THE EFFECT OF THE MANNER OF HARVESTING AND CURING ON THE YIELD OF BURLEY TOBACCO

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ABSTRACT

The possibility of producing Burley tobacco in the vicinity of the Rovinj Factory on the Istrian peninsula was investigated over a period of three years. The experiment was set up according to the split block method. One half of the trial field was topped. The other half of the field was untopped. The harvesting and curing was performed in three ways: 1. the tobacco was picked six times in insertions; 2. two harvests were performed and the remaining leaves were dried on the cut stalks; 3. all the leaves were dried on the on the stalks. The topped tobacco and the tobacco harvested by insertions gave the highest yields. The lowest yield was record in the case of untopped tobacco and when all the leaves were dried on the stalks.

KEYWORDS: Burley tobacco, manner of harvesting, manner of curing, tobacco yield

INTRODUCTION

About 8 000 tons of tobacco are produced in Croatia (4). Of the total amount of tobacco produced, 95% is flue-cured tobacco. According to Akehurst (1981), Burley tobacco accounts for about 10,7% of the world tobacco production (1,6). The largest producer of this type of tobacco is the USA: with about 47% of the world production (6).

In Croatia the production of Burley tobacco varies from year to year, although the climatic conditions are favourable. Under certain pedoclimatic conditions, a high yield and good quality may be archived by the proper selection of the tobacco sort and by the use of optimum agro. technical measures (1,5,7,9).

The aim of this research was to study the possibility of producing Burley tobacco in Istria to meet the needs of the Rovinj Tobacco Factory. A further aim was to study the impact of the manner of harvesting and curing on the tobacco yield. The possibility of curing Burley on the stalk was investigated due to the scarcity of labour in the region, since tourism is very well developed there.

MATERIALS AND METHODS

The experiment was carried out on red soil (8), typical of the area investigated, i8n the vicinity of the Rovinj Tobacco Factory. The experiment involved two factors (2x3) with six combinations randomized according to the split block method in three repetitions. The topped and untopped tobacco was harvested and cured in three ways:

1. the tobacco was picked six times in insertions;
2. two harvests were performed and remaining leaves were dried on the cut stalks;
3. all the leaves were dried on the stalks.

In the experiment, the Croatian sort Culinec (6) was planted at intervals of 100 x 50 cm. The soil was ploughed to a depth of 30 cm and was cultivated twice during vegetation. The tobacco was fertilized with 150 kg of N, 120 kg P_2O_5 and 200 kg K_2O. Four rows were planted in each test plot and the harvesting and yield measurement were carried out on the 2 middle rows, i.e. on 40 plants.

RESULTS

The area investigated has a Mediterranean climate strongly influenced by Mount Ucka on the one side and the Adriatic Sea on the other. During the summer there is regularly a lack of water in the soil and irrigation is needed. The soil on which the research was carried out is red soil with a slight acid reaction, poor in humus, poor in phosphorus and with a medium supply of nitrogen and potassium (Table 1), stable in structure and of a clayey texture (8).

In all the years of research, the topped tobacco had a significantly greater leaf yield compared to untopped tobacco (1,7).

According to the average data for three years, topping the tobacco at the beginning of blossoming led to a yield increase of 20% (7). The suckers were sprayed with a contact and systemic suckericide.

Table 1.: Chemical Properties of the Soil

Depth	PH		Humus	Total N	Available nutrition	
cm	H_2O	KCl	%	%	mg/100g	
0-30	6.5	5.8	1.4	0.07	5.8	19.2

Table 2.: Effects of Topping on Tobacco Yield, t/ha

Treatments	Year			Average
	I	II	III	
Topped tobacco	2.6 a	2.5 a	2.5 a	2.5
Untopped tobacco	2.0 b	2.0 b	2.1 b	2.0

Table 3.: Effects of the Manner of Harvesting on the Yield of Burley Tobacco, t/ha.

Treatments	Year			Average
	I	II	III	
1. Six harvests	2.6 a	2.7 a	2.8 a	2.7
2. Two harvests + curing on the stalk	2.4 b	2.4 b	2.3 b	2.4
3. All leaves cured on stalk	1.9 b	1.7 b	1.9 b	1.8

The lowest yield was obtained from tobacco where all the leaves were cured on the stalks (Table 3). The yield thus obtained was 33.4% lower than the yield of tobacco where all the leaves in all the years of research and on the average was obtained from tobacco where all the leaves were cured on the stalk (Table 4). Because of drought, especially in August and September, some of the leaves lost before the stalks were cut and this reduced the tobacco yield considerably.

Table 4.: The Interaction Effect of Topping and the Manner of Harvesting and Curing on the Yield of Burley Tobacco, t/ha.

Treatments		Year			
Tobacco	Manner of harvesting	I	II	III	Average
Topped tobacco	1.Hand picked	3.0	3.1	2.9	3.0
	2.Two harvests by hand + curing on the stalk	2.9	2.7	2.6	2.7
	3.All leaves cured on stalk	2.0	1.8	2.1	2.0
Untopped tobacco	1.Hand picked	2.3	2.4	2.7	2.5
	2.Two harvests by hand + curing on the stalk	2.0	2.0	2.0	2.0
	3. All leaves cured on stalk	1.8	1.7	1.6	1.7
LSD, 0.05		NS	NS	NS	NS

CONCLUSION

The research indicates that Burley tobacco can be grown successfully on red soil in Istria. Due to the very dry climate during the summer months, the tobacco has to be irrigated.

Higher yields may be obtained by topping and harvesting and curing the leaves by insertion.

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