

Tobacco Irrigation Study - Anderson Circle Farm, 2001
Anderson Circle Farm & Univ. of Ky Cooperating
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Objectives: Compare irrigation effects by two trickle tube methods and with no irrigation.

Methods:

1. Trickle tube under plastic of raised bed (standard pepper production method),
2. Trickle tube beside row in normal tilled soil production
3. Normal tilled soil production with no irrigation

The raised bed method was standard pepper production method with approx. a 30 inch wide raised bed with black plastic mulch applied. One trickle tube of ½ gal. per minute per 100 ft. was placed under the plastic. Two rows of tobacco transplants were set on the raised bed with a row spacing of 15 inches and plants 30 inches in the row on a staggered pattern. The raised beds were 60 inches on center. The plot consisted of four raised beds of approx. 400 ft. in length.

Two conventionally tilled and transplanted plots of four rows each, approx. 400 ft. in length, were used for the irrigated and non-irrigated plots. A trickle tube was placed beside each row for the four rows of irrigated tobacco.

Irrigation for the raised beds was applied twice per week with approximately 50 lbs Ammon. Nitrate (16 # N) applied per acre per week in the water.

No irrigation was applied to the field plot as rainfall was reasonably timely and adequate.

Soil tensiometers were installed in some of the plots to give a reading for soil moisture conditions. The raised beds were generally irrigated to keep the tensiometer readings below 50-60 mb. Data for the other two plots were recorded periodically.

The tobacco had normal pesticide and sucker control applications. The plots were cut and housed Sept. 11-13 and stripped into four grades Nov. 25-27. Bales of the respective plots and grades were delivered to the Freeman & Mercer Tobacco Warehouse floor in Harrodsburg and sold on Dec. 3, 2001.

Production and marketing data follow with observations on the cured tobacco and market quality.

Table 1. Fertility Data -Tobacco Irrigation Study - Anderson Circle Farm, 2001

<u>Plot</u>		<u>#N</u>	<u>#P</u>	<u>#K</u>	<u>Ph</u> <u>Lime</u>	<u>Date Applied</u>
Raised Bed (Trickle under Pl.)	Preplant	225 Calc. N	100	80	6.3 (None)	Apr. 26, 01
	Transpl.					May 29, 01
Field Irrig. (Trickle)	Preplant	400# 46%	0	70	6.4, 1000# Pell.	Apr. 26, 01
	Side Dr.	275# Ammon. N.	34%		lime	Jun. 13, 01
	Side Dr.	400# 15-0-14				Jun. 23, 01
	Transpl.					May 29, 01
Field Non-Ir.	Preplant	400# 46%	0	70	6.4, 1000# Pell.	Apr. 26, 01
	Side Dr.	275# Am.N.	34%		lime	Jun. 13, 01
	Side Dr.	400# 15-0-14				Jun. 23, 01
	Transpl.					May 29, 01

Variety: TN 90

Started Cutting big field Aug. 20, 2001, rained over 4.0 inches during the week

Table 2. Notes on rainfall & Irrigation Data - A.C. Farm, 2001

<u>Plot</u>	<u>Date</u>	<u>Tens.Rdg.</u>	<u>Rainfall</u>	<u>Irrig.</u>	<u>Remarks</u>
Raised Bed	Jun. 22		?		Growing well
	Jun. 29		?	"	"
	Jul. 16	52	0.0	none	OK
	Jul. 18	58	0.9	none	OK
	Jul. 23	41	0.0	none	Soaked
	Aug. 1	49	rain	-	
	Aug. 8	44	-	-	
Field Irrig. (Never Irrig.)	?		2.4		Growing well
	?		1.7		Growing well
	Jul. 7		0.4		
	Jul. 16	60			
	Jul. 18	50	0.9		
Field Non-Ir.	?		2.4		Growing well
	?		1.7		Growing well
	Jul. 7		0.4		
	Jul. 16	62			
	Jul. 18	50	0.9		

Sept. 11 - Cut					Nov. 25 - Stripped Non-Irr. 312 sticks
Sept. 13 - Housed					Nov. 27 - Stripped Irr. 312 sticks

Table 3. Marketing Data - A.C. Farm - 2001

<u>Plot:</u>	<u>Whse. ID #</u>	<u>Wt.</u>	<u>Grade</u>	<u>Spt.Price/lb</u>	<u>Mkt.Pr./lb</u>
Raised Bed	521-86	65	X3F	1.90	1.91
	521-87	225	B4F	1.91	1.92
	521-88	72	B4F	1.91	1.92
	521-89	<u>73</u>	T4K	1.27	1.85
		435			

(7 bales, 62 lb/bale, thin & short leaves, top leaf grade variegated & off color, 312 sticks stripped, 1.39 lb/stick, **2070 lbs/acre.**)

Field - Irrig	521-90	92	C4F	1.91	1.92
	521-91	322	B3F	1.91	1.92
	521-92	100	B4F	1.91	2.02
	521-93	<u>104</u>	T5FR	2.01	2.02
		618			

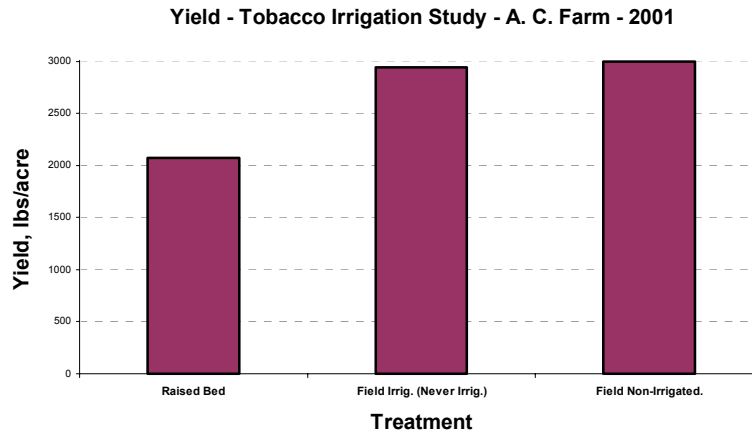
(9 bales, 68 lb/bale, leaves more uniform in color, 312 sticks stripped, 1.98 lb/stick, **2941 lb/ac**)

Field -Non-Irrig	(not sold*)		C4F		
	521-94	247	C4F	1.91	1.92
	(not sold*)		B4K		
	521-95	<u>200</u>	T5FR	2.01	2.02
		447			

(*1500 lb. quota limit reached, 5 of 7 bales sold)

(7 bales total, 90.2 lb/bale, leaves uniform in color except for 1 grade, 312 sticks, 2.016 lb/stick, **3000 lb/ac**)

Observations: The raised bed tobacco had upper leaves of poor quality due to greenish, yellow cast, apparently due to high N fertility and poor curing. The total yield was lower than the other plots (2070 lb/ac). The two field plots were typical color for the 2001 crop with one receiving a K grade for yellowish cast. The yields were rather close - 2941 & 3000 lbs/ac - and higher than the raised bed of 2070 lb/ac.



end 4-8-02