

Gas Monitors on the Farm

by Renée Anthony, PhD, CIH, CSP

In response to several regional fatalities, the Great Plains Center for Agricultural Health (GPCAH) has reached out to many sources to develop guidelines and tools to prevent deadly exposures to manure gases. Inexpensive monitors are available to producers and haulers with real-time information on hazardous hydrogen sulfide (H₂S). While this life-saving technology is available, farmers want to know which monitor to buy.

Over the past several months, we identified critical features important to end users. After demonstrating a variety of monitors, we asked for specific opinions. Nearly 90% said it was important that the monitor displays the actual concentration. Less expensive monitors only “alarmed” and did not provide enough information for producers to safely respond. Since basic \$100 models only display information on battery life, we recommend the purchase of improved monitors that display the H₂S concentration for an additional \$50. More expensive monitors are able to log concentration data for later use, but most producers said this wasn’t important to them.

We have compiled a comprehensive list of monitors for use in livestock operations at GPCAH.org. Inexpensive, non-logging monitors, such as the Honeywell BW Clip Real Time and the Gas Clip SGC Plus models, require

(continued on page 2)



UI graduate student Emily Trenkamp discusses different types of gas monitors with a livestock producer at Husker Harvest Days in Grand Island, NE.

Director’s Message

by Renée Anthony, PhD, CIH, CSP

The National Institute of Occupational Safety and Health (NIOSH) has granted support to conduct new research projects and outreach efforts as we begin our 2016-2021 funding cycle. These activities all support our mission to prevent agricultural injury and illness and to improve the safety and health among agricultural communities.

Our three research projects focus on hazards that threaten workers throughout our nine-state region. Dr. Peek-Asa is leading the *Instrumented Farm Vehicle Roadway* study, which aims to understand specific behaviors that lead to crashes with farm equipment on roadways. This work will identify driver behaviors when sharing the road with farm vehicles and will test the effectiveness of an educational program to prevent roadway crashes. Dr. Nonnenmann is leading a project to *Improve the Air Quality in Production Livestock Buildings*, with the goal to not only improve the health of workers but to also quantify improvements in livestock health. Dr. Ramirez is collaborating with insurance providers to improve injury surveillance, evaluating possible new methods to identify agricultural injuries and illnesses so that the safety and health communities are better poised to protect farmers. Follow our progress on the “Center Projects” page of GPCAH.org, where we will post activities and findings of these new projects and our summaries of ending projects.

We are excited to work on these research projects to improve the health and safety of farmers, we also want to acknowledge and thank the many people who have contributed to the success of GPCAH.

(continued on page 2)



Renée Anthony PhD,
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The GPCAH will host **Agricultural Safety and Health: The Core Course** on June 12-16, 2017 in Iowa City, IA. The course provides information and skills to enable safety and health professionals to anticipate, recognize, and prevent occupational illnesses and injuries among members of the agricultural community. **A networking reception will be held Monday, June 12th** from 4:00-6:00 at the University of Iowa College of Public Health Building (CPHB). The reception is open to the public and will feature rural safety and health research posters and displays, and will provide an opportunity to visit with University of Iowa faculty, students and staff. For more information visit www.public-health.uiowa.edu/gpcab/continuing-education



The 16th Annual **Midwest Rural Agricultural Safety & Health Conference (MRASH)** will be held in Pella, IA on November 14-15, 2017. The venue is the Graham Conference Center located on the campus of Central College. Abstracts are currently being accepted through May 5, 2017 for research and outreach posters, presentations and roundtables. Visit the MRASH website at www.public-health.uiowa.edu/icash/programs/mrash-conference/2017-mrash for schedule updates, registration information and sponsor/exhibitor opportunities.

Director's Message continued from page 1

Input from you, our stakeholders, has enhanced the projects that we proposed to work on. We continue to focus our efforts on solutions that are relevant to the needs of agricultural workers throughout our region. Advocates and partners from commodity groups, extension agents, agribusinesses and safety organizations and, most importantly, our producers – so many have provided us with access to your farms, equipment, friends, and stories. Your input and partnership is essential to helping us be responsive to the agricultural community's health and safety concerns. We look forward to continuing our service to the pursuit of critical information that helps us all efficiently and effectively protect our farmers.

