

and increased the percentage of red to dark tobacco very much over the no fertilizer plot. The quality of the crop was much superior to that from No. 1 and was more mature.

Plot No. 3, yielded at the rate of 1,040 pounds of red and 270 pounds of dark and green grades making a total of 1,310 pounds per acre. The plot was fertilized with sulphate of potash at the rate of 400 pounds per acre. The yield was increased over the no fertilizer plot. The percentage of red to dark grades was not as good as the result obtained on the phosphate plot. The body of the leaf was good, maturity was not as well advanced as on the phosphate plot although potash showed a very beneficial effect on yield and quality.

Plot No. 4, yielded at the rate of 1,330 pounds of red and 270 pounds of dark and green grades making a total of 1,600 pounds per acre. The plot was fertilized with a mixture of sulphate of ammonia, 200 pounds, acid phosphate 600 pounds, and sulphate of potash 400 pounds. The yield from this plot exceeded all others and the quality of the cured leaf was superior to all other plots.

The experiment indicates that a satisfactory crop of flue-cured tobacco of good colour can hardly be expected on land of fair improvement or better, where a crop of clover is turned under preceeding the tobacco.

It also indicates the need of these soils for nitrogen, phosphoric acid, potash and humus, and also that when applied in good quantity much increased yields can be expected.

The tendency of the fertilizer to improve the quality and hasten maturity even when large quantities of nitrogen or ammonia are present is also indicated.

More complete data and experiments conducted for a longer period are necessary before drawing conclusions definitely.

THE PROPORTION OF STALK TO LEAF.

The striped leaf and stalks from twenty-four plots in co-operative fertilizer tests each year for the past two years were weighed in order to determine if any correlations of leaf to stalk could be noted. Growing, topping and harvesting were done as is practised by the growers of the flue-cured district under ordinary field conditions.

The percentage of leaf to stalk was very close each year for all plots regardless of the fertilizer applied, or the yields obtained. Yields of flue-cured tobacco on the plots varied from 1,600 pounds to 400 pounds per acre but the proportion of stalk to leaf remained practically the same.

The Warne and Hickory Pryor varieties were grown in these experiments, and percentage of stalk to leaf remained practically constant for both varieties.

In no case did a plot show less than 50 per cent of stalk to leaf, nor more than 60 per cent. Most of the plots were very close to the average of 55.2 per cent.

The soil on which these experiments were conducted is typical of the district in physical and chemical character and composition.

In the flue-cured belt of the south, Davidson (8) gave the percentage of stalk to leaf as 35.2 per cent.

By comparing 353 pounds of stalk for each 1,000 pounds of flue-cured tobacco leaf produced in the south with 552 pounds of stalk for each 1,000 pounds of flue-cured tobacco leaf produced in Canada, it is seen that an extra 200 pounds of stalk to each 1,000 pounds of cured leaf is produced, in this country.

The moisture content of the cured leaf is taken as 7 per cent and the moisture content of the stalk as 5 per cent which is the per cent given by Davidson for the cured product.

There seems to be little reason why the percentage of stalk to leaf should be higher in Canada than in the south, and it is believed that the explanation will be found in the practice of too late, and too high, topping of flue-cured tobacco in the former. If