

Collection of Unwanted Pesticides, March 16

The Nebraska Department of Agriculture, in cooperation with University of Nebraska Extension, the Environmental Trust Fund, the Nebraska Agri-Business Association and the Nebraska Department of Environmental Quality, will be holding a pesticide disposal collection day on Thursday, March 16 at the Farmers Cooperative Company Fertilizer Plant, Waverly.

Anyone with outdated or unwanted pesticides may bring them to the site from 8 a.m. until noon. Pesticides should be brought in their original containers with label intact if possible, but pesticides which no longer have readable labels will be accepted. No pre-registration is required. There is no charge for up to 1,000 pounds of product from individuals or firms. A small fee will be assessed for the amount over 1,000 pounds. Once received, the pesticides will be sorted and packaged for shipment to a certified incinerator for disposal.

Remember to protect yourself and your surroundings when handling waste pesticides. You may need to wear personal protective equipment or, as a minimum, unlined neoprene or nitrile gloves, when handling waste pesticides. If the pesticide container has been damaged, pack it in another container that will hold the product if the first container should rupture while being transported. Use a container that can be left at the collection site, if it becomes contaminated.

There are three main categories of pesticides accepted:

- Unused, unneeded, old or damaged pesticides (includes insecticides, herbicides, fungicides, rodenticides and fumigants).
- Pesticides of all types (agricultural crops, livestock, homes, lawns, gardens, structural, commercial), including those in aerosol containers.
- Farmer-supplied electrical transformers containing PCB's from renovated irrigation systems.

Since different wastes need to be handled and disposed of differently, products that fit in one of the categories above are the only ones being accepted. Products not accepted include:

- Pesticide products in pressurized *cylinders*
- Waste oil or oil filters
- Antifreeze
- Paints, varnishes and thinners
- Cleaners and solvents

The Waverly site is one of only 20 sites across Nebraska selected for this pesticide collection program in 2006. Don't miss the opportunity to dispose of unwanted pesticides!

Commercial Pesticide Applicator Training

Commercial applicators are persons who apply restricted-use pesticides for any purpose on any property other than property owned or rented by the applicator or their employer or for hire or compensation. Commercial applicators shall also include any person who applies lawn care or structural pest control pesticides whether restricted-use or general-use to property of another person. Public employees (employed by a town, county, state) applying mosquito control pesticides whether restricted-use or general-use, must also hold a commercial or non-commercial certification.

You must pass a written examination in the general standards category and one or more additional categories to become licensed initially as a commercial applicator. A commercial license is good for three years. Once licensed in a category, you can maintain commercial certification by attending a recertification training session or by passing a written examination, with a few exceptions explained below.

Initial commercial certification training and testing sessions for commercial applicators will be held on March 7 and April 20 at the Lancaster Extension Education Center, 444 Cherrycreek Road, Lincoln. General standards starts at 9 a.m. and other categories begin at 1 p.m. or 3 p.m. It is highly recommended you obtain and review written study materials prior to attending the training session for initial certification to improve your chances of passing the written examination.

A commercial recertification sessions will be held March 21 with general standards starting at 9 a.m. and other categories beginning at 1 p.m. or 3 p.m.

Note: Due to time and space limitations, only specific categories will be presented on training days. Call the pesticide education office at 472-1632 or UNL Extension in Lancaster County at 441-7180 to learn which specific categories will be offered on a given day.

Call the UNL Pesticide Education office at 472-1632 to register for a training session. The training fee for either initial or recertification sessions is \$30. Commercial applicators who wish to pick up additional certification in a specific category should register as well. The training fee for adding one or more categories to an existing certification is \$15. Commercial applicators meeting the requirements for certification or recertification will receive a bill from the Nebraska Department of Agriculture for \$90 for the license fee (good for three years).

Study materials for all commercial categories may be purchased from the pesticide education office, UNL East Campus, 101 Natural Resources Hall, Lincoln or accessed online at <http://pested.unl.edu/pat/>.

Diesel vs. Propane Irrigation Systems

Tom Dorn
UNL Extension Educator

Farmer Question:

Would it pay to switch over from a diesel engine to a propane engine on my irrigation system?

Answer: When energy prices rise dramatically, it is common to question the feasibility of switching from one energy source to another for irrigation. We can use The Nebraska Performance Criteria (NPC) to compare energy sources. The NPC states the horsepower hours of useful work you should expect per unit of energy from each of the common energy sources used in irrigation. Table 1 presents the NPC for the common energy sources used for irrigation in Nebraska.

