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COMMENTARY

Growing Agricultural Education: Embracing Health and Safety

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On May 28, 2015, the Upper Midwest Agriculture Safety and Health Center (UMASH), the University of Wisconsin–Eau Claire's College of Nursing and Health Sciences, the AgriSafe Network, and the Southern Minnesota Center of Agriculture co-sponsored a forum to discuss agriculture health and safety education. Attendees varied by discipline including farmers, educators, agricultural media, company human resource managers, nurses, physicians, and veterinarians. Specifically, the assembled group was interested in improving agricultural health and safety and reducing injuries through agricultural education. The forum participants were charged with identifying better ways to incorporate safety and health as part of our educational curricula, targeting educational strategies for the next generation of farmers and workers, and strategizing on ways to improve health and safety in the changing agricultural sectors. The following synopsis highlights some of the key items discussed during the meeting and some needed next steps.

The forum began with a presentation by Dr. Jeff Bender, UMASH co-director, who highlighted preliminary findings on UMASH's review of insurance data to assess the cost of agriculture-related injuries. Agricultural injuries and illness are costly and impact the "bottom line" for farm families, producers, and companies. It is estimated that the 2,518 reported agricultural injuries in Minnesota over the past decade cost some \$31.3 million.¹ Given what is likely to be an underreporting of injuries in this worker group, this likely reflects an underestimate of worker-associated

injuries, illnesses, and costs. We believe that despite the limitations in data completeness, these numbers are concerning and support efforts to reduce expenses in lost dollars and injured workers. These data provide a strong rationale of why we need to promote health and safety efforts, including education.

Other presenters provided creative approaches to reaching agricultural workers, with particular emphasis on underserved populations. Dr. Lisa Schiller from the University of Wisconsin–Eau Claire described an innovative program for senior nursing students known as the "Compañeros en Salud y Seguridad /Partners in Health and Safety" program. This program sends senior nursing students to western Wisconsin farms to provide health screenings and share health and safety information with immigrant Hispanic farm workers. This program meets a need for agricultural worker health promotion, targeting a vulnerable population while providing a unique training opportunity for nursing students who learn to appreciate and understand the needs of immigrant workers, their language, and a bit of their culture.

Brad Schloesser, Dean of Agriculture at the Southern Minnesota Center of Agriculture, provided an overview of the Agricultural Food and Natural Resource (AFNR) programs in Minnesota's secondary and postsecondary schools. Safety and health are important topic areas in current agricultural education programs, but there are other priority areas competing for limited classroom time. There are

191 agricultural food and natural resources programs in Minnesota with 234 instructors. Currently, there is a shortage of agriculture teachers, especially at the high school level. Many teachers also experience educational burnout. These instructors need contact with farm operators to better understand the emerging issues affecting farm production systems. Many of the programs at the postsecondary level have agriculture-related tracks in programs such as the agribusiness and production, farm business management, food sciences, and veterinary technology. The demand for graduates is strong, yet very few programs have courses or materials that focus on maintaining the health and safety of the farm worker. Clearly, the need to support our agriculture teachers and provide supporting health and safety materials for our students is critical.

Carolyn Sheridan, clinical director of the AgriSafe Network, provided an overview of their continuing educational efforts to college students focused in agriculture. The goal of this program is to help agricultural students recognize the health and safety risks in agriculture and to empower them to be their own health advocates through education, prevention, and protection. Their project has found that students understand the risks of farm exposures but are not protecting themselves. This disconnect between knowledge and actual behavior is consistent with previous studies. Agricultural safety education needs to be taught early with children and continued into adulthood. A culture of safety is needed to change behavior.

Forum participants recognized the challenge of providing agricultural safety and health education. Educational programs need to consider age, size of farms, ethnic cultures, language, level of formal education, health and workers' compensation insurance availability, and availability of and access to health care (Appendix, see supplemental material). Programs need to be designed and relevant for the intended audience such as youth, adults (35 to 65 years of age), older adults (65+), and women. Additionally we need to create good, open, and easy accessible, online resources for educators.

