

ABSTRACT

An experiment was carried out to investigate the effect of irrigation on the yield and quality of Virginia flue-cured tobacco during the 1970/71 growing season.

Transplanting took place in the last week of November and irrigation was carried out between January 25th and March 16th. The two levels of irrigation used were a low application of 1.0 inch per week and a high application of 1.5 inches per week. Harvesting occurred between January 27th and April 8th.

The high December rainfall resulted in a high soil moisture content and a high soil moisture reserve at a time (i.e. after transplanting) when a relatively dry period was desirable.

The growth variability between experimental units in the early stages was probably due to differences in seedling quality and soil texture. This resulted in a less uniform tobacco stand at harvesting than was desirable.

The soil moisture content of the control was adequate until the last month of harvesting but no signs of permanent wilting were observed.

There were indications that the plants irrigated at the lower level had larger top leaves which tended to ripen more quickly, whereas the plants irrigated at the high level indicated a slower rate of ripening in the middle and top leaves.

The plants irrigated at the lower level received a total of 20 inches water throughout the growing period and this resulted

in a considerable increase in green weight yield. The plants irrigated at the higher level received a total of 24 inches of water throughout the growing period and although there was no increase in green weight yield there was an increase in the average price paid per pound and therefore an increase in quality. None of the results obtained proved to be statistically significant.

It appeared that irrigation had little or no effect on the curing out percentage.

Both irrigation treatments affected the chemical content of the cured leaf by increasing the reducing sugar content and the sugar/alkaloid ratio, but decreasing the total alkaloid content.

It was concluded from the experiment that if the December rainfall is 5 inches or less irrigation applications of 1.0 - 1.5 inches per week during January, February and early March would be beneficial to the yield and quality of tobacco.

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