COTTON CROP DATA SHEET

Cotton Water Management
PLANT DATE: March 10 - May 15

SOIL: Fine and Mid Textured
DEFOLIATION: September 20

EFFECTIVE PRECIPITATION: Rain normally does not satisfy a portion of the water requirement during the growing season, but rainfall during the winter can contribute to preirrigation. However only 35-50 percent of the winter rainfall can be considered effective because the ground is not covered.

ROOT ZONE: Cotton grown on fine textured soils generally develops a maximum effective root zone of 4 to 5 feet. Cotton grown on coarser textured soils develops a maximum effective root zone of 5-6 feet.

However, root zones may be limited by hight water tables, compacted layers or high salinity.

ALLOWABLE DEPLETION: Fine textured soils do no release moisture to plants as readily as coarse textured soils. The moisture in coarse textured soils can be easily taken up by the cotton plant so that during the growing season the average depletion in the root zone may safely range from 60-70 percent before an irrigation without stressing the plant where fine textured soils have a recommended allowable depletion of 50-60 percent. With the increased use of growth regulators, less emphasis has been placed on regulating excessive vegetative growth with water stress.

Care should be taken when approaching the upper limits of depletion because a couple of hot or windy days just prior to a scheduled irrigation can seriously stress the plant. It is important to schedule each irrigation so that the allowable depletion for the last portion of the field to be irrigated is not exceeded. Coarse textured soil reductions may be depleted to 80-90 percent at the time cotton is defoliated where the recommendation for fine textured soils is 80 percent.

STRESS SENSITIVE PERIODS: Severe water stress during bloom may lead to sizeable yield

IRRIGATIONS: First: The first irrigation generally replaces water depleted from the top two feet of the soil profile. Delaying the first irrigation during a period of normal temperatures will limit fruiting and early growth. When temperatures are below normal, an early first irrigation may limit growth and fruiting because the additional water decreases soil temperatures.

Final: The date of the final irrigation depends on the amount of available moisture in the root zone, the amount of water than can be placed in the root zone by the irrigation and the remaining water use between the date of the last irrigation and crop maturity. The last irrigation must provide adequate soil moisture to fully develop those bolls expected to mature. As an example, during average years, an irrigation that refills the crop root zone on August 7 for fine textured soils and August 22 for coarser textured soils will provide the 9.5"/6.6" of water the crop normally consumes, respectively, between the final irrigation and defoliation.

WATER BUDGETING:

Average Seasonal ET (N/C/S)	2.0/2.1/1.9'
Average Effective Precipitation	0.1'
Average Salinity Control	0.3'

Water Use-in.*	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Northern				0.2	0.4	3.9	8.5	8.4	3.3				24.7
Central				0.2	0.5	4.4	9.0	8.5	2.8				25.3
Southern				0.2	0.5	4.1	8.3	7.3	1.9				22.2
Deliveries-%					10	15	30	25				20	100%
* Note: Assumes mid-April plant date.													