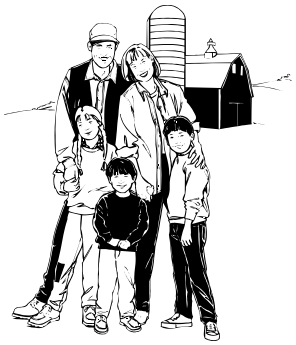
Farm Safety and You . . . Perfect Together



Beneficial facts for Farmers from

Raymond J. Samulis,
Burlington County Agricultural Agent

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Electrical Safety on the Farm

By Michelle Bross, Burlington County Master Gardener
Ray Samulis, Burlington County Agricultural Agent

Although electricity is a necessary source of energy on the farm, it has great potential to cause harm. If used improperly, it can be the source of injuries, and even death. Electrical hazards can result in electrical shock to humans or to livestock, and can result in a fire within structures or in operating equipment.

Risks associated with electricity on the farm are increased by the presence of **moisture**, especially by the dampness common in confined livestock areas. **Animals are naturally grounded, making them more sensitive to low intensity electrical currents than humans**. Humans have dryer skin than animals, and normally wear shoes or boots, which provide greater resistance to electrical shock. When standing on damp ground, the farmer usually will not feel an electrical shock that a well-grounded animal does.

Electricity enters the farm through a control panel and a main switch, where the farm worker can shut off all the power in an emergency. The control panel contains either **fuses** or **circuit breakers**. It is important to use the correct fuse for the panel. Never use a greater number, or replace fuses with anything other than fuses. If power has stopped, check the control panel. Look for the broken metal strip in the top of a blown fuse. Replace the fuse with one that is marked with the correct amperage. If circuit breakers are used, reset them from off to on. It is very important to check why the fuse or circuit blew. Possible causes are frayed wires, overloaded outlets, or defective appliances. **If power stoppages continue, contact an electrician**.

Agricultural electrical systems have their own special requirements, including:

1. **Increased height of overhead lines** to accommodate tall farm equipment such as combines, oversized wagons, ladders and grain augers. Many farmers have died from tall equipment touching overhead electric lines.
2. **Special insulated wire** to withstand damp environments inside farm buildings. Type NMC or UF cable is recommended for most situations.
3. **Ground-Fault Circuit Interrupters (GFCI)** to insure operator safety in the event of an extension cord or tool coming in contact with water. They are commonly used as a receptacle outlet, part of an extension cord, or in the main electrical panel to replace an existing circuit breaker (where it can offer shock protection to an entire electrical branch).

There are several **ways to reduce the electrical hazards** in farm buildings and around work areas. You can protect yourself and your livestock by doing the following:

- ✓ **Install a GFCI** in each permanent electrical circuit.
- ✓ Use a **portable GFCI** when using individual power tools.
- ✓ Convert all 2-conductor circuits to **3-wire grounding-type circuits**.
- ✓ **Use an electrician** who is familiar with agricultural wiring to make recommendations.
- ✓ Buy tools and equipment designed to prevent shock – those

that have an approval label with **"Type S" (Hard Service Cord)**.

- ✓ Avoid using grounding adapters.
- ✓ If an **extension cord** is needed, check before each use for nicks or cuts. Make sure it's grounded or use a portable GFCI.
- ✓ **Do not abuse electrical power tools**, which can destroy the insulations and connections inside them. **Avoid overheating**.
- ✓ **When using a combine**, check its hydraulic and fuel systems for leaks, and inspect all electrical components (including battery terminals) before the harvest season, and at least weekly during harvesting. Grain and crop residues can be readily combustible.
- ✓ **Encase electric cable inside conduit** (preferably PVC) to provide extra protection from livestock and gnawing rodents.
- ✓ **Check equipment periodically** to spot worn or cracked insulation, loose terminals, corroded wires, defective parts, and any other components that are not working correctly. Have them repaired at once.
- ✓ Do not install **fence wire** along the same route as overhead lines, where they may come into contact with one another when broken.
- ✓ **Equipment** such as grain augers **should be put in** their **lowered position** before moving them under power lines.
- ✓ Keep ladders, antennas, kites and poles away from power lines.

Electrical systems will function indefinitely if properly installed, and not overloaded or abused. To reduce the risk of fire or injury, the farmer or a licensed electrician should inspect all circuits, wiring and equipment frequently for wear or damage.

