

PROPERTIES OF NEW VARIETIES AND LINES BURLEY TOBACCO INVESTIGATION ON CONSUMABLES

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Abstract

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Consistently applied policy of the European Commission and implemented reforms affected dramatically the cultivated areas and the amount of raw tobacco, including and group Burley, both in EU and in Bulgaria. In Bulgaria there is a mismatch between demand and supply of preferred varieties of tobacco, which requires the creation of new varieties of Burley. Main criterion in assessing the quality of tobacco is the result of tasting assessment. The aim of the research is to establish whether created new varieties and lines Burley tobacco have desired and sought after features such as raw material in the manufacture of tobacco products. Based on standardized methods for analysis and processing of the results it is found that the new variety Burley 1344 and Line 1354 excel at consumable properties using standards Burley Pliska 2002.

Key words: tobacco, Burley tobacco, smoking properties, new varieties

Introduction

Tobacco production in the European Union represents four percent of world production, with a decreasing trend (Eurostat). Between Member States of the Community, the largest producer is Italy, followed by Bulgaria, Poland and Spain (European Commission - DGAGRI/C3). Consistently applied policy of the European Commission and implemented reforms affected dramatically the cultivated areas and the amount of raw tobacco in the country, including and variety group Burley (Contract card n° 30-CE-0197396/00-06). Meanwhile, Bulgaria has an established name in the international market as a traditional producer of tobacco (Bozukov, 2012, 2012; Bozukov, 2013). On the one hand, continuing restrictions provoked and stimulated research, including and selection. On the other, there is a certain imbalance between demand and supply of tobacco varieties that are desired by both producers and consumers. This requires the creation of new varieties of burley tobacco market with estimated production and consumable features (Dyulgerski, 2011).

Tobacco is a wide range of applications, but most often grown as raw material for tobacco products (Bozukov, 2012; Bozukov et al., 2012). They in turn are consumption, ie taste products. Despite the diversity of his (snuff, chewing and

smoking) highest share among them take the smoking article. Based on studies in the middle of the last century (Tanchev et al., 1978), it is found that the taste products, sensory parameters are critical and have a weight percent - 60. Follow physicochemical parameters, with about 30 weight percent and the third etc. "Complementary" with a weight up to 10 percent. For these reasons, the main criterion for evaluation of tobacco is tasting. Tasting evaluation is based both for research and for the production and control activities.

The chemical composition is different for different types of tobacco. It has been shown that the smoking characteristics of tobacco depend primarily upon the ratio of the different groups of substances rather than absolute content (Ghiuselev, 1983). The formation of the composition will depend on many factors, including the climatic and agronomic (Bozhinova et al., 2002; Pekuslu et al., 2002; Zaprianova, 2005; Bozhinova and Dyulgerski, 2006; Zaprianova, 2006, 2006; Bozhinova, 2010; Bozhinova and Dyulgerski, 2010). Many authors believe that due to atypical environment for growing in the country (relative humidity and temperature) Burley tobacco does not reveal the qualities and does not meet the requirements of the tobacco industry in the smoking properties and chemical composition (Drachev, 1994; Popova et al., 2003; Popova et al., 2006).

The aim of the research is to determine whether the newly created Burley tobacco varieties and lines have desirable and sought-after features such as raw material in the manufacture of tobacco products.

Material and Methods

Studied are a new variety Burley 1344 and Line 1354, created at the of Tobacco and Tobacco Products Institute (TTPI), Markovo, Plovdiv. Tobacco conditionally marked by a variety Burley 1344 as № 1 and line with Burley 1354 as № 2. For the control - K, we serve standard Burley Pliska 2002 enshrined in the Variety List of the Bulgaria. The database was established for a period of three years (2009 - 2011) by tobaccos grown in the experimental field of TTPI under the same conditions (agricultural activities, drying, fermentation). Samples were tested on basic physical parameters - nicotine, sugars, total nitrogen and ash, and the smoking properties. Smoking initiation of the samples was carried out according to BDS 8389-85 of laboratory-made cigarettes without filter and all other conditions: moisture 12.5; mass of cigarettes – 0.970 g and air permeability of cigarette paper - 43 CU. For processing and analysis of results are used standardized methods.

Results and Discussion

Burley tobacco grown in the country is characterized by the content of basic chemicals, as follows: nicotine maximum 2.5, ammonia - about 1.0; sugars - to 3.0 and ashes - to 17. Burley is generally high nicotine tobacco loose structure and high filling power. Unprotonated contains nicotine, which results in spasm (sharpness) high rate and nitrogen compounds. The specific chemical composition determines the peculiarities of the smoking properties. Paradoxically, the unpleasant aroma of Burley tobacco, the high degree of physiological strength and sharpness, even bitter taste manifested determine its level of quality.

