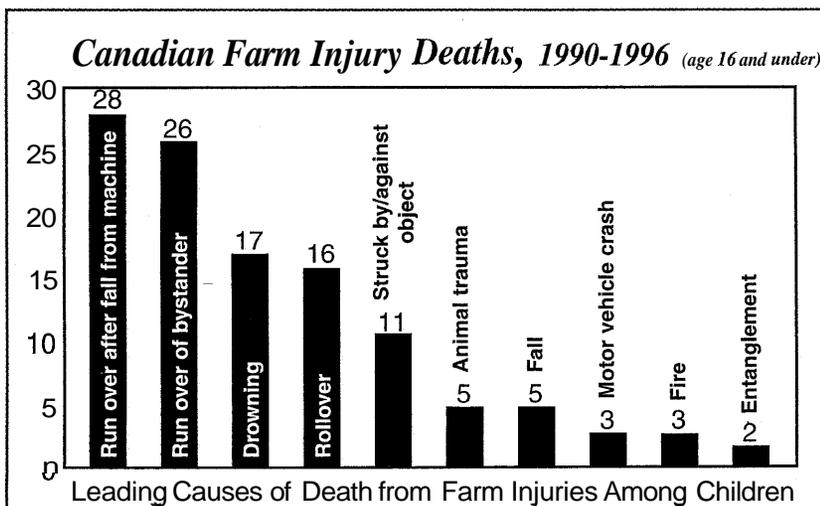
"Agriculture gets a black eye because of its high injury rate and the number of childhood fatalities," Murphy says. "We need to be proactive and take steps to improve the safety and health of children so others won't attempt to do it for us."

Development is missing link

Surveys indicate that parents assign chores based primarily on intuition and the age of the parent when he or she first performed a task.

Child development issues have not been a major influence. "When our children are infants and toddlers, we always check developmental milestones," says Barbara Marlena, project manager for the *Guidelines*. "After they start school, major milestones focus on height and weight."

She says parents often mistake



physical signs of age for ability. "We need to consider balance, strength, reaction time, coordination, attention span and memory," she points out.

Furthermore, many parents don't consider that teens adjusting to rapid growth spurts can become clumsier and less coordinated.

"This is a critical time to reassess whether your child still can perform assigned tasks," Marlenga says.

Safety standards based on adult-sized bodies may be inadequate to protect growing children. "Stacking bales or loading seed bags during a time of rapid growth may stress adolescent joints, making them prone to chronic back pain," she says.

The duration of a chore also can be a hazard. As duration increases, the age set for the task should increase. "We recommend 10-minute breaks every hour for kids," Marlenga says.

Of course, kids develop at different rates. "When parents select a game or toy for a child, they often consult

How the Guidelines could save lives

A 10-year-old boy was pulling a baler and a hayrack loaded with bales of hay on a public highway and attempted to make a turn onto a gravel road.

When the rear wheels of the tractor left the asphalt surface and contacted the gravel road, the tractor began to slide. The momentum of the baler, hayrack and load of hay apparently caused the tractor to slide to the edge of the road and overturn. The child was pinned underneath the tractor as a result of the rollover.

The use of the *Guidelines* may have prevented the child's death. The *Guidelines* recommend that children *not* tow more than one piece of equipment because of the

increased hazard and complexity of towing multiple implements.

In general, a 10-year-old child is a concrete thinker; that is, the child would not have the cognitive ability to anticipate the hazards associated with turning a vehicle, the proper speed for turning, or the effect of a weighted load on turning maneuvers. Further, a 10-year-old child does not have the ability to problem-solve when placed in a hazardous situation.