References:

Center for Michigan Agricultural Safety & Health
Iowa State University Extension
National Ag Safety Database
(www.cdc.gov/nasd)
Michigan State University Extension
University of Main Cooperative Extension

Is Your Farm Shop Safe?

By Michelle Bross, Burlington County Master Gardener
Ray Samulis, Burlington County Agricultural Agent

The farm shop is critical for maintenance and repair of farm tools and machinery. It can also be a dangerous place to work if not organized, cleaned, and inspected regularly.

Organization

The shop itself should be in an accessible location for repairs and equipment storage. It should be organized so that everything has a designated place. Each item should be secure, so that it can't fall and no one can trip over it. Make sure a fully stocked first-aid kit is readily available.

Cleanliness

Many injuries occur because of poor cleanliness in the shop. The majority of the injuries come from trips, slips and falls. To prevent any mishaps, debris must be swept up and disposed of, and trash containers should be emptied often. Parts not in storage bins should be kept on workbenches and tools should be placed where they are out of the way. Any spills must be taken care of immediately. The work area should be cleaned up completely after each job.

Lighting

Lighting is extremely important. There should be plenty of general lighting, as well as lights over benches and tools.

Heating and Ventilation

Make sure that the shop is vented properly, particularly if it is heated. Proper systems are needed to vent heat, smoke, fumes and exhaust gases, and adequate windows and doors are a necessity (the total window area should equal about 25% of the floor area.)

Wiring

All wiring must conform to electrical codes. It should be of adequate capacity to handle lighting, heating and power tools. Conductors, plugs and receptacles need to all be 3-wire grounded, and there should be plenty of ground fault circuit interrupters to prevent shock.

Personal Protective Equipment

When working with any tools or farming equipment, it is imperative that the correct protective equipment be worn: goggles for the eyes, plugs for the ears, masks and respirators for the nose and mouth, gloves and boots for hands and feet, and appropriate hats and clothing for the rest of the body.

Chemicals

All chemicals should be kept in a locked cabinet.

Power and Hand Tools

Keep all guards and shields on power tools in place. Use tools for their intended purpose, and use them properly. Make sure power tools are properly grounded. Don't allow anyone to use tools or equipment without

proper instruction. When not in use, tools should be unplugged and put away. When servicing tools, make sure that the equipment is turned off and unplugged, all rotating parts have stopped moving, and safety locks are in place. Keep all tools and equipment in good condition.

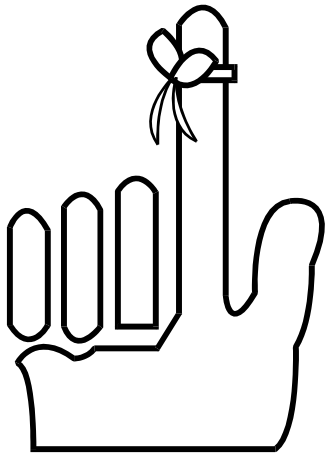
Fire Prevention

Store flammable and combustible materials away from sources of heat. Flammable liquids must be stored in covered containers. Never throw water on a grease or electrical fire. Learn the different types of fire extinguishers, and how to use them. Make sure the extinguishers are in plain site, and service them regularly.

A regular inspection of your farm shop is critical in preventing unnecessary hazards. Adhering to warning signs and practicing good housekeeping can prevent accidents. Good shop management and organization prevents injuries and also improves its efficiency.

References:

California Farm Bureau Federation (www.cfbf.com)
Canada Safety Council (www.safety-council.org)
Iowa State University Extension (kea.ae.iastate.edu)
National Ag Safety Database (www.cdc.gov)
National Safety Council (www.nsc.org)
Poughkeepsie Journal (www.poughkeepsiejournal.com)
Southern Illinois University (www.siu.edu)



Farm Pesticide Reminders

By William B. Luckenbill, Deputy Coordinator
Burlington County Office of Emergency Management

Pesticides are a fact of farm life, and a tool in the business of farming. Pesticides are arranged in chemical families such as Organophosphates, Carbamates, Organochlorines, and Chlorophenols. Organophosphates make up the most common group, which includes *Dursban*, *Malathion*, *Counter* and *Methyl Parathion*. Carbamates include *Sevin* and *Parquat*.

The first thing we want to talk about is reading the label each time you purchase the pesticide. We do this to remind ourselves of the dangers and warnings on the label, also the mixture rates and any new hazards, which we will find on the label. Even if the brand name doesn't change, the chemical contents may be improved (changed) and therefore the effects will be changed as well.