Dr. Renée Anthony directs the GPCAH, housed in the Department of Occupational and Environmental Health of the College of Public Health. She can be reached at 319/335-4429 (renee-anthony@uiowa.edu).

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GREAT PLAINS
Center for Agricultural Health

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Reflective Materials continued from page 4

respectively). Preliminary findings showed that farmers with used/older farm equipment, new/beginning farmers, and farmers working smaller, single farm properties with roads nearby were less likely to have current lighting and marking than large scale, experienced farmers with newer equipment. These individuals should be particularly careful and check their equipment to make sure it has the current lighting and marking.

Researchers Marizen Ramirez and Karisa Harland offer the following lighting and marking tips for farmers using their equipment on the road (these tips were also highlighted in the December *Successful Farming Magazine*, online edition):

1. Outline your equipment with reflective marking on the widest points (see figure on page 4).
2. Use an SMV emblem, and keep it clean and visible.
3. Make sure all equipment lights work, such as flashing amber lights, and turn the lights on as you drive on the roads (even in the daytime).
4. Consider adding red taillights to towed equipment.
5. If possible, avoid traveling on roadways in the dark.
6. Always use turn signals.

See additional lighting and marking diagrams at www.gpcab.org/lighting-and-marking

Gas Monitors continued from page 1

minimum maintenance and have, so far, performed well. Many farm supply stores do NOT stock these monitors, but on-line resources are available on the GPCAH website.

Thanks to everyone that gave us your opinions. Congratulations to the 11 survey participants who were randomly selected to receive a monitor! It is time to get these monitors ready for spring, as we plan for manure pumping or pressure washing.

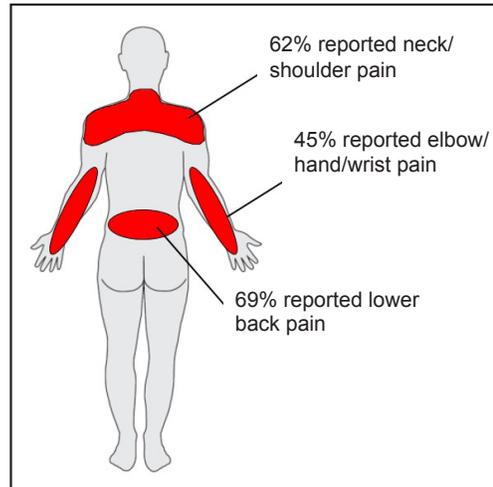
Pilot Study Looks at Musculoskeletal Symptoms among Beginning Farmers

by Maya Ramaswamy, Occupational and Environmental Health Graduate Student and Jenna Gibbs PhD, Center Coordinator, GPCAH

The majority of farmers in the US are established farmers, people who are on average about 58 years old and have farmed for over 30 years. As these farmers age and retire, it is important to understand the challenges, job demands, and health outcomes among the people who will take their place. In comparison to established farmers, beginning farmers have 10 years or less experience independently operating a farm (USDA). This pilot project involved an online survey of 98 beginning farmers from 16 states to understand the health, activities, and demographics of beginning farmers across the country.

Preliminary data show that beginning farmers tend to be younger (the average age was 40 years old), less likely to specialize in grain/row crops, and more likely to be women (73%) than established farmers. Interestingly, the majority of beginning farmers (90%) experience some form of musculoskeletal pain, which exceeded the reported prevalence of pain in more established farmers. More than half of beginning farmers reported neck/shoulder and lower back pain (see figure above). Data analysis is ongoing, specifically to understand potential risk factors for this pain and to understand psychosocial stress and general health outcomes. If you have any questions regarding this research, please contact the principle investigator, Maya Ramaswamy, at maya-ramaswamy@uiowa.edu.