The Round Table session provided an opportunity to share perspectives and addressed the following questions:

- (1) Who are the varying populations of workers in our current agricultural workforce?
- (2) What are the educational needs for these workers?
- (3) What are the opportunities/barriers for health and safety education?

To see a summary of the meeting discussion of educational needs, opportunities, and barriers, see the UMASH Web site: <http://umash.umn.edu/annualforum/index.html>. Education programs should consider not only owners and workers, but also health care professionals, bankers, financial planners, insurers, nutritionists, and veterinarians. These individuals all are working with owners and workers at varying levels and can highlight the health and safety issues on the farm.

Agritourism, urban farming, farmers' market gardeners, and hobby farmers are increasingly popular. These areas of consumer interest involve farming niches where health and safety education has not generally been targeted and are often overlooked. The National Farm Medicine Center is one of the few centers that have done important work and created valuable resources on agritourism and urban farming. Further efforts to reach farm operators involved in these venues are needed to protect the public, consumers, and farm families.

Conclusions from the forum

Forum participants clearly recognized the need for collaborative efforts to promote agricultural health and safety education not only from farm owners and workers but also from agribusiness, health care, agricultural banking, insurance companies, government, and academia. This cooperative approach is represented by a "One Health" philosophy that recognizes the connections between human, animal, and environmental health when addressing occupational health and safety issues in agriculture (Figure 1). This philosophy is central to UMASH's activities.

Collectively, the group observed the need to capture emerging trends and to be innovative and interdisciplinary in addressing these new challenges. A number of suggestions were provided as next steps.

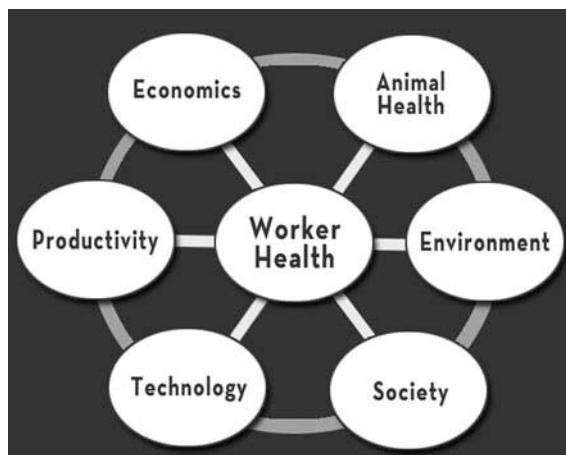


Figure 1. A diagram of the One Health concept (e.g. recognizing the connections between human, animal, and environmental health) with a focus on occupational health and safety issues in agriculture.

- Engage agriculture media to deliver targeted health and safety messages
- Create action plans for targeted groups to reach and implement change
- Provide “ready to use” resources for educators
- Provide an online forum to stimulate interest in achieving common safety and health goals
- Target new previously untapped organizations or programs to promote agriculture health and safety

Participants also recognized the need to build agriculture education communities or networks. This included involving parents, human resource safety managers, FFA (Future Farmers of America), FFA alumni, local and state farm organizations (i.e., Farmers Union and producer organizations). It was stated that women are more

likely to be more safety conscious and may be optimum targets for safety education, especially for farm families. We also should include groups not traditionally included in health and safety discussions, such as lenders, machinery sales personnel, nutritionists, and agronomists who may be helpful to more broadly engage local rural communities. To understand the current health and safety education components of existing agricultural educational programs, it was suggested that a survey of agriculture faculty in high schools, technical colleges, and universities is warranted. This would identify the gaps in health and safety education.

In summary, this forum shared the vision of UMASH to connect people and organizations to “*identify needs, challenges, and opportunities in agricultural health and safety.*” From here we need to encourage and to promote agriculture health and safety education broadly. This includes emphasizing the business argument that “injury prevention saves money.” This would involve agricultural lenders, agriculture insurance and workers’ compensation insurance companies, and agricultural economists. These efforts are needed to further build health and safety into our current educational programs.

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