The *Guidelines* suggest that a child be at least 12 to 13 years old before beginning simple tractor operations. The *Guidelines* recommend that children be at least 16 years of age before they drive on public roads. ■

Youthful input vital to the process

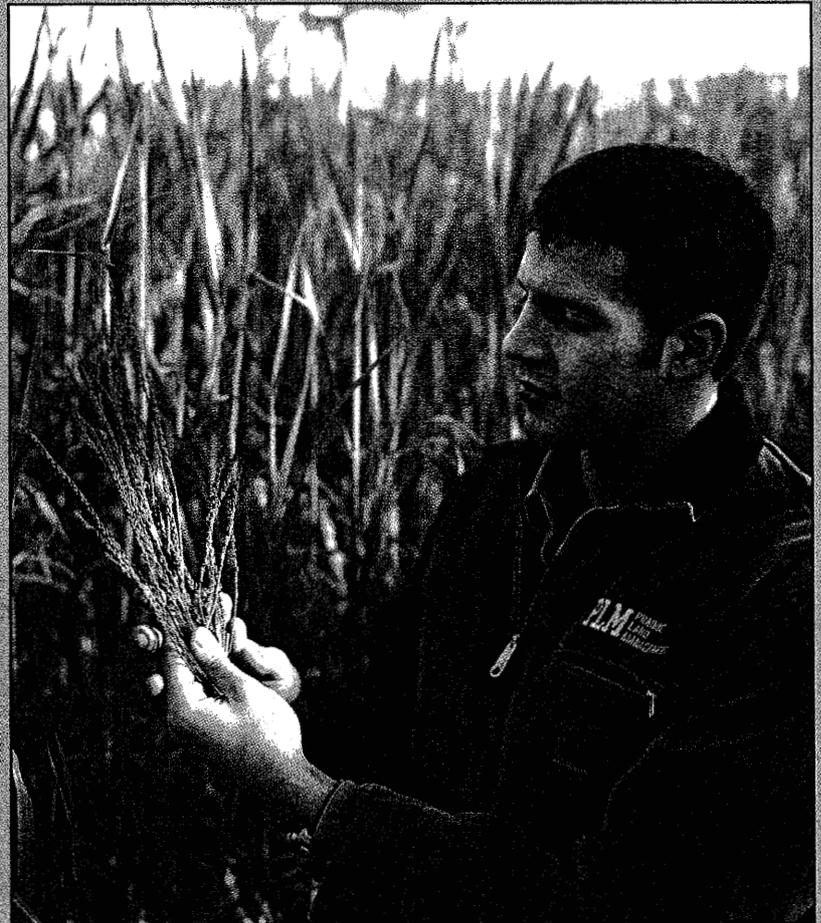
Joshua Zeithamer is one of five youth advisers who provided input into the development of the *North American Guidelines for Children's Agricultural Tasks*.

Zeithamer, 17, and the others brainstormed ideas during conference calls and attended work sessions to talk to primary advisers and field questions.

"It's a great start, and I'm very enthused," he points out. "We need to take a stand on safety. The *Guidelines* can be another useful tool in preventing injuries on farms and raising awareness."

Zeithamer, who received a three-year grant to plant native grasses and flowers on 31 acres, tries to be aware of hazards in his work.

"Agriculture is in my roots," he says. "When older farmers talk about their near misses, it's almost as if they're proud of these. It's up to the younger generation to change this attitude about safety and this tradition of risk taking." ■



Photograph: Ron Van Zee



Helping kids do the job safely

Best Practices

A child learns safe practices by watching other people's behavior. It is important for adults to always role model safe practices.

age guidelines on the box," Lee says. "Like these recommendations, the guidelines are a general reference, requiring further adult assessment and decision making."

The problem often arises because parents feel their own child is exceptional. A total of 43% said their child was "more capable" than other children the same age and gender, according to a 1989 *Successful Farming* reader panel survey.

Teaching new skills

Parents also may underestimate the extent of the hazard or risk. "Parents sometimes don't think they have to explain why it's important to do a job in a particular way," Murphy says. "But when your child has to evaluate new information or adjust to a new



Photographs: Dave Adams

Bill Steinke, University of California-Davis, works with youth to help explain how the *Guidelines* will help them to do the job safely. They are written and illustrated to address the geographic and ethnic diversity of agriculture.



situation, this understanding of the 'whys' then can be applied from one situation to the next."

Kevin Paap sees the consequences of assigning inappropriate farm chores to kids. When he's asked to demonstrate farm rescue at day camps, he often brings his sons Matt, 11, and Andy, 8. "Our boys get more exposure to farm safety than other kids their age because I spend so much time teaching it," he says.