Using the NPC as the basis for comparison between energy sources, you can calculate the expected difference in energy consumption when comparing one energy source to another. For example: the NPC for diesel is 12.5 water horsepower hours per gallon (whp-h/gal) and the NPC for liquid propane gas (LPG) is 6.89 whp-h/gal. You would, therefore, expect a pumping plant using LPG to use $12.5/6.89 = 1.81$ times as many gallons per hour when connected to the same pump under the same operating conditions. Conversely, a pump switched over from LPG to diesel would be expected to burn $6.89/12.5 = 0.55$ times as many gallons of diesel as LPG. Table 2 presents all possible equivalent fuel price multipliers for the common energy sources used in irrigation.

To answer this question, we need to know the prices of the energy sources being compared. As this is being written, the local contract price of farm delivered irrigation LPG is \$1.28 per gallon and diesel is \$2.18 per gallon.

Since we can anticipate using 1.81 times as much LPG for the same amount of water pumped, we can compute an equivalent price for diesel. The LPG is \$1.28/gal $\times 1.81 = \$2.32$ /gal for diesel. The actual current irrigation diesel price is \$2.18 per gallon so diesel has a lower relative energy cost compared to LPG. Conclusion, at current energy prices, it would not pay to switch from diesel to LPG.

The simple approach discussed here ignores differences in depreciation, maintenance and labor requirements between different types of power plants. If you are interested in a more thorough cost comparison analysis, an Excel spreadsheet is available at no cost on the Lancaster County Extension Web site at <http://lanaster.unl.edu/ag/crops/irrigcost.xls>. You may run this online or download it to your hard drive and open it with Microsoft Excel.

TABLE 1. THE NEBRASKA PUMPING PLANT PERFORMANCE CRITERIA (NPC)

Energy Source	Engine output	Pumping Plant	Energy Units
	hp-h Unit of energy	whp-h Unit of energy	
Diesel	16.66	12.5	Gallon
Gasoline	11.50	8.66	Gallon
Propane	9.20	6.89	Gallon
Natural gas	82.20	61.7	mcf (1000 cu-ft) (925 BTU/cu-ft)
Natural gas	88.9	6.67	Therm (100k BTU)
Electricity	1.18	0.885	kWh

TABLE 2. ENERGY EQUIVALENCY MULTIPLIERS

Energy source Units	Diesel Gallon	Gasoline Gallon	Propane Gallon	Natural gas (mcf)	Natural gas (Therm)	Electricity kWh
Diesel	1.0	0.693	0.551	4.94	0.534	0.071
Gasoline	1.44	1.0	0.796	7.13	0.770	0.102
Propane	1.81	1.26	1.0	8.96	0.968	0.128
Natural gas (mcf)	0.203	0.140	0.112	1.0	0.108	0.014
Natural gas (Therm)	1.87	1.30	1.03	9.25	1.0	0.133
Electricity	14.1	9.79	7.79	69.7	7.54	1.0

Worried About the High Cost of Fertilizer?

Come to a Biosolids Workshop, March 9

The current cost of anhydrous ammonia is \$410/ton. You can save money by fertilizing with biosolids. To learn about Lincoln's Biosolids program, attend an educational workshop, Fertilizing Crop Land with Biosolids, held Thursday, March 9 from 3:30-8:30 p.m. at the Lancaster Extension Education Center, 444 Cherrycreek Road, Lincoln. Presented by extension and City of Lincoln personnel, the workshop is aimed at farmers who might want to participate in the Biosolids Land Application program, though anyone may attend. Please preregister by Tuesday, March 7 by calling 441-7180. If you have any questions, please call and ask for Barb Ogg.



Biosolids are organic solids separated from wastewater and biologically processed during wastewater treatment to make them safe for land application. UNL Extension in Lancaster County coordinates distribution and application of biosolids to agricultural cropland for the City of Lincoln Wastewater and Solid Waste Division.

Workshop attendees will learn:

- using biosolids will reduce fertilizer costs and increase yields
 - biosolids improves soil tilth, especially on poor or eroded soil
 - biosolids increases organic matter and water holding capacity
 - how wastewater is processed and made safe for application
 - how regulations determine application rates and locations
 - how GPS and GIS technology is used in Lincoln's Biosolids Program
- Program will also include a tour of the Theresa Street Wastewater Facility.