The main indicators of the chemical composition of the samples is displayed on figures with 1, 2 and 3 and K is chemical composition of control - Burley Pliska 2002, № 1 of the variety Burley 1344 and № 2 - Burley line 1354.

From the results it is apparent that the reference period for the control was characterized by unacceptable levels of indicators of Burley tobacco. It is the lower values for the nicotine, which is in the range from 2.3 to a maximum value 3.00. The lowest are values for total nitrogen - from 2.86 to 3.9. At the same time, report the highest values for sugars.

In general, the chemical composition of the control during the research covers the classical notions of Burley tobacco grown in the country (Figure 1).

Sample №1 is with the best performance. Nicotine reaches 3.48 in 2010, a slight decline in 2011. Also shows higher values for total nitrogen. Sugars are low. Sample № 2 is in lesser degree retreat from № 1. Nicotine and total nitrogen are distinctly higher values than achieved under control (Figures 2 and 3).

All three studied tobacco report low rates of indicators for 2009. This can be explained by the adverse weather conditions during the crop year.

The results of the tasting evaluation are displayed in Figures 3, 4 and 5, where 3 is the user's control over the study period, 4 is a new variety Burley 1344 and 5 Line Burley 1354.

When the control is clearly atypical and balanced smoking tobacco Burley in 2009 this trend continued in 2010. The results were confirmed in 2011 - the control is unusually smooth taste of tobacco Burley type. Untypical for the type of event is burning sensation. Taxing is not clean (occurrence of aftertaste). Physiological force is insufficient to Burley. Lacking sharpness. Basic perceptions in the aroma reach below average degree. Lacking the necessary purity and density. Expression or typicality of the type of tobacco is also a degree of manifestation below average. The taste is unusually balanced (Figure 4)

In the new variety Burley 1344 appears bitterness in lesser degree, harassment is elevated, physiological force is above average extent by the presence of sharpness. In 2009, the sample superior control on main elements of evaluation - aroma, taste and force. In 2010, this trend continued. In 2011, the new variety Burley 1344 is significantly different and superior control to the typicality of the taste and aroma of complex of tobacco Burley. The fragrance is characterized by the typical nature, purity and density. Taste prevailed irritation and completeness. Taxation is clean. Lacking burning in above average degree of force physiological manifestation is a distinct sharpness (Figure 5).

Line 1354 is similar in character to the new variety Burley 1344. In less to its inferior elements of perception, but is typically reveals the smoking properties. The sample excels in the control by taste-aroma complex. Here, the worst score is 2009, but retained the character of the type of tobacco. The smoking properties of the line are revealed in 2010. In 2011, the results are best. Characterized is by typical and clean, solid and pleasant to type Burley flavor. The taste is dominated irritation and completeness. Lacking burning. Taxation is clean. Physiological force reaches above average degree of manifestation. There is sharpness (Figure 6).

Result of the research shows that 2009 is not favorable for the formation of the utility properties of Burley tobacco. Control - Burley Pliska 2002 does not reveal typical of Burley tobacco smoking and properties. New variety Burley 1344 and

Line 1354 are much superior line utility properties of the control. Moreover, they exhibit the stability of expression over time. However, that Line 1354 less to retreat from the new

variety Burley 1344, both variants fully meets the requirements of industry in chemical composition and especially the smoking properties.

