

Drip irrigation requires good planning, design

NEWARK, Del. — "This winter I've had more inquiries than ever before from growers concerning drip irrigation," says University of Delaware extension vegetable specialist Ed Kee. "It can be useful and profitable for a wide range of vegetable and fruit crops, but careful planning and design are required to operate one of these systems successfully. To do things right, you have to understand the principles and work with your supplier."

Drip irrigation is a low pressure system that uses perforated plastic tubing to supply water directly to or near a plant's root zone. When used in combination with plastic mulches, it creates an ideal environment for crop roots.

Good quality water is essential for the system to work, Kee says. Sand, silt, rust or other particles can clog emitter openings. Well water usually presents few problems, provided a 100-mesh screen filter is used. A sand filter must be used to clean pond or stream water. And it often helps to chlorinate surface water as it moves through the system.

"Once you've established a water source, the capacity of your pump will determine how many acres can be irrigated at one time," the specialist says. "This is also a function of tubing flow rate. The manufacturer should supply you with flow rate information." Typical tubing has a flow rate of 0.5 gallons per minute per 100 feet. This rate is required for the tubing to work properly. If rows are set on 6-foot centers, approximately 7,200 linear feet of tubing will be needed per acre. With the above flow rate, the pumping capacity required for at least one acre is 37 gallons per minute ($0.5 \times 72 = 37$).

"Besides basic flow rate data, you'll need the manufacturer's information to determine the proper row length and length and diameter of the main and submain lines," Kee says. "Most drip irrigation tubing is designed for runs of 300 feet, although some newer materials can handle lengths of 500 feet. If the main lines are too small in diameter, flow through the drip line will be

restricted."

Most drip irrigation tubing for vegetable crops is designed for use at a pressure of 5 to 8 pounds per square inch. Two have enough pressure to carry water the length of the drip line, about 20 pounds pressure is needed in the submain. This pressure is reduced to the appropriate drip line pressure by a feeder tube, which connects the lateral drip line and submain. Feeder tube length can be varied to regulate drip line pressure. A longer tube will decrease pressure by restricting water flow.

Another consideration is where to place drip tubing in relation to the crop. With cantaloupes, which will be planted at the center of the plastic mulch, tubing should be placed 6 to 8 inches away from plants. Peppers can be grown in double rows straddling drip lines. The tubing should be buried slightly to aid water distribution and to protect it from damage from mice, insects and humans.

"Use pressure gauges at the pump and main lines in the field," Kee says. "They'll alert you to any leaks in the system. They'll also help regulate water flow from the pump so as to avoid having too much pressure, which could lead to blowouts in the feeder and drip tubing."

The average watering schedule for most vegetable crops can be either one to two hours daily, or three to four hours three times a week. This is assuming a flow rate of 0.5 gallons per minute per 100 feet and an average daily evaporation rate of 0.25 inches — a typical rate for July in southern Delaware. It's important not to get behind on this schedule, Kee says, because it's very hard to catch up.

He suggests individuals interested in installing drip irrigation this spring obtain a copy of extension bulletin No. 123, "Drip Irrigation Systems for Delaware Vegetable Growers." It is

available from county extension offices in Newark (451-2506), Dover (736-1448) or Georgetown (856-5250).

"Remember to get the manufacturer's specifications as well, if you're seriously con-

sidering drip irrigation," Kee concludes. "It can be a valuable tool. But get started soon if you're going to install a system this year. It's important to plan ahead for successful results."

Corn growers honored

LANCASTER — A Lancaster County and a Lebanon County corn grower have received top honors in the Pennsylvania Master Corn Growers Contest.

Harold L. Brubaker, of Strasburg, Lancaster County, achieved a winning yield of 164.3 bushels per acre with Dekalb-Pfizer XL 71.

Kervin G. Zimmerman, of Myerstown, Lebanon County, recorded a yield of 141.9 bushels per acre with Dekalb-Pfizer XL 61.

Both growers received the commendation of Kent Schulze, vice president, sales and

marketing for Dekalb-Pfizer Genetics.

"We are pleased to have our products showcased by such successful producers," Schulze said.

Also, Zimmerman has been a Dekalb-Pfizer dealer for the past seven years.

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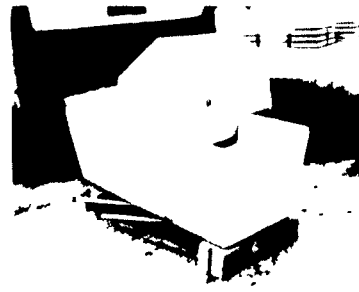
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