Supervision also is a key issue. If a parent or adult is out of sight or hear-

ing for more than five minutes, the *Guidelines* recommend that a cell phone, pager or two-way radio should be provided. In case of an equipment breakdown, children should be instructed to shut off the machine and get an adult to fix it.

Diversity of ag

The *Guidelines* are based on the job hazard analysis framework used in industry and address major agricultural tasks from the perspective of youth. Advisers consulted with child development specialists, industrial hygienists, ergonomic experts, pediatricians, farmers and parents to write the *Guidelines*. This phase was followed by a process involving about 120 secondary reviewers.

Two types of resources will be available. The first, a manual with detailed analyses of jobs, the hazards and the recommended procedures and bibliography, is intended for ag safety and health professionals. Parents will be able to request illustrated posters for 62 specific chores beginning June 21.

All *Guidelines* are based on ideal conditions. If weather, terrain, equipment or other conditions change, then the child's involvement in the

Project team

BOB AHERIN, University of Illinois

GLEN BLAHEY, Manitoba Labour in Winnipeg

BRUCE JOHNSON, Farm and Ranch Safety and Health Association, British Columbia

CAROL LEHTOLA, University of Florida

DENNIS MURPHY, Pennsylvania State University

WILLIAM PICKETT, Queens University in Ontario

JOHN SHUTSKE, University of Minnesota

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The Center is funded through a cooperative agreement with the National Institute for Occupational Safety and Health and funds from the Maternal and Child Health Bureau of Health Resources & Services Administration



Helping kids do the job safely

Best Practices

A child learns best by being shown how to do the job at the work site.

specific task should be reassessed.

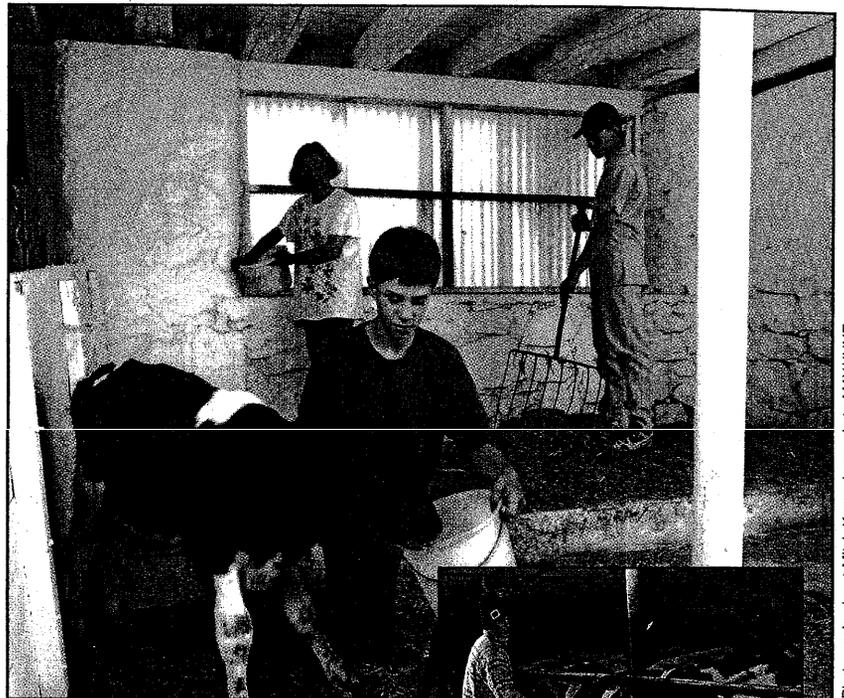
Guidelines for some chores or jobs, such as applying chemicals, are not available because advisers did not feel they were appropriate for kids.

"The guidelines are general and are likely to err on the side of safety," Lee points out.

The *Guidelines* also are aimed at a diverse audience.

"We want the *Guidelines* used by nonEnglish-speaking families in agriculture," says Bill Steinke, University of California-Davis, an adviser. "They need to be easy to understand and depict visually."

