



Agriculture and Natural Resources
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NOTE to editor: This is one in a series of articles produced by University of Wisconsin-Extension agents and specialists to address farming through difficult times. More articles can be found on the Extension Responds website at:
www.uwex.edu/ces/ag/farmingindifficulttimes.html

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Managing through Difficult Times: Farmstead and milk house cost savers

Appleton, Wis. – Low cost ways to reduce your energy bill helps save money in tight cash flow months. Many producers are trying to save money while their milk checks are smaller notes
Zen Miller, University of Wisconsin-Extension Outagamie County dairy/livestock agent.

One way to save money is to reduce the energy consumed on the farmstead. The following are a few of the ways producers can try this strategy to reduce costs and prepare for better times.

-- Call your utility company and request an energy audit or Google "Focus on Energy" and find the nearest agricultural energy advisor in your area. You can also call 1-800-762-7077 and ask for the agricultural program office. An energy audit can be conducted at no charge on your farm. The energy specialist will need 30-45 minutes to ask questions and evaluate equipment. Their audit tools will then determine and recommend changes that can be made starting at the fastest payback. If your milk house equipment is adequate for the size of your operation you can start looking for another place to save money.

-- Cleaning and maintenance of refrigeration unit. Cleaning the refrigeration unit can save from 3-5 percent in energy usage. You will need to disconnect the electricity to the refrigeration unit first. Then remove the condenser fans and use a garden hose to spray the condenser fins to remove dirt and dust. Power sprayers are NOT recommended because they may cause damage to the fins. Make sure water can drain away from the condenser frame. You may need to drill a drain hole or vacuum out excess water. Next, mix condenser degreaser (available from a refrigeration equipment company) with water, spray on the fins from both sides and let stand for 5-10 minutes then rinse. Make sure you use the right cleaner so as not to corrode the equipment. Next take a fin comb (also available from a refrigeration equipment

company) and straighten fins if any are bent over or crushed. Make sure to open winter covers when warm weather returns.

-- Maintenance for ventilation system. Loose belts and dirty louvers can reduce air flow by 3-40 percent. Cleaning dirt from blades and louvers will reduce drag and increase efficiency of fan. Dust on motors will increase heat and dust on the thermostats will reduce accurate readings. Make sure to lube the louvers with dry graphite for best results as it does not collect dust and dirt. Replacing belts and adding a self tightening device will reduce slipping and increase airflow as well as lengthen belt life.

-- Switch to energy efficient lighting. Changing from T-12 fluorescent lights to T-8 will reduce electrical usage by 20 percent. Switch all incandescent light bulbs to new compact fluorescent bulbs (CFL) to save 75 percent. Incentives and rebates may be available for purchase and changeover of lighting. Make sure to check for temperature range and light quality when switching light bulbs and fixtures.

-- Although we are at the end of the cold season purchasing a \$25 plug-in click timer and setting the engine block heater to come on two hours before morning start-up can pay for itself in about 30 days when compared to leaving a block heater plugged in for 10 hours overnight.

-- Hot water usage and heating is expensive. Most farms have a heat recovery unit to capture waste heat from the refrigeration unit to preheat water before it enters the water heater. These units typically save about 50 percent on hot water heating. To make sure yours is operating correctly run water out the bottom drain monthly to flush out mineral build up. Also, you might consider installing some plumbing so you can use warm water directly from the heat recovery unit for mixing milk replacer and other non-critical warm water tasks. If you don't have a refrigeration heat recovery unit, you should get an energy audit done to see if it would be cost effective to install one. It is usually the best first investment for energy conservation on a dairy.

-- Conserve fuel in the fuel tank. A typical 300 gallon fuel tank can lose up to 150 gallons of fuel a year from evaporation. To reduce the amount lost to evaporation to less than 15 gallons consider the following ideas. Keep fuel tanks in the shade, paint the tanks white or aluminum, use pressure relief caps instead of conventional gas caps, inspect for leaks and tighten connections. To reduce theft lock unattended tanks and mark tanks "Red Diesel for Off Road Use Only."

-- General maintenance to improve heat retention and reduce heat losses in buildings. Check insulation and increase to R-30 or R-40 in ceilings, R-18 in walls and foam-core doors. Weather strip doors to reduce air infiltration. Insulate around warm building foundations 2 inches of extruded polystyrene 2 feet or more below ground level. Check to see if the older insulation is still in place and in good repair. Have a heating contractor do an annual maintenance check of your boiler or furnace to ensure it is operating at maximum efficiency. A 1 or 2 percent increase in performance will usually pay for the service call.

-- Do you milk more than 7 or 8 hours per day? Then you should consider a variable speed vacuum pump. They can reduce vacuum pump energy use by 60 percent typically; run quieter and increase pump life. The controller changes the speed of the pump to match the consumption of air versus the conventional pneumatic regulator which emits air into the system to make up the difference between what the pump is pumping and the amount of air that is used by the milking equipment.

-- Finally back to the energy audit. If you milk enough cows to justify a variable speed vacuum pump, variable speed milk pump and other efficient heating and cooling equipment, develop a plan for purchasing the equipment when cash flow allows, incentives justify purchase or as equipment replacement occurs. The saving will continue for the full life of the equipment.

These are just a few ways to reduce cost on energy consumption. You'll be surprised what you might uncover when you set down or walk through your farmstead and look for ways to reduce energy or improve efficiency. For further information go to the UW Extension Publication web site for free bulletin (<http://learningstore.uwex.edu/Energy-Conservation-C29.aspx>) or to conduct a walk through contact your local UW-Extension office. Other ideas can be found at www.uwex.edu/energy/AgEnergy.html.

To access more information and/or tools to help analyze your situation, link to the Extension Responds web page at: www.uwex.edu/ces/ag/farmingindifficulttimes.html

For assistance in making these tough decisions, contact your UW-Extension county agent, your Farm Business and Production Management Instructor in the Technical College or the DATCP Farm Center at 1-800-942-2474.

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