



Energy Conservation in Agriculture

Energy Efficient Dairy Farms

Scott Sanford

Electrical energy consumption in agriculture has grown steadily due to increased mechanization, use of confinement housing and expanding farm size. On the average dairy farm in Wisconsin, 70% of the electricity used is for harvesting milk. This breaks down to approximately 25% for heating water, 20% for the vacuum pump and 25% for cooling milk.

New technology can reduce energy consumption

There are several technologies available that can reduce energy consumption. They work by capturing waste heat from the refrigeration system to preheat water, using well water to reduce milk temperature, and using variable speed drives to reduce pumping costs. Installing the latest high efficiency refrigeration compressors, converting to high-efficiency, primary-fueled water heaters (oil, natural or LP gas) and using energy-efficient lighting will also lower energy consumption.

Equipment upgrades and better management improve efficiency

Upgrading older equipment or purchasing high efficiency equipment to reduce energy consumption generally results in improved processes, reduced costs or the same performance for less cost—a win-win situation. Sometimes energy conservation can result from simple management changes such as moving an operation to off-peak hours or completing scheduled maintenance to keep systems working at optimal levels.

Other long-term results include cleaner air due to decreased use of fossil fuels, less dependence on unstable foreign energy sources and slower escalation of energy costs due to lower demand. Reduction in electrical energy consumption could also postpone the need for new power generation plants and transmission lines.

For more information

Information on different technologies and energy conservation opportunities are contained in the *Energy Conservation in Agriculture* publication series, available from Cooperative Extension Publications at <http://cecommerce.uwex.edu>.



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