The *Guidelines* will be translated into French by the Canadian government, and several of the *Guidelines*



Photographs: inset-Mitch Kezar, large photo-MAY/JUNE

There's always work at the Dennis and Allan Cihlar farm near Mosinee, Wisconsin. Above, Danny and his brother, Mark, do chores, as their aunt, Sandi, supervises. At right, her son, Nathan, feeds cattle.

will also be available in Spanish.

"The advisers made an effort to cover both the geographic diversity and the diversity of agricultural crops," says Bruce Johnson, general manager of the Farm and Ranch Safety and Health Association, Langley, British Columbia.

"In our province, we have a strong 4-H program," he adds. "I feel that the *Guidelines* will serve as an excellent resource to complement this

valuable program for our youth."

The official launch of the *Guidelines* is set for the annual meeting of the National Institute for Farm Safety on June 21 in Ocean City, Maryland. For more details, or to read more guidelines, visit the website at www.nagcat.org.

Merge public, private efforts

Lee says that this initiative may be a model for an effective public- and private-sector partnership. "The *Guidelines* were begun with government funding and grants, but we plan to continue our work and development with help and resources from the private sector," she says.

She adds, "We plan to work closely with key organizations, such as Farm Safety 4 Just Kids and the Canadian Coalition for Agricultural Safety and Health to distribute and promote the *Guidelines*."

As agricultural practices and technology change, Lee expects the *Guidelines* to evolve. On farms that become more like "firms," she says it's likely that fewer kids will be involved. On the other hand, an increasing number of part-time farmers will depend on older equipment with fewer safety features. Evening and weekend work on these farms

How the Guidelines could save lives

A 7-year-old boy was helping to move some animals through a shed. He blocked off an exit so a yearling heifer could not escape. The heifer rushed him and head-butted the child, throwing him over a low wall and onto a concrete floor.

The use of the *Guidelines* may have prevented the child's death. They recommend that an adult handle young animals that are likely to exhibit unpredictable behavior.

A 7-year-old child has a slow reaction time, making tasks involving animals and machinery very dangerous. Also, a 7-year-old child is a concrete thinker and does not have the cognitive ability to antici-

pate danger, recognize hazards, or problem solve to avoid injury.

The *Guidelines* recommend that a child be 12 to 13 years before leading an animal on a halter and 14 to 15 years to work with unrestrained large animals. The *Guidelines* also recommend that children receive training in animal behavior prior to taking on the work of animal handling.

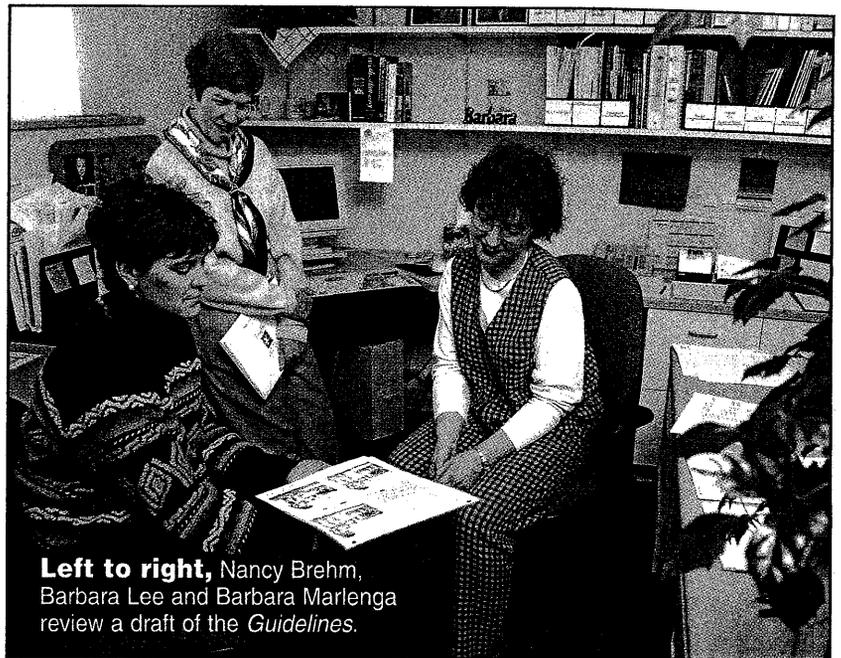
The *Guidelines* suggest that a 7- to 9-year-old could be involved in feeding milk to calves or scooping grain into a feed trough, provided that a barrier is maintained between the child and the animal. ■



Helping kids do the job safely

Best Practices

Keep in mind that rebellious, risk-taking behavior and perceptions of immortality put teens at increased risk of injury.



