
2008 USDA-CSREES National Water Conference
Sparks, NV

# Irrigation Timing and Amount Effects on Oilseed Sunflower Production in the Southern High Plains

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## Abstract Text:

Water is the most important factor limiting crop productivity in the Southern High Plains. Rainfall in the region is low and the distribution is erratic. Therefore, the majority of agriculture depends on irrigation. Water resources in the region are declining and there is a need to use better adapted water use efficient crops. Sunflower is a suitable crop for the region due to its drought stress tolerance and rotational benefits. Introduction of biofuel industries in the region has increased the demand for oilseed in the region. Therefore, better understanding of sunflower water use and yield relationships in the Southern High Plains are needed to maximize the water use efficiency of irrigation water. Both amounts and timing of water availability affect crop response to water by altering the source and sink relationships. Field trials were conducted at two diverse locations on the Southern High Plains (Clovis, NM and Lubbock, TX) to understand the effect of timing and amount of irrigation water application on sunflower growth, water extraction and productivity. Irrigation levels ranged from 0 to ~10''. Preliminary results from two trials on seed yield, oil yield and water use patterns will be presented.

## Impact Statement:

Irrigation water resources in the Southern High Plains is declining very rapidly. Therefore, we need to maximize the return per unit of water applied. The study focuses on water use and yield relationship for sunflower. It will help farmers to decide how much irrigation water to use on sunflower.