



# Acreage Answers

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## Standby Electric Generators

by Shawn Shouse, ISU Extension Field Specialist/Ag Engineering

With winter approaching standby electric generators are a hot commodity. I'm not suggesting everyone needs one, but if you're so inclined, here's some background information.

Standby generating equipment can be divided into two general types: engine-driven and tractor-driven. Tractor-driven units can be stationary or trailer mounted and generally cost \$2000 to \$4000. Engine driven units can also be stationary or portable and can be either manual start or automatic start. Prices range from about \$500 for small portable units to more than \$10,000 for large automated units.

A whole-system generator would likely be connected to your electrical system at the main service entrance at the meter pole. Check the requirements of your local power supplier for details on power transfer switching. Small, portable generators can be used to supply power to individual appliances simply by plugging them into the generator.

Generators require about 2 hp engine capacity for each 1,000 watts of generator output. Your main concern will be to provide capacity for starting motors. Motors require three to five times more electrical current to start than to run. Estimate power requirements from electric equipment nameplates if possible. As a guide, electric motors require roughly 4000 watts to start and 1000 watts to run for each horse power of output. Typically, water pumps are 1/4 to 3/4 horsepower, refrigerators and freezers are 1/6 to 1/4 horsepower and furnace blowers are 1/4 to 1/2 horsepower.

For a typical home, operating a water pump, refrigerator, freezer, furnace blower (gas furnace) and a few lights will require around 5000 watts peak for starting and 2000 watts for continuous operation. Electric heating devices would drive the requirement much higher. Typical farm demand could easily be 15,000 watts or more.

In some cases the generator capacity may not be sufficient to run all essential appliances simultaneously. In this case you may need to manually switch electric power to only one appliance at a time. This method requires more supervision, but allows effective use of a smaller generator.

For more detailed information on selecting and operating a standby generator, ask your power supplier, or contact your ISU Extension office and ask for bulletin AEN-122 (Electric Generators for Temporary Use).



## KNOW YOUR TOWNSHIP GOVERNMENT

by Norm Riggs, ISU Extension Community Development Specialist

Please share *Acreage Answers* with your acreage neighbors. Call your local ISU Extension office to be placed on the mailing list for *Acreage Answers* and to give us suggestions for future articles.

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Cooperative Extension Service, Iowa State University of Science and Technology, and the United States Department of Agriculture cooperating.

Many rural residents, especially new arrivals, are unaware of the government closest to home: their township government. In many rural areas the old “township hall” still stands as a wistful reminder of simpler times when government was truly grass roots.

Townships arrived with the pioneers when Iowa was still a U.S. territory and long before counties had been delineated. Today there are over 1,900 townships in Iowa. The average county has about 20 townships, which cover all residents outside a municipal boundary. (Townships don’t exist within cities.)

Until the 1920’s farm families relied on townships to provide most vital government services that city dwellers took for granted. Today the role of townships has diminished but is still prominent and worth understanding as a taxpayer.



The main responsibilities of townships are to provide fire and emergency services, cemetery maintenance, and fence law responsibilities. The elected body responsible for providing these services is a three-person board of *township trustees* and a *township clerk*, all of whom are elected for a term of four years.

A new law allows a county to, by resolution, assume the responsibility for fire and emergency services, but for the time being this is still being managed and contracted out by the township.

If you would like to know more about your township government, check with your county auditor who can provide a list of officers and how to contact them. You can also keep in touch by attending public meetings, which are required at least two times a year. And if you really want to get involved, run for office!

For more information on township government, you may order a copy of the *Township Trustee and Clerk Orientation Booklet, CRD 112*, from your County Extension Office.



# Store Your Lawn Mower Properly

by Wally Greenlees, ISU Extension Ag Engineer

When you are raking leaves, applying the fall fertilizer application to the lawn, planting fall bulbs or digging tender perennials this year—don't forget to prepare your lawn mower for storage!

Proper storage of your lawn mower can extend the life and, certainly, make start-up in the spring a more successful experience. First, before you start working on your lawn mower, disconnect the spark plug or the battery to prevent an accidental start-up.

Clean any dried grass or other debris from under the deck. Wipe off grease and grime from the deck and other parts of the mower. You could use a mild soap and water solution, or you could even take it to the car wash if you really want to spiff it up!

