

Should hog producers increase sensitivity to employee safety?

Kim Wright

Every morning at 4:30, 44-year-old “Ann” puts on her overalls and boots and begins her chores at the hog farm where she’s worked for 3 years. On this day, even though she has an ear infection and a bad cough from fumes and dust, there is still work to be done. She begins her daily routine enthusiastically; her need to pay the bills and her interest in the animals under her care keeps her going.

Around 7:30, Ann began pressure washing the nursery decks. She hadn’t felt well the day before, and she still wasn’t any better—she had a migraine headache, burning sinuses and felt nauseated, but she attributed it to “what’s going around” and continued washing the decks with water.

After 45 minutes, she was soaking wet and feeling worse. She felt numb, drowsy, confused, and was having difficulty standing, when she finally realized the cause: the room was full of carbon monoxide. The heat-absorbing insulation on the gas-powered pressure washer was damaged, allowing carbon monoxide to escape from the heating system. Fumes from yesterday’s use still lingered, increasing the amount of carbon monoxide in the room.

Ann managed to turn off the pressure washer, then lunged for the door. But just as she reached to open it she collapsed, unconscious. She awoke nearly a half hour later; the 1-inch crack under the door had let in enough oxygen to save her life. A coworker found her as she crawled to a chair. He stood there watching, not knowing what to do. He didn’t yell for help, didn’t dial 911, and didn’t know how to perform CPR.

This situation actually happened last year, and it is not as unusual as it may seem. The nation’s hog producers are plagued by health and safety hazards. Since it would be too costly and time-consuming for the government to constantly inspect hog farms, hog producers are left to regulate themselves. But when producers fail to make employee health and safety a priority, human lives are placed in jeopardy. Some farms are safer than others, depending upon the owner’s awareness of employee safety. But owners who are not involved with the day-to-day chores of maintaining a herd may not be as sensitive to working conditions.

Unlike other large industries, which are regulated by the Occupational Safety and Health Association (OSHA), the hog industry is relatively free from employee safety and health regulations or inspections. This won’t last long if situations like Ann’s continue. To avoid costly implementation of government regulations and to reduce health care costs, safer working conditions for employees must become a main goal.

Members of the pork industry argue vehemently that state-enforced health and safety standards would regulate them right out of business. Since their profit margin is based on volatile market price fluctuations, implementing strict across-the-board rules could be costly. Pork producers believe that self-regulation is the only answer.

Since most work-related injuries are not reported, we don’t know how pervasive employees’ health risks really are. However, examples of injuries like Ann’s are not uncommon. Dr. Malcolm Lester, a family physician in Truman, Minnesota, regularly treats patients with farm-related injuries like Ann’s. “We always have someone around here getting overexposed [to gases and dust]. A lot of them [workers on hog farms] come in light-headed, wheezing, and coughing from fumes,” says Lester. “Sometimes they take better care of the hogs than of themselves.”

Poor air quality in hog confinement units is the largest cause of employee health problems. Without proper ventilation, manure pit gases, feed dust, and animal dander will build to dangerous concentrations, and can be fatal. Since 1982, nine Minnesota farm workers have lost their lives when overcome by manure pit gases. Four deaths occurred within the past year, in Yellow Medicine and Dakota counties.

The National Pork Producers Council, in its *Swine Care Handbook*, says “Definitive standards for air quality have not been established for swine...More research is needed to determine allowable concentrations for humans exposed for 8 hours to the mixture of gases and dusts that may be present...Pigs can tolerate higher levels of inert dust [than humans] with no noticeable effect on their health or well-being.”

Lester says that most workers in confinement units are exposed to fumes for 10-12 hours a day, not just 8. Little is known about the permanent effects of prolonged exposure.

Rt. 2 Box 84, Truman, MN 56088. (507) 776-3012

Commentary is not peer-reviewed.

"There's a lot we don't know," he said. "[Gases and dust] are certainly dangerous and fatal [at high concentrations], but we [researchers and doctors] aren't sure what kind of long-term effects there could be."

Dr. John M. Shutske, University of Minnesota agricultural safety and health specialist, has written that decomposing livestock manure stored in pits or other storage facilities generates numerous toxic gases. These gases include hydrogen sulfide, methane, ammonia, and carbon dioxide. Shutske says hydrogen sulfide is especially deadly: even a few breaths of it can kill. Like cyanide, the gas interferes with the body's ability to use oxygen.

At the American Conference of Governmental Industrial Hygienists in 1991, experts determined that the air composition inside and around swine buildings should not exceed 10 parts per million (ppm) hydrogen sulfide and 25 ppm carbon monoxide. In comparison with other deadly substances, this is an extremely low concentration. In cars, for example, the safe limit for carbon monoxide is 50 ppm.

Ammonia should not exceed 25 ppm. It is extremely toxic and irritating to lung tissue. Many livestock confinement workers have respiratory problems from breathing ammonia and dust. In addition, carbon dioxide should not exceed 5000 ppm, and methane should not exceed 1000 ppm because it is flammable.

When confinement workers suffer from health problems, employers pay for it with high worker's compensation insurance. Large farms, with 11 or more employees, must carry worker's compensation insurance. Medical claims are made each year for loss of wages and the need for medical attention due to on-the-job injury or health problems.

Kate Kimpan, a worker's compensation research analyst in St. Paul, Minnesota says the annual number of reported claims is unclear. Producers are also required to carry worker's compensation if paying employees \$8000 or more a year. But employers can circumvent this rule by not reporting wages paid to family members.

