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NEW GENOTYPES OF THE SPECIES *Thymus* X *Citriodorus* (PERS.) SCHREB. – PRODUCTION AND QUALITY

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The article presents the results of CCC testing of a new cultivar of lemon thyme – Citronel-pink of the species *Thymus x citriodorus* (Pers.) Schreb. as pharmaceutical remedy, food and melliferous plant, obtained by clonal selection, for the purpose of promoting and implementing it in industrial production.

Keywords: *thymus, plant height, production, essential oil, herba, citral*

Thymus x citriodorus (Pers.) Schreb. is becoming more and more popular, being in great demand, not only as an ornamental and honey plant [1, 2] or a medicinal remedy with unique healing properties [3], but also as a valuable aromatic-spice herb used in the mixture known as "Herbs de Provence" in Europe, Turkey [4] and Iran [5]. The spasmolytic effect [6] and antimicrobial properties, which are due to terpenoids and flavonoids [7], have been confirmed scientifically. The antioxidant activity is due to phenols [8] and to the content of rosmarinic acid. The essential oil has natural preservative properties, important in cooking, when preparing canned foods, marinades or desserts to extend the shelf life of products [9]. Lemon thyme – has many medicinal, aromatic and ornamental qualities, which motivated us to breed it and identify new forms, better adapted to the weather conditions of our country, with a wider range of usage than the spice-aromatic one.

Materials and Method. As initial research material, we used three cultivars of *Thymus vulgaris* var. *citriodora* (Pers.) Schreb., which were procured at an exhibition with sale of planting material and a form of thyme (spontaneous hybrid between *Thymus pulegioides* L. x *T. vulgaris* L.). As a result of clonal selection, several forms were obtained, from which two forms with the highest productivity of raw material and essential oil were selected. The new forms are much more resistant to winter conditions, excluding the need to protect (cover) the plants during the cold period of the year, and are less vulnerable to the long deficiency of precipitation, which is increasingly common in recent years. Cultivated thyme, being a very polymorphic species, should, in our opinion, be propagated by vegetative methods to maintain the obtained characteristics.

Therefore, it was propagated vegetatively. The new forms were provisionally named: C.FI – the control and C.FN – the new cultivar permanently named Citronel-pink.

Results. The CCC testing of the obtained constant forms allowed us to observe that the plants of the tested cultivars are small 21-24 - 25.5 cm, the new cultivar growing slightly larger, depending on the seasonal weather conditions. The diameter of the bush is increasing from year to year, by increasing the number of branches per bush. The duration of the growing season until harvesting was from 85 to 111 days, varying in different years, and was 91 days on average for both cultivars, which were harvested simultaneously.

Table 1. Biomorphological parameters of the *Tyhmus x citriodorus* cultivars, 2019-2021 (average values)

Cultivar	Parameter	Plant height, cm	Bush diameter cm	Number of branches per plant	Inflorescence length, mm	Days until harvesting
C.FI, control	X	24.0	45.3	217.3	2.2	91
	Sx	1.12	3.12	5.8	1.0	-
C.FN, Citronel-pink	X	26.4	64.8	447.3	2.4	91
	Sx	1.45	3.08	6.7	1.1	-

The average productivity of fresh raw material was slightly higher in the new cultivar by 0.99 kg, which was statistically confirmed. When the plants were in full bloom, the essential oil content was assessed, which was 0.285% in the control and 0.32% in the new cultivar, recalculated per hectare, it would be equal to 7.24 kg and 10.3 kg/ha, respectively.

Table 2. The productivity indices of *Tyhmus x citriodorus* cultivars, 2019-2021 (average values)

Tested cultivars	Essential oil content,%		Raw material productivity		
	raw material	dry matter	fresh, t/ha	dry, t/ha	essential oil, kg/ha
C.FI, control	0.303	1.150	3.381	1.060	10.24
C.FN, Citronel-pink	0.326	1.247	4.264	1.344	13.9
DL_{05}	-	-	0.61	-	2.08

It was statistically confirmed that the average productivity of fresh raw material was slightly higher in the new cultivar by 0.88 kg. When the plants were in full bloom, the essential oil content was assessed, which was 0.303 % in the control and

0.326% in the new cultivar, recalculated per hectare, it would be equal to 10.24 kg in the control and 13.9 kg/ha in the new cultivar. For the implementation of the new cultivar, the Patent application no. 580 has been submitted to the State *Agency* on Intellectual Property (AGEPI) and the Application for registration no. 2365085 – to the State *Commission* for *Variety Testing (*CSTSP*).*

Conclusions. The new cultivar Citronel-pink of *Thymus x citriodorus* can achieve high productivity of raw material to be used for fresh consumption, essential oil extraction, or as pharmaceutical herb in the production of herbal teas and pharmaceutical extracts.

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