Any gas remaining in the gas tank should be removed from the mower. This can be done by turning the mower on and allowing it to run until all the fuel is used and the mower stops running, or the fuel could be drained from the mower and discarded or added to a full tank of gas in your car. Fuel that is left in the mower over the winter is not good for the engine and decreases the life of the mower.

Your lawn mower is now ready to be placed in the garage or storage area for the winter.

# Controlling Snow Drifts

by Greg Brenneman, ISU Extension Ag Engineering Spec.

With winter just around the corner, snow fences are going up in anticipation of the snows that will surely come. Snow fences are just one of the ways to control drifting snow. To make sure they do the job right without creating more problems, they must be properly placed.

Most snow blows through a good snow fence. Downwind of the fence, the wind slows and drops the snow. The better the snow fence, the more snow it takes from the blizzard. Research shows that the best snow fences are about half solid and half openings. We say that's 50 percent porous, it lets the blizzard through, but still slows the wind.

Wyoming research shows that fences with 50 percent openings form drift lengths up to 25 to 30 times the fence height. If the distance between the fence and road to be protected is less than 30 times the fence height, then the snow drift may reach the road. That can make a drift problem worse, instead of eliminating it. Fences with less open area will have shorter drifts (10-15 times the fence height) but will also store less snow. For best results, keep 4 ft. snow fence back at least 75 ft. and preferably 120 ft. from the road or driveway you want to protect.

Some longer term solutions to drifting snow include building up roads and driveways so that snow is blown across rather than drifting on to them. Also, living snow fences of evergreens and shrubs can be planted to provide a windbreak. Make sure that they are planted back from the areas they are to protect. A good rule of thumb for Iowa is to allow 100-150 ft. for trapping of snow between the living snow fence and area to be protected.

Keep grass and weeds alongside roadways mowed down in the fall. This vegetation can act as a mini snow fence dumping snow right on the roadway. Leaving cornstalk stubble undisturbed will trap a great deal of snow out in the field and minimize the amount of snow that can drift onto a roadway.

Anywhere there is an obstruction, snow will drift. By strategically placing or removing these barriers, we can minimize problems from drifting snows.





# Be Prepared for Winter Travel



Winter travel in Iowa can be hazardous. "Be Prepared" is a good motto to have when traveling in the winter. The Iowa Department of Public Safety provides us with the following tips for traveler preparedness:

- ❖ Check weather conditions before your start out. Call 1-800-288-1046 for a recorded message from the Iowa Department of Public Safety on statewide winter road conditions. (Messages are available Nov. 15-April 15).
- ❖ Keep your gas tank full. Make sure your windows are clear, windshield washer is full of fluid, and wiper blades are in good shape.
- ❖ If you become stranded, stay with your vehicle. Park on the shoulder where possible, and turn your emergency flashers on. Keep snow away from your exhaust pipe and open your vehicle's window a crack to reduce the risk of carbon monoxide buildup.
- ❖ When traveling during the winter months, carry a "survival kit" in your vehicle. The kit should contain:

|  |  |
|--|--|
| • Booster cables   | • Two or more blankets   |
| • Candles and matches                                    | • A can for melting snow                                       |
| • Snow shovel and scraper                                | • Flashlight and extra batteries                               |
| • Extra clothing like a cap, gloves, parka and overshoes | • High-calorie, nonperishable foods like candy and canned nuts |
| • Sand or strips of carpet for traction                  |  |

The Iowa State Patrol is also concerned about your safety. The State Patrol emergency phone number is 800-525-5555 or cellular \*55. This emergency phone number allows callers to report highway emergencies to the nearest Iowa State Patrol Communication Center. This is to be used to report emergencies such as, accidents, vehicle breakdowns, erratic drivers, criminal activity, etc. Remember this number is for emergency assistance only. Road and weather information is available from the Iowa State Patrol by calling 515-288-1047.

## Is your Soil Healthy?

*by John Creswell, ISU Extension Specialist & Mike Sucik, Natural Resources Conservation Service*



What was the general health of your lawn and garden this summer? Did your tomatoes and sweet corn look yellow and unhealthy? If the answer is "yes", your lawn and garden may be low in organic matter (less than 1%). You may want to soil test for organic matter this fall. Organic matter is the key to a healthy and productive lawn and garden.