"The agriculture numbers [of reported claims] are awful," Kimpan said. "Farms are not compelled to keep worker's comp insurance." Also, statistics are sketchy because workers are often afraid to report injuries or health problems for fear of being labeled "troublemakers" or even of losing their jobs.

To Minnesota employers as a whole, worker's compensation costs are now a \$1 billion operating expense. The cost of medical care for Minnesota worker's compensation cases out-paces the growth of health care costs for the general population.

This was an important issue at the Minnesota Pork Producers Association Annual Meeting in 1992. The association resolved to "call on the members of the State Legislature to relieve this extraordinary cost to employers." The "true cost

drivers," the association believes, are the "3% of those injured who account for 73% of the system's costs," and that "the system provides built-in incentive not to return to work."

The pork industry is angry about rising insurance and health care costs. But some of these costs could be reduced if hog producers provide safer working environments by following through on their promise of self-regulation. The success of the pork industry depends upon the health and safety of the hogs, and technology continually improves.

Ventilation has become more sophisticated within the past 5 to 10 years, says Larry Jacobson, an agricultural engineer at the University of Minnesota. As buildings are constructed, owners consult agricultural engineers for ventilation design options. However, at some farms, there is still not adequate ventilation for humans. Gas concentrations are usually not monitored, unless pigs have difficulty breathing. But pigs react only when gas concentrations are very high; there is usually adequate ventilation in their breathing space nearer the floor.

Many workers have no choice but to continue working under these conditions. In recession-plagued rural Minnesota, secure jobs are hard to find. Also, many workers like Ann, who is in charge of a farrowing department, enjoy being part of the growing hog industry and gladly perform the duties of maintaining a herd.

However, not all farm laborers are so committed. Lester said many workers do quit because of health risks, such as respiratory problems, loss of hearing due to high decibels, and 10-12 hour work days. Since skilled employees are hard to find, and hiring and training is time consuming and costly, safer working conditions are in the best interest of hog producers. Workers would feel less stress, take fewer sick days, and would suffer fewer injuries resulting in reduced worker's compensation claims. In time, the turn-over rate would improve.

In deciding what safety measures to take, pork producers can get excellent advice from veterinarians, who know how conditions affect workers as well as the animals. At a conference at North Carolina State University, Mike Muirhead, a swine consultant from England, said swine practitioners will play a larger part in advising hog operators as the hog industry continues to grow in the near future. Veterinarians can and will become an integral part of effective and efficient production while ensuring that the atmosphere is as safe for humans as it is for the hogs.

In the meantime, Dr. Clark Huincker, a southern Minnesota veterinarian, suggests some simple safety measures that could be implemented cheaply and effectively:

- Pressure washers should be ventilated away from workers, to avoid carbon monoxide build-up. Furnaces must be checked yearly, if not more often, to ensure fumes are not escaping. A strong ventilation system of exhaust fans in

human breathing space is vital. There should always be at least one foot of air space between the highest manure levels and the bottom of slatted floors. Remember: humans react sooner than pigs to toxic fumes because pigs' space is often better ventilated.

- Rooms should be brightly lit so that workers can see clearly, and corridors should be wide enough so that personnel can move equipment freely.
- Well-stocked emergency kits, containing plenty of bandages and disinfectant, must be provided within easy reach of workers.
- Oxygen tanks should be kept on hand and all employees should know how to use them.
- Telephones should be readily available in hog buildings, with emergency numbers provided.
- Supervisors and employees should learn CPR and other first-aid techniques; many local schools provide free or low-cost courses.
- Workers in large units should never be left alone in hog buildings. If workers are severely injured and cannot call for help, it could result in death.
- Veterinarians should be consulted regularly and notified whenever a health problem arises. They provide helpful advice about the health and safety of humans as well as hogs.

In addition to Huincker's safety tips, Lester advises his patients to wear self-contained breathing apparatus, or "gas masks" with canisters containing oxygen and filters that keep out

toxic air. Plain cloth face masks are not adequate. Lester, who owns a farm and follows his own advice, says he realizes that masks are uncomfortable and most workers "don't like to bother with them, but it's better to be safe than sorry."

While these steps would not eliminate health risks from hog farms, they would provide some relief. Since many large producers do not carry out the day-to-day chores of maintaining their herds, they must increase their sensitivity toward workers and be open to suggestions from employees and veterinarians.

Neil Dierks, executive assistant to the CEO for the National Pork Producers Association, says the association strives to improve safety. It is considering providing access to atmospheric testing machines, which measure air quality. Instead of measuring air quality by waiting for hogs to react, the machine could check fume concentrations before it is too late. At \$1500 each, these machines are too costly for many producers. The association proposes making them available on a free or low-cost rental basis.

Workers hope the pork industry will expand these efforts and make human health and safety a main priority with the help of swine practitioners. During the push to produce healthy, marketable hogs, employees' needs should not be left by the wayside. As veterinarians work more closely with hog producers to help ensure a safe working environment, the employee turnover rate will drop, insurance costs will be lower, and employees will be more productive. This means further expansion of the hog industry and success for everyone involved.



We solicit your letters to the editor and encourage on-going debate on topics of interest to AASP members. We also welcome letters that challenge, support, or add to articles that appear in *Swine Health and Production*. Letters must be signed by all authors, should not exceed 500 words (two double-spaced typewritten pages), and are subject to editing and condensation as necessary.