

SOME CHARACTERISTICS OF PELAGONEC - THE NEWLY CREATED VARIETY OF BURLEY TOBACCO

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ABSTRACT

Burley variety Pelagonec CMS F1 was approved by the State Commission of the Ministry of Agriculture in 2010. Its stable and high yields and typical Burley characteristics make this variety attractive both for the farmers and for manufacturers. In the present conditions, it can play a role of initial variety for restarting the production of Burley tobacco in R. Macedonia, but it can be also interesting for our neighboring countries and wider.

Key words: burley tobacco, production of burley

НЕКОИ КАРАКТЕРИСТИКИ НА НОВОСОЗДАДЕНАТА БЕРЛЕЈСКА СОРТА ПЕЛАГОНЕЦ

Берлејската сорта Пелагонец ЦМС F₁ е призната од страна на Државната сортна комисија во 2010 год. Стабилните и добри приноси, проследени со типични берлејски својства на суровината, ја прават оваа сорта интересна како за производителите така и за фабрикантите. Во услови на мирување на производството на типот берлеј во Р. Македонија, таа може да одигра улога на иницијална сорта со која би се рестартирало производството, со можности да биде интересна за нашето опкружување и пошироко.

Клучни зборови: тутун берлеј, производство на берлеј

INTRODUCTION

As a result of the intensive selection activity, a great number of varieties from the types Prilep, Yaka, Djebel, Otlia, Virginia and Burley have been created in Tobacco Institute-Prilep. Up to this moment four Burley varieties in CMS form (B-96/85, Burley 1, B-2/93 and Pelagonec) and one in fertile form (Burley Pel BB295) have been created and recognized. Each of them has its own specifications and corresponds to the taste and requirements of manufacturers and consumers

in the time of its creation.

Male-sterile variety Pelagonec was created by intervariety hybridization after two-year investigations and in 2010 it was approved by the State Commission of the Ministry of Agriculture and registered in the List of Macedonian newly created agricultural plants (Official Gazette of R. Macedonia, July 16, 2010).

MATERIAL AND METHODS

In preparation of this paper we used materials obtained from comparative and productional trials, application forms and Decision for approval of the variety. Physical and

chemical analysis were made in the accredited laboratories of Tobacco Institute - Prilep and tasting properties were determined by the Tasting Panel of Tobacco Combine - Prilep.

RESULTS AND DISCUSSION

Results and discussions will be presented through some productional-morphological, bio-technological, chemical and tasting characteristics of the variety.

Seedling production- Having in mind the climate conditions of this area, primarily the temperature, the best period for sowing this variety is between 10 and 15 March. Depending on seed quality (total germination and energy), the rate of sowing should be 2-3 g/10 m², if seedlings are produced under polyethylene. When seedbeds are not covered with polyethylene, sowing should start about 25 March, but the amount of seed should be increased for about 50%. In the case of application of pelleted seed and float system, the amount of seed needed for transplanting is dramatically reduced. Depending on temperatures in the period of seedling production and applied cultural practices (nutrition, weeding, irrigation, protection), seedlings covered with polyethylene are ready for transplanting in 45-65 days. In uncovered seedbeds, this period is prolonged for 10-15 days.

Time of transplanting and spacing - In our agro-ecological conditions, transplanting should start about 10-15 May and should be finished in the shortest possible time, in order to avoid differences in stalk size during tobacco

growth and development in field, which could later cause problems in harvest (uneven ripening of leaves from the same belt).

So far, in our comparative investigations, transplanting was made with 90 x 50 cm spacing, i.e. each stalk obtained 0.45 m² nutrient area. In this way, about 22 000 stalks were needed for 1 ha. Having in mind the genetic potential of the variety, however, and the increased yield due to higher leaf size and number, the recommended spacing can be even higher, in order to achieve easier soil treatment between rows, better protection and harvest and to increase the competition among stalks in utilization of nutrients, water and light.