Soil organic matter is the portion of the soil composed of anything that once lived. It includes plant and animal remains in various stages of decomposition; cells and tissues of soil organisms, and substances from plant roots and soil microorganisms. All living things are made up of carbon, and carbon is the primary element of organic matter. It's what makes organic matter organic. In most soils, organic matter accounts for less than 5% of the total soil volume. We commonly refer to it as topsoil.

Soil organic matter acts as a storehouse for nutrients, increases biological and chemical activity in the soil, and reduces the effects of compaction. It helps build better soil structure and tilth, and increases water infiltration and retention. It protects the soil from pounding raindrops, which not only cause erosion, but seal over soil pores. Rapid changes in soil pH and other chemical processes are slowed by organic matter's buffering capacity. Soil organic matter is the primary energy source and home for billions of beneficial organisms, such as nitrogen fixing bacteria, fungi, and earthworms.

Increasing the soil organic matter to proper levels will increase productivity in your vegetable garden, flower beds, and lawns. Your county Extension office has publications on composting, which will improve organic matter in your lawn and garden. Ask for RG 206 *Questions About Composting* or PM683 *Composting Yard Waste*.



# Winterizing Your Home

by Shawn Shouse, ISU Extension Ag Engineer, Montgomery County



Like it or not, winter is near. These last few 50-degree days are an excellent time to winterize your home. Nearly all of the suggestions I have here are common sense items. The trick is remembering to take care of them before ice, snow and cold winds make the tasks much more uncomfortable.

**Heating System** - If you have a wood-burning stove or fireplace, make sure the chimney is clean and unobstructed before use. Check gas furnaces for venting problems or heat exchanger cracks if you smell any exhaust in the house. This can be a life-threatening situation! Change furnace filters frequently through the heating season. Check your fuel supply. If your furnace blower motor requires oiling (probably only old ones would), take care of it now. Having furnaces checked and adjusted by a qualified technician can save you fuel and help prevent the discomfort of down-time later this winter.

**Water System** - Disconnect and drain garden hoses. A hose attached to an outside faucet can keep it from draining and cause even "frostless" faucets to freeze and burst. If you have outside faucets that are not freeze-proof, you may need to shut off and drain water lines inside. If you have water lines in an unheated crawl space, you may need heat tape to keep them from freezing. Newer heat tapes may be thermostatically controlled and tolerant of overlap. Older tapes could overheat and cause fires if they are overlapped on themselves. Water lines located under cabinets on outside walls sometimes freeze in extreme weather. Placing insulation between the wall and water line, or leaving cabinet doors open during extreme cold can help prevent problems.

**Attic** - check your attic insulation. Open attics are an easy place to add insulation and save heating costs. At least 12 inches of insulation is recommended for attics. Seal any openings in the ceiling. Warm, moist air that leaks into the attic can cause condensation that rots wood and ruins insulation.

**Walls and foundation** - Openings in exterior walls (outlets, switches, etc.) should be sealed to prevent warm air moving out into the wall or cold drafts coming in. Gaskets are available to place under the faceplate of an outlet or switch to prevent drafts. Foam-in-place insulation also works well for sealing leaks in walls. Insulating basement walls can produce big heat savings, but don't use straw or hay bales around the outside of the foundation. Bales attract rodents and are not very effective insulation when exposed to wind. Do not apply plastic sheeting to the outside of house walls. Plastic on the outside traps moisture and contributes to wet insulation and wood decay.

**Windows** - You can reduce heat loss through windows by increasing the insulating properties of the window and by reducing the air leaking through the window. Insulation can be added by increasing the number of layers in the window. Storm windows, thermal (double or triple) pane glass and plastic films are the most common methods of adding layers. If you have only single pane glass, adding a second layer will likely give you the most return for your efforts. Insulating drapes closed at night will also reduce heat loss. But remember that closing drapes will also allow the windows to cool to lower temperatures and increase condensation on the glass. Reducing the air leaking through the window will also save heat and make the room more comfortable. Removing the interior trim and filling empty cavities with insulation, foam, or caulking is the most effective method. If the air is leaking between the window panes and frame, press-on sealer or window films may be a good choice. With any adhesive product applied to window frames, remember to check a spot to be sure that the window finish is not affected.

**Garage** - Check for any products (paint, garden products, etc.) that should not be allowed to freeze. Make sure that garden hoses and unprotected water lines are drained. Dig out the snow shovels, snow blower, battery booster and other items that will likely be needed in the coming months. Starting the snow blower now can save hours of frustration and cold fingers later.