Left to right, Nancy Brehm, Barbara Lee and Barbara Marlenga review a draft of the *Guidelines*.

may involve kids more than ever. "Today's poor farm economy may cause more kids to pick up the slack while their parents work off farm," agrees Kevin Paap. "This could place more kids at risk. I know what it's like to try to make a living and how it is to raise kids on the farm. I have a better

understanding of what could happen and how bad it could be because of my rescue work. If more adults could ride with me in the ambulance, they would look at the risks differently."

Being a parent always has been a balancing act. Farm parents, in particular, face unique challenges. Now,

for the first time, they can obtain guidelines to help their children gain a work ethic and experience, with the lowest possible risk.

"Our top priority always comes back to children," Lee says. "A child's first 'job' should be to grow up healthy, happy and strong." **SF**

62 Guidelines available to help assign farm chores

ANIMAL CARE

1. Catching and holding a pig for treatment
2. Cleaning service alley
3. Feeding milk to calves
4. Feeding of haylage/corn silage/high-moisture corn
5. Feeding square bales of hay to cows
6. Feeding square bales of hay to horses
7. Leading/grooming animals (beef or dairy)
8. Milking with a pipeline
9. Poultry housing and handling facilities
10. Working with large animals

GENERAL ACTIVITIES

1. Using ATV for farm work
2. Cleaning calf hutches and pens
3. Cleaning grain bins
4. Composting operations
5. Irrigation, installation, operation
6. Operating a skid steer loader
7. Operating farmstead equipment
8. Repairing fence
9. Running pressure washer
10. Using a tractor mounted front-end loader

HAYING OPERATIONS

1. Baling hay
2. Cutting hay with a pull-type mower/conditioner
3. Loading square bales onto the wagon

4. Moving round bales with a three-point hitch bale mover
5. Raking hay
6. Unloading hay/hauling load of hay from field

IMPLEMENT OPERATIONS

1. Fieldwork with three-point implement
2. Fieldwork with PTO implements
3. Fieldwork with remote hydraulics
4. Fieldwork with self-propelled equipment
5. Fieldwork with trailing implement
6. Planting small grains
7. Spreading solid manure
8. Unloading grain
9. Unloading silage into an upright silo
10. Using an auger wagon

MANUAL LABOR

1. Bending
2. Climbing
3. Detasseling corn
4. Hand harvesting vegetables
5. Hand weeding
6. Harvesting strawberries
7. Harvesting tree fruit
8. Lifting
9. Picking rock
10. Pruning trees and vines

SPECIALTY PRODUCTION

1. Harvesting ginseng berries
2. Harvesting ginseng roots

3. Trimming Christmas trees
4. Riding setter to plant tobacco in field
5. Topping tobacco
6. Stripping tobacco
7. Harvesting tobacco
8. Working tobacco in the shed/house
9. Fieldwork with horses and trailed implements
10. Hitching/unhitching trailed implement to horses

TRACTOR FUNDAMENTALS

1. Tractor operation chart
2. Driving a tractor
3. Hitching/unhitching trailed equipment
4. Hitching/unhitching three-point implement
5. Connecting/disconnecting hydraulics
6. Connecting/disconnecting PTO

To order the *Guidelines*, contact:
Gemppler's, Inc.
Belleville, WI
Phone: 800/382-8473
Fax: 800/551-1128
Web site: www.gempplers.com

A special "Parent Collection" of the *Guidelines*, containing 52 illustrated posters, can be ordered for \$39.90, including postage.

