KENTUCKY CHRISTMAS TREE PRODUCTION WORKBOOK

FOR-25

GROWN IN KENTUCKY

IRRIGATION

Bonnie L. Appleton and Deborah B. Hill

Adequate water can be a limiting factor in any plant's growth. While it is impractical to design all Christmas tree plantings so that the trees can receive supplemental irrigation, the possibilities for providing water should be considered. With two major droughts occurring in the past decade and threats of global warming looming on the horizon, the benefits of an irrigation system may outweigh the costs.

Christmas trees can be watered in three basic ways:

- water wagon, tank or truck
- movable overhead irrigation equipment
- trickle or drip irrigation

Each of these methods has advantages and disadvantages that should be considered.

Use of a **water wagon,** tank or truck may require purchasing equipment or a lease or rental agreement. You will need labor to drive the equipment and to do the watering. Leasing or renting equipment can be advantageous because no investment is necessary in years with adequate rainfall. Spot watering is also advantageous in that water is only applied where and as it is needed.

Valve, regulator and filter equipment for drip irrigation

If you already own **movable overhead irrigation equipment,** watering Christmas trees can be an additional way to utilize the equipment. With movable equipment, you do need labor to move the system from field to field. Overhead irrigation wastes great quantities of water through evaporation, and since trees and vegetative cover are watered non-selectively, you may need to mow the ground cover more frequently. If you do not already have the equipment, this method is not recommended.

Trickle or drip irrigation requires considerable financial investment initially in lines, filters, meters, emitters and such, but the system can be made portable so that it can be moved from year to year. Because it is easily automated, labor is needed more to install the system than to operate it. Trickle irrigation also can be a way to apply fertilizer, but water quality must be maintained at a high level of clarity or the emitters will clog.

When you decide whether irrigation is desirable or practical, consider your water source. City water may be readily available but may be expensive. Pond, well or river water may be available with no direct cost, but the delivery system may require a higher quality or larger quantities than can be consistently supplied. Distance from the water source to the trees is also an important consideration for both efficiency and cost.

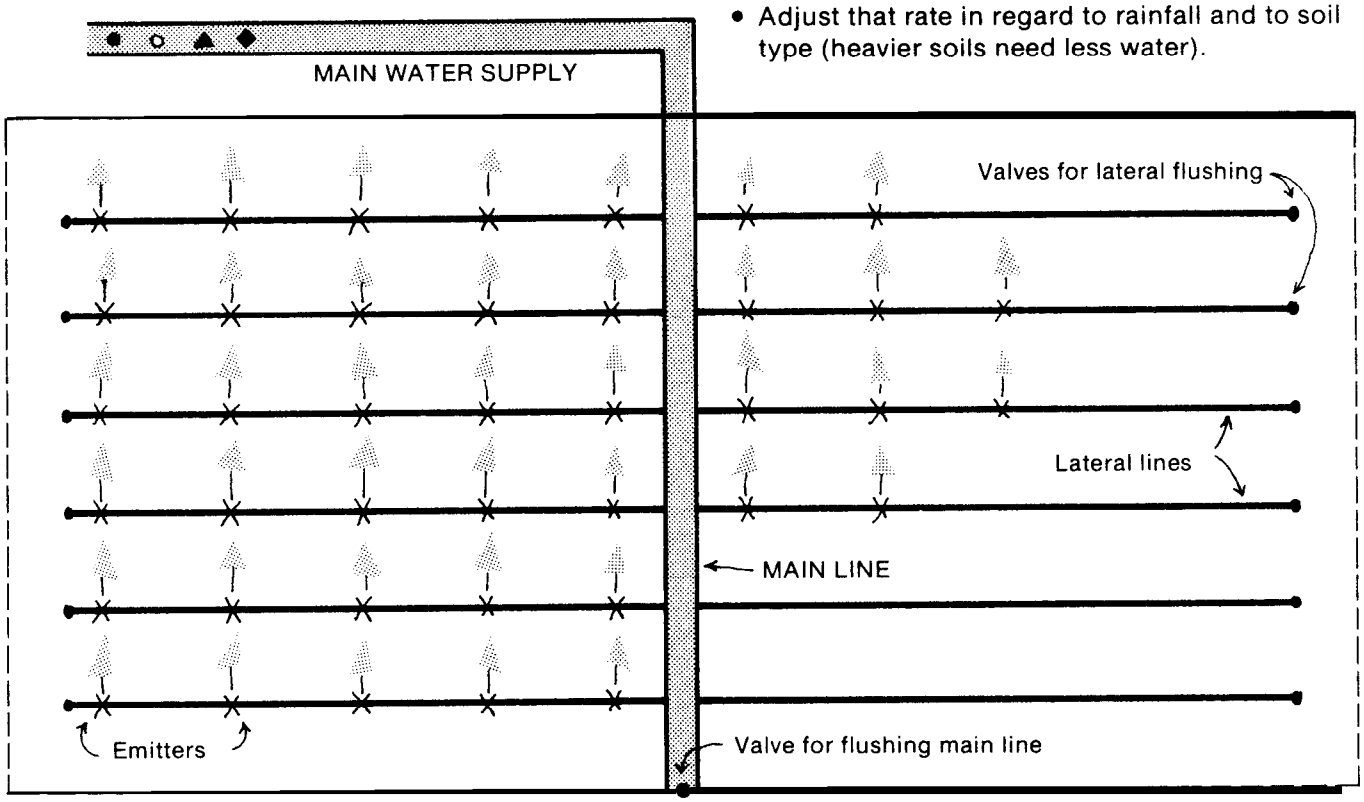
Water will be most critical when the trees are young or when trees of any age are under drought conditions. Your ability to irrigate may accelerate growth, may prevent a decrease in growth rate during dry seasons, or may outright save trees. While it will be an additional expense, it may readily pay for itself in growth rate, tree quality and tree survival.

