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DEGUSTATIONAL PROPERTIES OF SOME PRILEP TOBACCO VARIETIES

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ABSTRACT

Degustational properties of tobacco are one of the most important parameters that determine the quality of tobacco in smoking. Investigations of these properties were performed in 2009 and 2010 on six varieties of the oriental type Prilep: P-23 Ø, P 12-2/1, NS-72, P-66-9/7, P-79-94 and Prilep Basma 82. The best average results regarding the investigated properties were obtained in the check variety P-23 (73.34 points). Common opinion of the Taste panel is that all investigated varieties show good degustational properties that are typical for oriental tobacco, but P-23 and P 12-2/1 are the most prominent among them.

Keywords: tobacco (*Nicotiana Tabacum L.*), taste evaluation, type Prilep.

ДЕГУСТАТИВНИ СВОЈСТВА КАЈ НЕКОИ СОРТИ ОД ТИПОТ ПРИЛЕП

Дегустативните својства на тутунската суровина се меѓу најважните параметри кои го определуваат квалитетот на тутунот за пушење. Истражувањата за овие својства ги вршевме на шест ориенталски сорти тутун од типот прилеп: П-23 Ø, П 12-2-1, НС-72, П-66-9/7, П-79-94 и Прилеп басма 82 во 2009 и 2010 година. Просечните резултати од двегодишните испитувања покажаа дека најголем број бодови доби контролната сорта тутун П-23 (73,34 бода) и таа е најдобра во поглед на овие особини. Општо мислење на дегустативната комисија е дека сите испитувани сорти тутун имаат добри дегустативни својства, карактеристични за тутунската суровина од ориенталско потекло. Сепак, посебно треба да се истакнат сортите П-23 и П 12-2/1.

Клучни зборови: тутун (*Nicotiana Tabacum L.*), дегустација, тип прилеп.

INTRODUCTION

Tobacco is one of the most important industrial crops in the world. Due to the strong anti-smoking campaign, its consumption in developed countries has fallen, but increases in developing countries it is increasing.

All products that are used by man are in solid and liquid state, only tobacco is used in a form of smoke which is produced in combustion during the transition from solid to gaseous state.

Tobacco is commonly used in a form of processed products: cigarettes, cigarillos, cigars and pipe tobacco, and very little for chewing and snuffing. The most important degustational properties of tobacco are the physiological-tasting quality, aroma, strength and flavor of the smoke and they have a great influence on evaluation of its quality.

According to Sozonovic (1960), the quality of tobacco depends on interrelations of complex chemical matters in tobacco leaf, related to the properties of the products for combustion of these matters. Therefore, it is not possible to determine the quality of tobacco by technical measures. Chemical analysis can not provide complete estimation of quality according to the content of certain components. Also, the organoleptic assessment does not give objective assessment of tobacco quality, because the properties of tobacco and tobacco products are finally completed during the combustion of tobacco in the process of smoking, through the smoke effect on senses. Therefore, the final estimation of tobacco quality can be made only by experimental smoking, i.e. degustation.

The properties of tobacco estimated by tasting, especially the physiological effect, strength, flavor and aroma, depend not only on the properties and composition of tobacco blend, but also on some technological factors, technical solutions, method of smoking, etc. The term *degustation* (Lat. degustatio – tasting, taste and aroma evaluation) denotes systematic investigation of human's response to physical and chemical properties of tobacco smoke.

Properties of tobacco manifested while smoking are called degustational properties (Uzunoski, 1985). According to Boceski (2003), the smoker receives "emotional satisfaction and pleasure". Alic-Dzemidjic et al. (1999) reported that chemical composition of tobacco and conditions of burning have a strong impact on smoke properties. Nuneski I. and Nuneski R. (2009) stated that all products of smoking are intended to give the smoker pleasant aroma and taste, as well as physiological pleasure.

The aim of this paper was to make comparative investigation on degustational properties in some varieties of Prilep tobacco grown under same conditions and to mark all the differences among them.

MATERIAL AND METHOD

Degustation as a method for quality assessment of tobacco and tobacco products is based on the properties that are manifested in smoking (irritation, taste, aroma and physiological strength).

The material used for comparative investigation of degustational properties consisted of the following six varieties of tobacco type Prilep: P -23 Ø, P 12-2- , NS -72, P -66-97/7, P-79-94 and Prilep Basma 82.

These varieties were subject of our investigations because for some period they have marked the production of Prilep tobacco in Republic of Macedonia and wider, except for the variety Prilep Basma 82 which was recognized in 2010, while our investigations were not finished yet.

Raw tobacco from the 2009 and 2010 crop was used for investigation purposes. The trial was set up at the experimental field of Tobacco Institute - Prilep.

Degustational properties of tobacco varieties were evaluated by the Taste panel of Tobacco Institute – Prilep, composed of seven members, by the method of

"anonymous tasting" according to the standard and the "Key for taste evaluation of oriental aromatic tobacco".

The above taste evaluation also included investigation on cigarette combustibility which, although not being smoking property but characteristic of the raw, still needs to be monitored because it has interactive impact on the smoking properties of tobacco smoke.

Samples of the investigated varieties were selected for making anonymously coded cigarettes (from 1 to 6) and the Taste panel evaluated the quality of each variety separately for both investigation years.