Feeding milk to calves

Adult responsibilities

ADULTS NEED TO MAKE SURE:

- Ventilation system is working before the child enters a closed building
- Work area has no hazards
- A barrier stands between the animal and the child
- Hot water heater is set lower than 120 degrees Fahrenheit or 50 degrees Celsius

Can your child do this job?

ABILITY

Is the child comfortable around calves?

- Yes
- No. **STOP** STOP! Children who are uncomfortable around animals are more likely to be injured.

Does the container of milk the child will lift weigh less than 10-15% of the child's body weight?

- Yes
- No. **!** CAUTION! An adult should lift the bucket or bottle.



Main Hazards



Slippery/uneven surface can lead to slips, trips and falls



Weight of milk can strain muscles

Does your child have good eye-hand coordination?

- a. Can he or she catch a basketball?
- b. Can he or she pour milk into a cereal bowl?

Yes

No. **!** CAUTION! An adult should fill the bottles and put them in the holders.

Can the child understand and repeat from memory a 5-step procedure?

Yes

No. **!** CAUTION! Children who can't remember the steps to a job should be watched constantly.

Does the child have at least a 15-20 minute attention span?

For example, can the child play a board game for 20 minutes?

Yes

No. **STOP** STOP! Children who work beyond their attention span are easily distracted and more likely to be injured.

Supervision

What's the right amount? Here are suggestions—but remember, it depends on the child.

Age 10-11: **WATCH** constantly at first. When the child shows he or she can do the job, **CHECK** every few minutes.

TRAINING

Has an adult demonstrated feeding milk to calves on site?

Yes

No. **STOP** STOP! Children learn best when shown how to do the job at the work site.

Has the child shown he or she can do the job safely **4** to **5** times under close supervision?

Yes

No. **!** CAUTION! An adult must watch constantly until the child shows he or she can do the job.

SUPERVISION

Can an adult supervise as recommended?

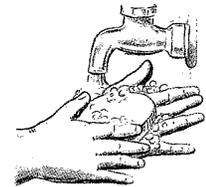
Yes

No. **STOP** STOP! The right level of supervision is key to preventing injuries.

Remember



Non-skid shoes



Good handwashing

Hand-harvesting vegetables

Adult responsibilities

ADULTS NEED TO MAKE SURE:

- Child has safe transport to the field
- Re-entry standards are followed
- Work area has no hazards
- Child has no insect allergies
- Child wears long sleeve shirt, long pants, wide brim hat and sunglasses
- Break areas are provided away from the work site with bathrooms and water for drinking and washing hands
- Child has at least one ten-minute break every hour
- Child drinks a quart of fluids every hour

Can your child do this job?

ABILITY

Can the child bend and lift safely?
(See "Bending"/"Lifting")

- Yes
- No. **STOP** STOP! Children must be able to bend and lift correctly in order to do this job safely.

Does the child have at least a 15-20 minute attention span? For example, can the child play a board game for 20 minutes?

- Yes
- No. **STOP** STOP! Children who work beyond their attention span are easily distracted and more likely to be injured.

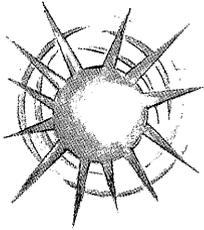


Does the child have to carry the filled container less than 10-15 yards?

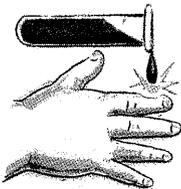
- Yes
- No. **!** CAUTION! An adult should keep the collection point close by or carry filled containers to the collection point.

Main Hazards

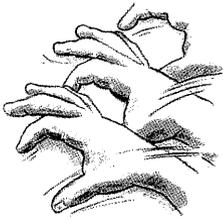
Remember



Sun can cause heat exhaustion



Contact with chemicals can cause disease, now or later



Repetitive motion can strain muscles and injure back and joints

Are cutting tools the right size for the child?

- Yes
- No. **STOP** STOP! The wrong size tools can cause injury.

Does your child have good eye-hand coordination?

- a. Can he or she catch a basketball?
- b. Can he or she pour milk into a cereal bowl?
- Yes.
- No. **STOP** STOP! Good eye-hand coordination is needed to prevent injury.