For more information on the GPCAH projects, including status updates and outreach materials disseminated by investigation teams, visit www.gpcah.org



calendar

April 11-12

Iowa Governor's Conference on Public Health

Des Moines, IA

www.iowapha.org/IGCPH

May 9-12

National Rural Health Association Rural Health Conference

San Diego, CA

www.ruralhealthweb.org

June 4-7

American Industrial Hygiene Conference and Expo

Seattle, WA

www.aihce2017.org

June 12-16

Agricultural Safety and Health: The Core Course

Iowa City, IA

www.public-health.uiowa.edu/gpcah/education/training-opportunities

June 25-29

International Society for Agricultural Safety and Health (ISASH) Annual Conference

Logan, UT

<https://isash.org/2017-isash-annual-conference>

July 9-13

National Association of County Agricultural Agents Annual Meeting

Salt Lake City, UT

www.nacaa.com

July 16-19

2017 ASABE Annual International Meeting

Spokane, WA

www.asabe.org/meetings-events.aspx

July 22-26

Agricultural Media Summit

Snowbird, UT

<http://agmediasummit.com>

August 29-31

Farm Progress Show

Decatur, IL

<http://farmprogressshow.com>

November 14-15

Midwest Rural Agricultural Safety & Health Conference

Pella, IA

www.public-health.uiowa.edu/icash/programs/mrash-conference/2017-mrash

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Agricultural Safety and Health: The Core Course

June 12-16, 2017 University of Iowa CPHB, Iowa City, IA

*Information and skills to enable safety and health professionals to anticipate, recognize, and prevent occupational illnesses and injuries among members of the agricultural community. **Networking Reception Monday, June 12th 4:00-6:00 pm***

www.public-health.uiowa.edu/gpcah/continuing-education

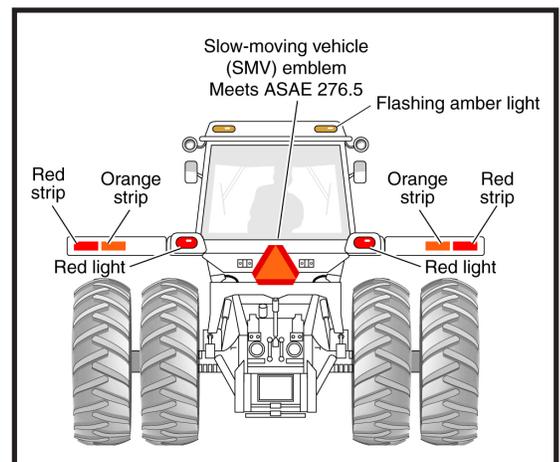


Research to Practice

The Great Plains Center for Agricultural Health Distributes Reflective Roadway Materials to More than 300 Farmers

by Jenna Gibbs, PhD, Research Coordinator, GPCAH and
Marizen Ramirez PhD, Project Investigator, GPCAH

In the Midwest region of the United States, more than 1,000 farm vehicle crashes occur each year and cause severe and fatal injuries. The Great Plains Center for Agricultural Health recently completed a study that found increased lighting and marking on farm equipment is associated with reduced roadway crash rates (Ramirez et al., 2016). To translate our findings to action, from August 2016 - January 2017, the outreach team distributed more than 300 “lighting and marking kits” to farmers (75% male, 25% were female), along with useful information for optimal lighting and marking of implements. Farmers receiving the kits were from Illinois, Iowa, Minnesota, Missouri, Nebraska and South Dakota. These kits contained a slow-moving vehicle (SMV) emblem with 6 retroreflective marking strips. During distribution, we surveyed farmers about their lighting and marking attitudes and practices. Most farmers stated that they were in most need of reflective kits for their tractors and grain carts (39% and 27%, respectively), although some needed them for trailers (11%) and hay transporting equipment (8%). About half of grain and livestock farmers did not use current reflective materials on their equipment (40 and 56%,



Source: American Society of Agricultural and Biological Engineers (ASABE) Standards Program, (276.8) 2016.