

4-H Tractor Operator Program Teaches Employability Skills and Safety to Youth

Abstract

For Michigan State University Extension, the Berrien County 4-H Tractor Operator Program has provided tractor safety education to teens for over 30 years. The certification training satisfies current requirements for operation of a 20 PTO HP or greater agricultural tractor by 14- and 15-year-old youth employed on property *not* owned, leased, or operated by a parent or legal guardian. Parents say the program, enhanced by the Gearing Up for Safety curriculum, allows youth to operate equipment legally, be employable, and increases self-confidence, emergency preparedness skills, and knowledge.

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Background

The Berrien County, Mich. 4-H Tractor Operator Program, locally known as "TOP," has provided tractor safety certification training to teens for more than 30 years. In 2010, the Bureau of Labor Statistics, U.S. Department of Labor National Census of Fatal Occupational Injuries <<http://www.bls.gov/news.release/pdf/cfoi.pdf>> indicated that agriculture was a more hazardous occupation than firefighting and law enforcement.

According to a spring 2012 study released by the National Agricultural Statistics Service, male youth continue to incur the most injuries, but from the time period of 2001-2009, "agriculture-related injuries to youth under 20 years of age on United States farms have decreased from 13.5% per 1,000 farms in 2001 to 7.2% injuries per 1,000 farms in 2009." This includes employed and non-employed youth (Agricultural Safety: 2009 Injuries to Youth on Farms, 2012).

Teaching Teens Tractor Safety

Per the Gearing Up For Safety curriculum (Purdue University, 2008), "past research and documented experiences in other industries have clearly demonstrated that safety training can make a difference in reducing the potential of injury and death in the workplace. Teaching young workers safe work practices and enhancing their attitudes towards safety can pay big dividends through reduced injuries

and deaths."

Southwest Michigan continues to provide employment opportunities in the agricultural industry, particularly during the growing season. By participating in TOP, young people gain respect for equipment, develop driving skills, build confidence, learn to work as a team, and are better prepared to handle an emergency situation. Successful completion of TOP provides 24 hours of certification training that currently satisfies requirements of the U.S. Department of Labor required for operation of a 20 PTO HP or greater agricultural tractor by 14- and 15-year-old youth employed on property *not* owned, leased, or operated by a parent or legal guardian. In today's world, the size of equipment used for personal mowing needs, landscaping and hobby farming fall into the parameters of our program participants as well.

TOP is learner-centered. "Learning is more effective when it is attractive, fun, exciting, and engaging" (Carroll & Wolfe, 2003). The opportunity to drive a tractor is what brings teens to TOP. A combination of lecture, DVD's, and hands-on learning through such things as demonstrations and TOP quiz bowl anchors participants in tractor safety knowledge. TOP is taught as a 12-week program that is categorized as a 4-H club because of the number of contact hours and in order to provide other 4-H Youth Development opportunities to participants during the participant's year of membership. The program was revised in 2008-2009, at which time the Gearing Up for Safety curriculum was implemented.

The Gearing Up For Safety curriculum has been designed to meet the current safety training requirements contained in the federal Fair Labor Standards Act Child Labor Requirements <<http://www.dol.gov/whd/regs/compliance/childlabor102.pdf>> that apply to youth ages 14 and 15 who are required to have certification training prior to performing certain tasks considered particularly hazardous on farms and ranches. Screened and trained volunteer instructors are involved in the planning, implementation and evaluation along with teaching the following topics based on the Gearing Up For Safety curriculum:

- General farm safety
- Basic tractor operation
- Utility vehicle safety
- Farm/ranch hazards and safety
- First aid and emergencies
- Operating agricultural equipment on public roadways
- Tractor components
- Tractor-powered implements and self-propelled agricultural equipment
- Safe maintenance and repair

- Tractor Operation Performance Skills – The Pre-Operational Checklist and test

Participants have to pass a pre-operational test that demonstrates he/she knows his/her way around the tractor and a written exam to demonstrate knowledge gained. Using experiential learning techniques (Lobley & Peronto, 2007), participants must also navigate and pass a tractor-driving course to graduate and receive certification.