RESULTS AND DISCUSSION

Tobacco quality was estimated according to the total number of points for each degustational property and each variety. According to data presented in Table 1, the highest score in 2009 was observed in the check variety P -23 (72.70) and the lowest in NS -72 (67.90). With regard to their strength, all varieties were assessed as medium strong tobacco. In evaluation of other properties, the best results were recorded for the check variety P-23, followed by P -12- 2/1, P - 66-9 / 7, P - 79-94, Prilep Basma - 82 and NS - 72.

Similar results were obtained in 2010 crop (Table 2), when the highest total number of points (74) was also given to the check P - 23 and the lowest number to NS-72 (69.51). The variety P - 79-94 was the second best (72.01 points), followed by P 12-2/1, Prilep Basma - 82 and P- 66-9/7.

The average values for degustational properties of the varieties in both years of investigation are presented in Table 3. Here again, the best results were observed in P -23 and the worst in NS-72. The least irritation in smoking was obtained in the check variety, slightly poorer taste and aroma were observed in NS-72, all six varieties showed considerably good combustibility and ash compactness. According to the strength, all of them belong to the group of medium strong tobaccos. Degustational properties of tobacco (total number of points and the average in both years of investigation) are presented in Figure 1.

Besides the above presented values, the Taste panel also gave a descriptive grade for each variety separately:

Code 1 (P-23) - characterized by full, satisfying smoking. There is a slight irritation on draw, without any scratching or harshness. It leaves no coating sensation in oral cavity. The smoke is smoothly transmitted to the chest without negative sensation. The taste is sweetish, without bitterness, and pleasant on smoking. It has intensive aroma, typical for oriental type of tobacco. In terms of strength, it was evaluated as medium strong, still somewhat stronger than the other codes. Ash compactness is very good, with slight flaking. Combustibility of cigarette is good to very good, with small burning ring. The color of the ash is whitish gray to white. Typical for this variety is that its chemical components are composed so well that it gives the cigarette a harmonic, full and satisfying smoking.

Code 2 (P 12-2/1) – from the aspect of irritation, the raw is good, without in terms of irritation and pricking sensation perceived by the smoker on tongue. The taste is slightly weaker than that in Code 1. No bitterness, burning and coating of the oral cavity is felt during smoking. Compared to Code 1, it feels slightly emptier. The aroma is intensive,

penetrating and slightly more noble. According to strength, it can be assessed as medium strong raw material. Ash compactness is good to very good, with slight flaking. Combustibility is good, with somewhat bigger burning ring. The color is whitish gray to white. In the opinion of the members of the panel, the taste on this variety slightly deviates from the other degustational properties.

Code 3 (NS-72) – the amount of irritation in this raw is more prominent, the taste is slightly sweetish, with no bitterness, pricking or coating sensation on oral cavity. The aroma is less intensive and incompatible with the above two degustational properties. It belongs to the group of medium strong tobaccos. Combustibility is good to very good, with occurrence of slight flaking. Ash compactness is good and the color of the ash is whitish gray.

Code 4 (P-66-9/7) - raw material with insignificant irritation. Pricking on the tongue and scratching of the throat is more pronounced than in Codes 1 and 2. The taste is mild, but slightly less pleasant. The aroma is defined as oriental, but less pronounced in comparison to Codes 1 and 2. It belongs to the group of medium strong tobaccos, with good compactness of ashes, where slight flaking is noticed. The color is grayish to white. Combustibility is good, with a burning ring slightly more pronounced than in Codes 1 and 2.

Code 5 (P - 79-94) –insignificant irritation, without scratching or pricking. The taste is pleasant and sweetish, without coating sensation on the oral cavity. It has pronounced aroma, typical for oriental tobaccos. The strength of the raw is medium. Ash compactness and combustability is good, with slightly wider burning ring. The color of the ashes is grayish to white.

Code 6 (Prilep Basma -82) - negligible irritation, no scratcing or pricking. The raw is pleasant for smoking. The aroma is less pronounced, but still typical for tobacco with oriental origin. It belongs to the group of medium strong tobaccos, with more pronounced strength. No resistance to draw is felt during smoking. Combustibility and compactness of ashes are good. Slight flaking can be observed.The color of the ashes is whitish gray to white.

General statement of the Taste panel is that all of the investigated codes (varieties) show good degustational properties, typical for Oriental tobacco. Somewhat better results, however, were obtained with Codes 1 and 2, i.e. the Prilep tobacco varieties P - 23 and P -12 -2/1, while poorer smoking characteristics were recorded in the Prilep variety NS-72.

CONCLUSIONS

Based on two-year investigations of degustational properties with six varieties of tobacco type Prilep, the following conclusions can be drawn:

• The highest number of points were given to the check P -23 (73.34), i.e. it was evaluated as the best variety with regard to degustational properties, and the lowest number of points were given to variety NS-72 (68,69).

• A general statement of the Taste panel is that all tobacco varieties included in the investigation have good degustational properties, typical for tobacco of oriental origin, but varieties Prilep P-23 and P 12-2/1 should be especially emphasized.

• The investigated varieties of tobacco type Prilep can be successfully used in mixtures for production of the highest quality cigarette brands in the world.

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