If the child is 12 or older, can he or she repeat a manual task for 50 minutes without becoming exhausted?

- Yes.
- No. **STOP** STOP! Children who work beyond their endurance are more likely to be injured.

Does the child do things that seem dangerous for the thrill of it?

- Yes **!** CAUTION! Children who take risks or behave dangerously need close supervision. Limit cutting with a knife.
- No.

Does the filled container the child will carry weigh less than 10-15% of the child's body weight?

- Yes
- No. **!** CAUTION! An adult should carry the filled container.

TRAINING

Has the child been trained to use cutting tools?

- Yes
- No. **STOP** STOP! Tools must be used safely to prevent injury.

Has the child been trained on lifting techniques?

- Yes
- No. **STOP** STOP! Lifting incorrectly can cause back injury.

Has an adult demonstrated hand-harvesting vegetables on site?

- Yes
- No. **STOP** STOP! Children learn best when shown how to do the job at the work site.

Has the child shown he or she can do the job safely 4 to 5 times under close supervision?

- Yes
- No. **!** CAUTION! An adult must watch constantly until the child shows he or she can do the job.

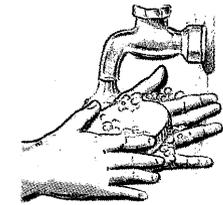
SUPERVISION

Can an adult supervise as recommended?

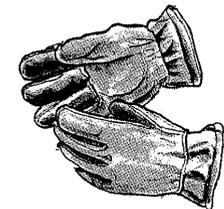
- Yes
- No. **STOP** STOP! The right level of supervision is key to preventing injuries.



Non-skid shoes



Good handwashing



Gloves (may be leather or moisture resistant)

Supervision

What's the right amount? Here are suggestions- but remember, it depends on the child.

Age 7-9:
LIMIT job to 15 minutes.
NO cutting tools.
WATCH constantly.

Age 10-11:
LIMIT job to 20 minutes.
NO cutting tools.
WATCH nearly constantly.

Age 12-13:
WATCH constantly at first if the child uses cutting tools. When the child shows he or she can do the job, CHECK every few minutes.

Age 14-15:
CHECK every few minutes. When the child shows he or she can do the job, LEAVE him or her for 15 to 30 minutes.

Trailed implements

(hitch/unhitch)

Adult responsibilities

ADULTS NEED TO MAKE SURE:

- Implement is in good working order
- All safety features are in place
- Work area has no hazards

Can your child do this job?