Our program's content enhances participant knowledge and experience related to Michigan Department of Education's Career and Employability Skills Content Standards and Benchmarks for problem solving and understanding systems. In addition, TOP supports national Career and Technical Education standards for Agriculture, Food and Natural Resources Career Pathway's Power, Structural and Technical Systems Pathway by practicing the skills of locating, organizing and referencing written information, problem solving, and teamwork. Simply put, TOP supports and builds employability and life skills for participants to utilize in the future.

Results

During my tenure, 157 14- to 19-year-olds have completed TOP. A recent 10-year review of 89 end-of-program participant evaluations and formative parent evaluations revealed the following.

- As a result of TOP, 64% of participants indicated that they learned to be safer.
- Increased knowledge of tractor operation and maintenance was indicated by 71% of participants.
- In addition, 95% like the hands-on learning approach that includes demonstrations, tractor operator quiz bowl and more.
- More than 50% of youth enjoyed and had fun while participating in TOP.
- When asked if participants would recommend TOP to a friend, 82% indicated yes because participants think that TOP can help save lives, teach their friends to be safer and help them get a job.

Parent/Guardian evaluations revealed the following.

- TOP was a worthwhile experience for their young person to 98% of parents.
- As a result of TOP, 75% of parents said their child gained knowledge.
- Nearly 30% of parents/guardians mentioned that their child had gained confidence as a result of participating in TOP.

Summary

For Michigan, 4-H TOP, meshed together with the Gearing Up for Safety curriculum and community volunteers, continues to model and provide the opportunity for youth to develop skills that help

them succeed—part of Michigan 4-H's Guiding Principles of Youth Development (Michigan State University Extension, 2002). As formal and informal education providers partner with communities to support young people, 4-H TOP continues to be an important and worthwhile experience in Southwest Michigan. In fact, Berrien County's Tractor Operator Program was recognized by the Michigan Association of Extension 4-H Youth Staff with a 2011 Presidential Citation Award.

References

BLS Press Office (2011). *National Census of Fatal Occupational Injuries in 2010*. Retrieved from: <http://www.bls.gov/news.release/pdf/cfoi.pdf>

Carroll, J. B., & Wolfe, K. (2003). Hooks and anchors in youth development program delivery. *Journal of Extension* [On-line], 41(4) Article 41AW2. Available at: <http://www.joe.org/joe/2003august/iw2.php>

Lobley, J., & Peronto, M. (2007). Experiential learning in workforce preparation—An application for success. *Journal of Extension* [On-line], 45(3) Article 3IAW4. Available at: <http://www.joe.org/joe/2007june/iw4.php>

Department of Youth Development and Agricultural Education, Purdue University College of Agriculture (2008). *Gearing up for safety*. West Lafayette, IN: Purdue Research Foundation.

Michigan State University Extension (2002). *Guiding principles for positive youth development*. Retrieved from: <http://expeng.anr.msu.edu/sites/4h/resources/4-HGuidingPrinciples.pdf>

Michigan Department of Education (1998). *Career and employability skills content standards and benchmarks*. Retrieved from: http://www.michigan.gov/documents/Career&Employ_Standards_12_01_13760_7.pdf

National Agricultural Statistics Service, Agricultural Statistics Board, United States Department of Agriculture (2012). *Agricultural safety: 2009 injuries to youth on farms*. Retrieved from: <http://www.usda.gov/nass/PUBS/TODAYRPT/injr0412.pdf>

National Association of State Directors of Career Technical Education Consortium (2008). *Agriculture, food and natural resources cluster power, structural and technical systems pathway knowledge and skill statements*. Retrieved from: <http://www.careertech.org/resources/clusters/knowledge-skills.html>

U. S. Department of Labor Employment Standards Administration Wage and Hour Division (2007). *Child labor requirements in agricultural occupations under the Fair Labor Standards Act (Child Labor Bulletin 102)*. Retrieved from: <http://www.dol.gov/whd/regs/compliance/childlabor102.pdf>

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