USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

save ENERGY save MONEY

Conservation Practices that Save: Irrigation Water Management

As premier stewards of our Nation's private lands, farmers and ranchers have several available options that can help save energy while they implement the latest conservation technologies. Irrigation water management plays a crucial role in the conservation of water, and it can also save the producer money.

Agricultural water supply is emerging as a critical natural resource issue. Irrigated agriculture is essential in meeting our food and fiber production needs. As the Nation's largest water user, agriculture accounts for about 80 percent of the country's annual water consumption.

Irrigation water management encourages the application of water in an amount that meets the need of the growing plant in a manner that avoids extended soil saturation and runoff. By increasing application precision and reducing unneeded applications, water can be conserved and energy can be saved.

According to the 2002 Farm and Ranch Irrigation Survey, approximately 27 million U.S. acres are under sprinkler irrigation. About 80 percent of these acres use center pivot systems. Studies on the High Plains show that if the acres under medium pressure systems were converted to low pressure, the energy savings could add up to $15 per acre. The conversion of high-pressure systems to low pressure could result in savings of up to $66 per acre.

Drip irrigation used on vineyards in New Mexico.

Other types of irrigation systems can be upgraded to increase irrigation efficiency. Switching from high or medium pressure drip sprinklers to low pressure systems can conserve water and reduce distribution costs.

Diesel-powered pumps are used on about 10 million irrigated acres. A 10 percent improvement in water-use efficiency could reduce annual diesel consumption by 8 gallons per acre, saving about $18,000 on 1,000 acres. Nationwide, farmers could save up to 27 million gallons of fuel and $55 million per year. Replacing old diesel engines and pumps with new, energy-efficient models would further reduce fuel consumption and emissions.

In addition to improving irrigation pumping and application systems, producers can convert to crops that use less water or implement a water recovery program.

NRCS provides technical assistance to install conservation practices that save producers money and improve the environmental health of the Nation. For more information on energy-saving conservation practices, visit the NRCS "Save ENERGY, Save MONEY" Web site at www.nrcs.usda.gov.

USDA is an equal opportunity provider and employer.
May 2006