United States Department of Agriculture
Natural Resources Conservation Service

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Water Quantity Enhancement Activity – WQT12 – Computerized hole selection for polypipe

Enhancement Description
This enhancement consists of calculating hole sizes for polypipe tubing using computer software to determine the optimal size hole per furrow in order to improve irrigation efficiency and decrease the quantity of irrigation water need per season.

Land Use Applicability
Cropland

Benefits
This enhancement decreases the quantity of irrigation water needed by applying the water at an optimal rate per furrow based on the length of the furrow and the soil characteristics. Additional benefits may include reduction of sedimentation in streams and increased water quality in downstream waters due to a decrease in excess irrigation runoff, and energy conservation.

Conditions Where Enhancement Applies
This enhancement applies to crop land use acres utilizing polypipe tubing to deliver water to furrow surface irrigated fields.

Criteria
1. Use a software application to select the hole size for the polypipe tubing.
2. Install, permanently, a flow meter on the well or relift pump supplying the irrigation system.
3. Develop a detailed written description of the field(s), including elevations along the desired tubing location, field geometry, row lengths, soil descriptions, and distances between rows.

Adoption Requirements
This enhancement is considered adopted when holes have been punched in the polypipe according to the computerized hole size selection software and irrigation has been successfully applied to the fields.

Documentation Requirements
1. Computerized hole selection run printouts showing the optimal design.
2. List of field(s) where this enhancement was utilized and the field(s) geometry with row lengths, distance between rows, and soil types.
3. Dates when irrigation is applied to fields.
4. Photographs of the uniform flood advancing down furrows. Photos must be dated and labeled with field number.

References
University of Arkansas Cooperative Extension Service