Morphological properties - The hybrid male-sterile variety Pelagonec has a conical habitus and well developed root system. Depending on soil fertility and applied cultural practices (fertilization, number of irrigations etc.), stalk height achieves 180 - 220 cm and more. The number of leaves averages about 34. Depending on their position on the stalk, leaves can be 48 - 75 cm long and 30 - 40 cm wide. In the stage of technical maturity, leaf color is green-yellowish and the midrib and nerves are whitish. The stem is considerably firm and resists to stronger winds, due to its thickness of 5 cm at

the soil level and 4 cm in the middle. Depending on its age, the color of the stem varies from yellow-greenish to whitish.

The flower is 4-5 cm long, without anthers, with pale pink lobes and it does not yield seed. Flowering stage begins in about 65 and ends up in 85 days after transplanting.

Biological properties - For successful

production of the Pelagonec variety, the following requirements should be met:

Soils should be fertile, deep, well aerated, fertilized with NPK in amounts determined according to the previous analyses of agrochemical composition of the soil. Additional nutrition with KAN is well accepted by this variety.



Photo 1 - Pelagonec CMS F1



Photo 2 - Leaves from the middle belt



Photo 3 - Flowers of Pelagonec CMS F1

Temperature of 24-27°C, followed by a higher relative air humidity (over 70%), has a favorable effect on tobacco growth in field. In dry periods, especially when yield and quality of tobacco are formed (July and August), additional and abundant irrigations are needed, preferably after each priming.

This variety shows certain tolerance to some economically important diseases (PTA,

TMV, PVY etc.).

Harvest and curing - Harvest can be performed by insertions (leaf by leaf) and whole-plant-picking (reaping of the stalks) and the period from transplanting to the end of priming of top leaves is 115-120 days (moderately long growth period)

In both ways of harvest, curing is performed in curing barns specially designed for

Burley tobacco (air-curing), and the technology of curing is as usual for all Burley varieties.

Yield and quality - In tobacco producing region of Prilep, the Pelagonec variety yields 3800 kg to 4350 kg. In a more favorable regions where suitable cultural practices are applied, the yields will be certainly higher. Of the total yield, the percentage of high classes is over 70%

(45% - I grade, 20% - II grade, 8% - III grade).

Technological properties - In conditions of proper harvest and curing, the color of dry leaves in lower primings is lighter, and in all other primings it is brown. In average, the main nerve content in the middle belt leaf is 29% to 31.3 %. Lamina thickness in middle belts is about 83 μm , and substantiality about 36 g/m².



Photo 4-Pelagonec CMS F, lower primings



Photo 5 - Pelagonec CMS F1, middle primings



Photo 6 - Pelagonec CMS F1, upper primings

Chemical properties - Depending on soil and climate conditions during the growth period, cultural practices applied and the methods of harvest and curing, chemical composition of the middle belt leaves in this variety is as follows: nicotine 2.30% and over, soluble sugars below 1%, proteins 7-8%, Total N 3.0-3.40% and ashes

about 18%.

Tasting properties- According to the Report of the Tasting Panel of AD Tutunski Kombinat - Prilep dated 4.06.2008, all characteristics of the variety Pelagonec produced in Tobacco Institute-Prilep in 2007 are typical for Burley tobacco.

CONCLUSIONS

- According to its production-morphological, bio-technological, chemical and tasting characteristics, variety Pelagonec CMS F1 offers a good guaranty for successful restart of Burley tobacco production in the Republic of

Macedonia.

- This variety can be also attractive and interesting for tobacco producers from our neighboring countries and wider.

REFERENCE

1. Application for approval of new varieties to the Ministry of Agriculture, Forestry and Water Economy dated 21.03.2007, Scientific Tobacco Institute-Prilep.
2. Reports from laboratories for technological and chemical characteristics of the variety Pelagonec CMS F1, Tobacco Institute-Prilep.
3. Report on the tasting qualities of the variety Pelagonec CMS F1 from Tobacco Combinat -Prilep, dated 4.06.2008.
4. National list of newly created agricultural plants - Official Gazette of R. Macedonia from 11.07.2010
5. Results of several-years field trials in which variety Pelagonec CMS F1 was included.
6. Decision of the Ministry of Agriculture, Forestry and Water Economy of R. Macedonia from 31.03.2010 for approval of the newly created variety Pelagonec.