Keep a list of the pesticides that are in use and where they are stored so the list can be accessed if there is a fire or spill. Share the list with local fire and emergency management departments. Industry must also send out a chemical list to these departments annually. If a spill does occur and you need the HAZMAT team to help you stop the spread, they need to know what you had, and approximately what amount was involved. They also need to know if it was in liquid or dry form, because it makes a difference in handling. Most first responders will use the Department of Transportation Emergency Response Guide for general safety guidance. For example, Methyl Parathion is listed as a liquid 2783 and 3018, solid 2783, and dry 2783. The greatest hazard is from inhalation, although the chemical will go through the skin. Many of these products are cumulative in their effects and will not show up in the short term. Some chemicals target specific organs, i.e., liver, kidneys or lungs. We must remember what their purpose is by design. These materials operate on the nervous system of insects and can do the same with people.

Store pesticides off the floor on a pallet or shelving, and in a dry place. Keep them separated from oils, fuels and fertilizers. Do not remove them from their original containers or place them in containers that other chemicals have been stored in.

Wear rubber gloves, a protective apron, and eye protection when handling or mixing pesticides. Respirators will help reduce the effects you might get from inhalation. The dust mask that you see some people wear is good for dust and pollen, but not for chemicals. There are over 45,000 pesticide poisonings each year in the United States according to the Environmental Protection Agency.

Phone numbers that you may want to have available are the following:

National Pesticide Network

1-800-858-7378
from 9 a.m. – 7 p.m. EST

New Jersey Poison Control Center

1-800-764-7661

Worker Protection Standard Inspections

By Raymond J. Samulis, Burlington County Agricultural Agent

Some growers have expressed concern over the seemingly abundant messages to expect DEP inspectors this year for both the Worker Protection Standards as well as irrigation issues. The Worker Protection Standards have been in place for many years; however, a little bit of review never hurts anyone. Growers have asked me what an average inspection for Worker Protection Standard might entail. If you will remember back a few years, one of the first parts of the Worker Protection Standard program was to establish a central location for information to be posted and available for the workers' review. In fact, a few years ago, our office was one of the first to produce a complete Worker Protection Standard package that could be used on the farm. Since that time, commercial companies, like Gemplers, now have complete posting packages, and also separate individual parts for the bulletin board. Some items that must be included on the bulletin board are the Worker Protection Standard poster, application records, and location of emergency facilities. Another part of the program entails the actual training of the workers, which can occur as a group function, and must include giving each worker a training booklet.

Another important part of the Worker Protection Standard program is the availability of a decontamination site that should include water, soap, towels, etc. Also, inspectors will most likely check for a plan to deal with the transportation of and assistance to workers in case of an emergency. It is a common technique for the inspectors to verify the truth of what the farmer said by asking the workers various questions about items available to them around the farm. Be sure to verify that the workers know where the bulletin board is, and that they are aware of the training materials that they should have. A total lack of knowledge by the workers of any of these will assure even closer scrutiny on other items. While the abovementioned items are common to all types of farms, be aware that there are additional requirements for each specific type of operation. For example, nurseries and greenhouses have more specific requirements regarding reentry

intervals and posting requirements where needed. Fortunately, our Rutgers web site has a new section on farm safety, which contains the complete checklist for Worker Protection Standard inspections. You can view it by entering http://www.rce.rutgers.edu/farmsafety/. This web site contains information on Worker Protection Standards as well as many other farm safety topics. Be sure to listen to the sound effects at the beginning!

Many of the county agricultural agents meet with various officials of the Bureau of Water Allocation of the DEP as well as with enforcement personnel. Due to continued water shortages and competition for water supplies, expect increased enforcement activities this summer. Remember to keep your water use logbooks current. Our office still has a supply of these pocket books we designed for keeping records of your water use. We were told that in the not too distant future, the DEP would be looking for comments regarding updating their regulations for agricultural water use. As agents, we are on top of this issue; however, it will also be imperative for growers to give input on how some of these proposed changes may effect their operation. We are currently having philosophical arguments with them as to whether the water allocation permits should reflect actual water used or water needed under extreme drought conditions where no rainfall occurs. All of the allocations were designed to reflect the later in order to provide farmers with the necessary water. It will be in our best interest to continue protection of the water allocations as they are currently designed.