

Tobacco Irrigation 2002 Results

Agricultural Experiment Station
The University of Tennessee 

Cooperators

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Tobacco Irrigation Research

- Objectives
 - Measure the consumptive water use of burley and dark fire-cured tobacco
 - Look at the application of using drip irrigation for tobacco production

Procedures

- Treatments (irrigation scheduling)
 - Control (no irrigation)
 - One-inch per week
 - One-inch per 10 days
 - Skip-row dripline placement (1"/10days)
 - Soil Moisture Sensors

Soil Moisture Sensors

- Watermarks
 - Granular matrix sensors
 - based on matric potential (tension)
 - placed at 6" depth
- Independent Question
 - what is the best depth to place one sensor?
 - Treatments 1 and 5 have 6" and 12" sensors

Layout

- Plots
 - 100 feet long
 - dripline along each row (except treatment 4)
 - water meter on each plot
- Experimental Design
 - three replicates
 - randomized complete blocks

Three Years of Data

- Dark Fire-Cured

- one-inch of water per week

- Year 2000 3050 lbs/ac \$5075/ac
 - Year 2001 3363 lbs/ac \$4811/ac
 - Year 2002 3402 lbs/ac \$4833/ac

- no irrigation

- Year 2000 2632 lbs/ac \$4171/ac
 - Year 2001 3102 lbs/ac \$4013/ac
 - Year 2002 2900 lbs/ac \$4146/ac

Three Years of Data

- Burley

- one-inch of water per week

- Year 2000 2996 lbs/ac \$5698/ac
 - Year 2001 3417 lbs/ac \$6486/ac
 - Year 2002 3039 lbs/ac \$5945/ac

- no irrigation

- Year 2000 2271 lbs/ac \$4311/ac
 - Year 2001 3153 lbs/ac \$6023/ac
 - Year 2002 2427 lbs/ac \$4719/ac

Treatment Data - Yield

Treatment	Yield (lb/ac)					
	Burley			Dark Fire-Cured		
	Year 2000	Year 2001	Year 2002	Year 2000	Year 2001	Year 2002
Control	2271	3153	2427	2632	3102	2900
1"/week	2996	3417	3039	3050	3363	3402
1"/10 days	3259	3324	3012	3166	3152	3466
0.1" alt. days	2694	-		2795	-	
Skiprow dripline	-	3153	2941	-	3118	3099
Sensors	3033	3181	3224	3168	3125	3484

Total Water - 2002

Water Application by Treatments
Including Rainfall (inches)

Week of:	Check	1"/week	1"/10 days	2 crops rows/line	Sensors
July 29	0.15	1.15	1.15	1.15	1.15
Aug 5	0	1	0.5	0.25	1.5
Aug 12	0.8	1.3	0.8	1.3	1.8
Aug 17	0.95	0.95	0.95	0.95	0.95
Aug 26	0.5	1	1	0.75	1
Total	2.4	5.4	4.4	4.4	6.4

Questions ?

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