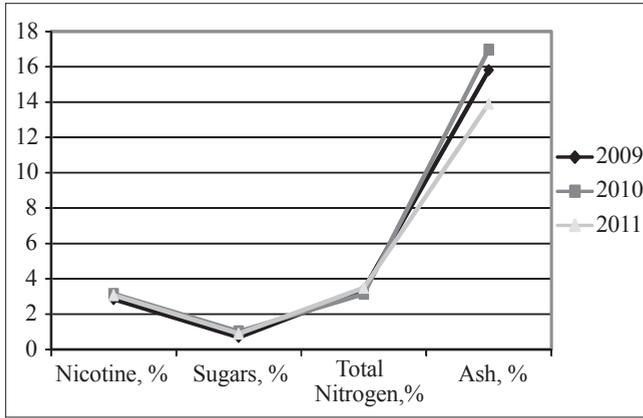


Fig. 1. Chemical composition – control

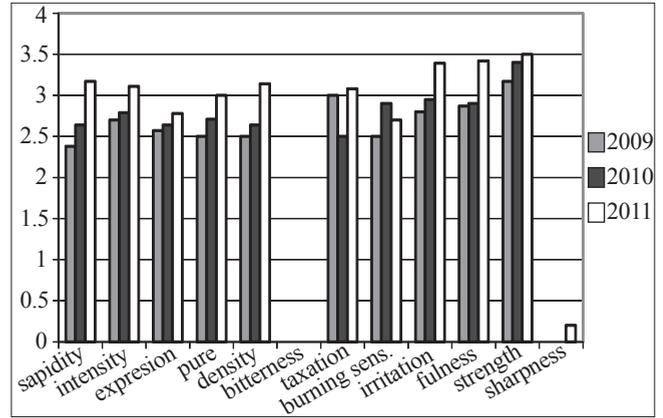


Fig. 4. Tasting evolution – control

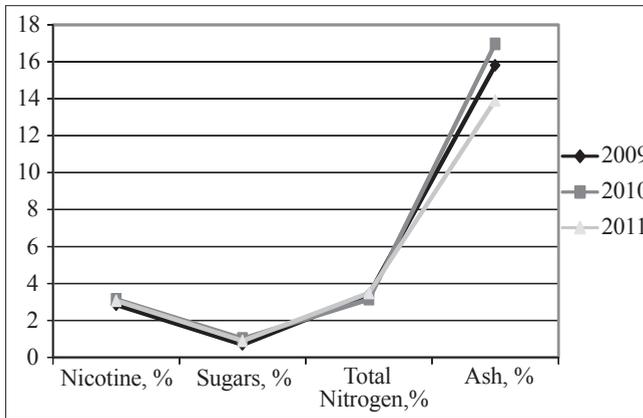


Fig. 2. Chemical composition – new varieties Burley 1344

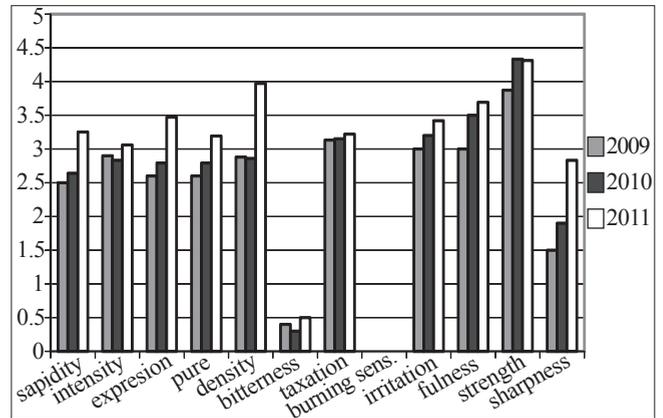


Fig. 5. Tasting evolution – new variety Burley 1344

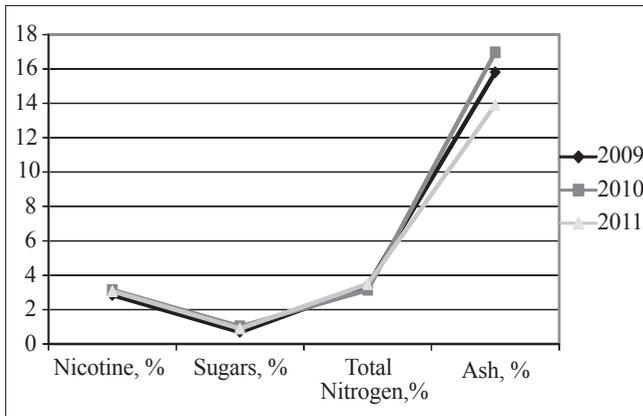


Fig. 3. Chemical composition – Line 1354

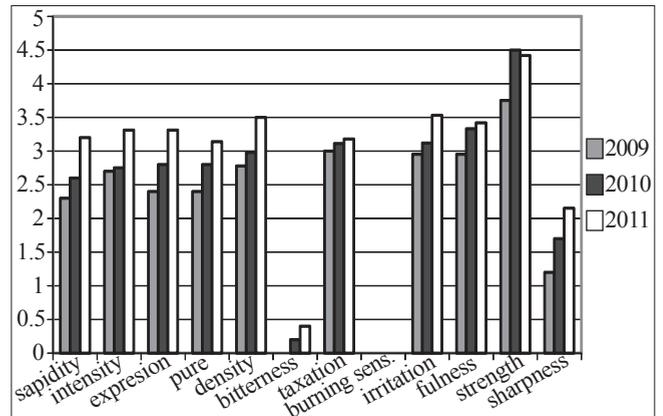


Fig. 6. Tasting evolution – Line 1354

Conclusion

2009 was not favorable for the formation of the utility properties of Burley tobacco. The control does not reveal typical of Burley tobacco smoking and properties. New variety Burley 1344 and Line 1354 are much superior line utility properties of control by showing the stability of expression over time. However, that Line in 1354 less to retreat from the new variety Burley 1344, both variants fully meets the requirements of the industry in the smoking properties.

Consistently applied restrictions to tobacco largely regulate supply and demand of raw materials with certain characteristics. The selection is limitless possibilities in this respect, and selection in TTPI it has proven repeatedly. To keep the country, as a traditional world-renowned producer of tobacco, is necessary, new look and rearrangements of priorities in research and selection and introduction of new varieties tobacco.

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