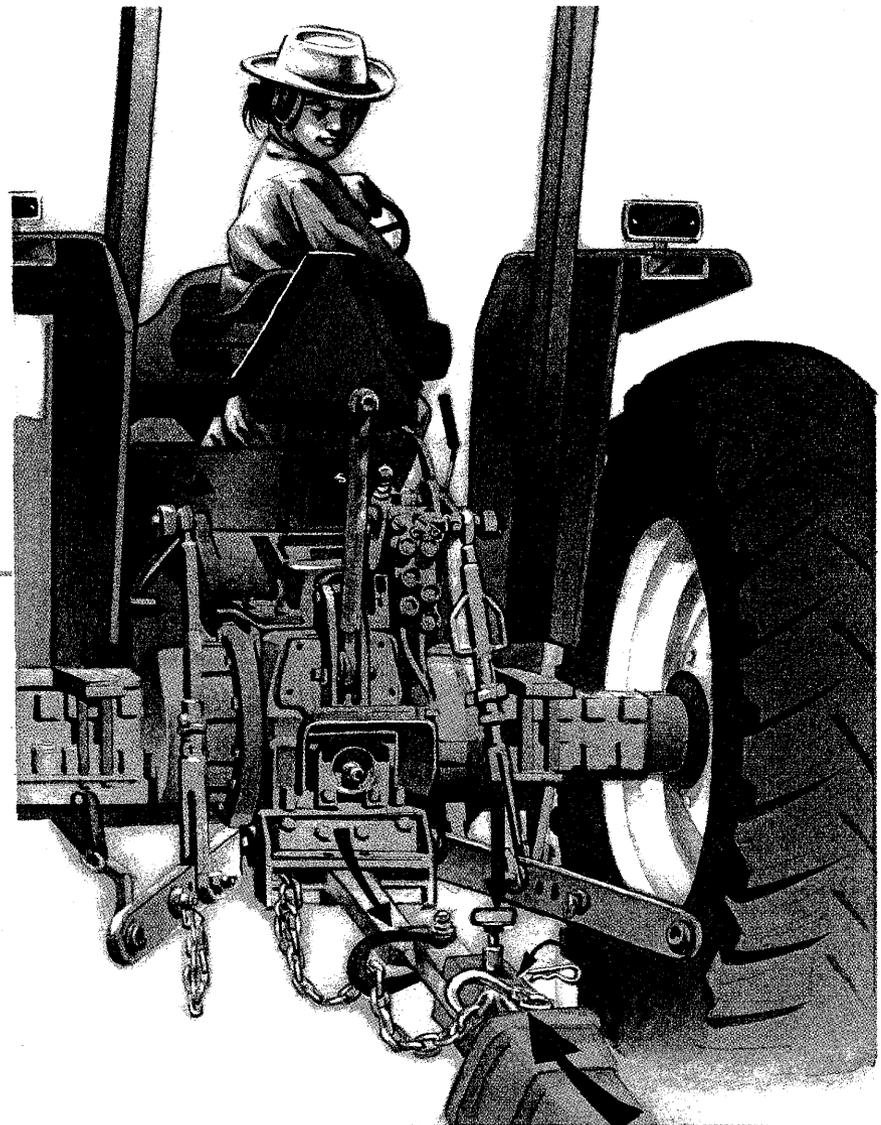
ABILITY

Can the child drive a tractor?
(See "Driving a Farm Tractor")

- Yes
- No. **STOP** STOP! Children must be able to drive a tractor to do this job safely.

Does the child have good peripheral vision?
For example, while looking straight ahead, can the child see your finger entering his or her field of vision at shoulder level?

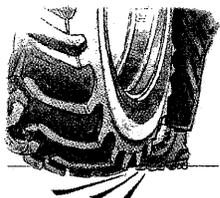
- Yes
- No. **STOP** STOP! Children with limited vision may not see people or obstacles in the work area.



Main Hazards



Slippery surfaces can lead to slips and falls



Tractor rollover can cause death or disability



Second person can be pinned between tractor and implement

Can the child understand and repeat from memory a 10-step process?

- Yes
 No. **STOP** STOP! Children who can't remember the steps to a job are more likely to be injured.

Can the child react quickly?

- Yes
 No. **STOP** STOP! Children need quick reactions to avoid injury.

Supervision

What's the right amount? Here are suggestions—but remember, it depends on the child.

Age 12-13: LIMIT to tractors of less than 70 horsepower. WATCH constantly at first. When the child shows he or she can do the job, CHECK every few minutes.

Age 14-15: CHECK every few minutes.

Age 16+: A child must be 16 or older to drive an articulated tractor or drive on a public road. When the child shows he or she can do the job, LEAVE him or her to do the job.

If a second person assists with hitching:

Age 16+: WATCH constantly at first. When the child shows he or she can do the job, CHECK every few minutes.

Does the implement tongue that the child will lift weigh less than 10-15% of the child's body weight?

- Yes
 No. **STOP** STOP! Children lifting more than 15% of their body weight are more likely to injure their backs.

TRAINING

Has the child been trained on lifting techniques?

- Yes
 No. **STOP** STOP! Lifting incorrectly can cause back injury.

Has an adult demonstrated hitching the trailed implement on site?

- Yes
 No. **STOP** STOP! Children learn best when shown how to do the job at the work site.

Has the child shown he or she can do the job safely 4 to 5 times under close supervision?

- Yes
 No. **!** CAUTION! An adult must watch constantly until the child shows he or she can do the job.

SUPERVISION

Can an adult supervise as recommended?

- Yes
 No. **STOP** STOP! The right level of supervision is key to preventing injuries.

Remember



Non-skid shoes



Hearing protection