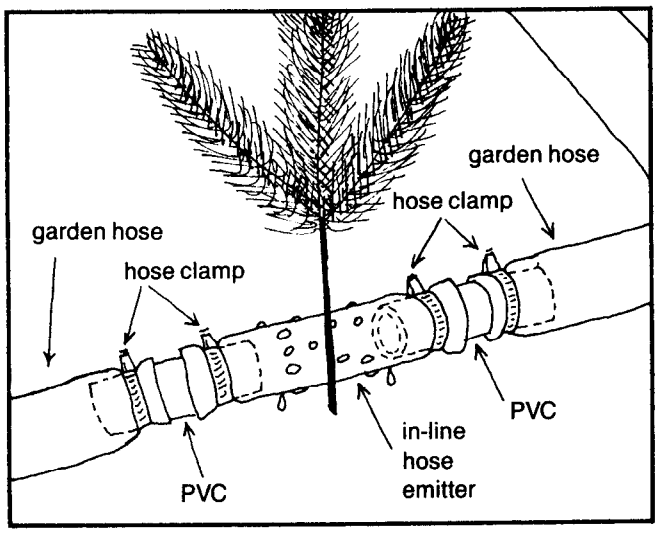
DRIP IRRIGATION LAYOUT

- Valve
- o Filter
- ▲ Pressure Regulator
- ◆ Pressure Gauge

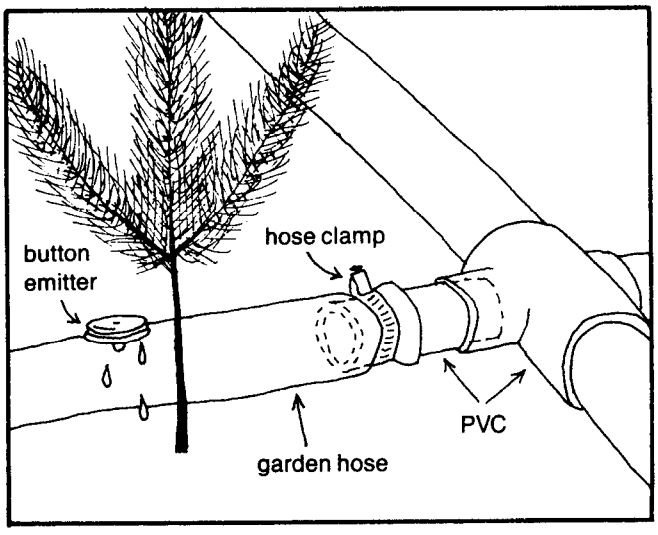
Things to note:

- Place emitters only where crop trees are located.
- Once your system is installed, calibrate your flow rate per hour.
- Adjust that rate in regard to rainfall and to soil type (heavier soils need less water).





In-line hose emitter is made of re-constituted rubber tires and is porous. It oozes water at a steady rate.



Button emitter is inserted into an ordinary heavy-duty garden hose, every 6 ft. Like a slightly-open faucet, each emitter drips water at a steady rate.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, C. Oran Little, Director of Cooperative Extension Service, University of Kentucky College of Agriculture, Lexington, and Kentucky State University, Frankfort.

This publication was printed using soybean oil-based ink.

Issued 4-86, 3M; rev. 8-91 -- 2M