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NUTRIENT VALUE AND STABILITY OF THE BIOCHEMICAL INDICES FOR THE STRAWBERRY SOFT FRUITS GROWN IN CONDITIONS OF NORTHERN FOREST-STEPPE UKRAINE

The strawberry soft fruits have medicinal, radio-protective properties due to presence in them of the biologically valuable active compounds: phenolic, pectinic substances and ascorbic acid. The problem of the nutrient and biological value of agricultural production is very actual in the current environmental conditions. That is why to establish the industrial plantations it is reasonable to choose the cultivars which fruits are distinguished by the early fruit appearance, high yield, suitability for the processing and which show high taste and indices for components of biochemical composition and their stability.

The indices of biochemical composition are very responsive to the changes in conditions of cultivation (weather and agricultural conditions). The content and major berries' chemical composition component ratio were documented to exhibit relations of varying intensity which more result from cultivar peculiarities and environmental conditions than from agricultural methods for their cultivation.

Studied fruits of the strawberry cultivars show variation of the dry soluble substances (DSS) within the range from 5.1 to 11.8 per cent. Cultivar 'Yasna' shown the highest stability by the DSS, while cultivars 'Koralova 100', 'Istochnik' and 'Romashka Festyval'na' somewhat yielded to it by this index. The highest DSS content for the years of investigations was found in the strawberry soft

fruits of 'Koralova 100', 'Red Gontlad', 'Prysvyata'. The strawberry soft fruits of the studied cultivars contain between 6.9 and 7.97 per cent of sugar. High stability of this index was pointed out for cultivars 'Koralova 100', 'Yasna', 'Red Gontlad'.

The content of the phenolic compounds in the soft fruits of the cultivars varied from 240.4 mg/100 g to 357.4 mg/100 g. Cultivars 'Istochnik', 'Red Gontlad', 'Koralova 100', 'Prysvyata' showed higher content. To most stable cultivars are showing average stability may be included cultivars 'Yasna', 'Prysvyata', 'Rusanivka'.

The content of the pectinic substances in the strawberry soft fruits of the cultivars varied within the range of 0.69 per cent. Their most proportion was found in the cultivars 'Red Gontlad', 'Koralova 100', 'Prysvyata'. Cultivars 'Tenira' and 'Yasna' showed high stability of this index, the rest of the cultivars shown lesser stability.

Therefore, berries of cultivars 'Red Gontlad', 'Koralova 100', 'Prysvyata' and 'Istochnik' were most replete by the indices of biochemical composition. Cultivars 'Yasna', 'Tenira', 'Rusanivka' were more stable while 'Istochnik' and 'Romashka Festyval'na' were significantly lesser stable. Analysis of variance shown that the strawberry's soft fruit biochemical composition grown in conditions of Northern Forest-Steppe depended on a greater extent on the climatic conditions of the year, than on the cultivar peculiarities.

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NUTRIENT VALUE OF THE COMMON AND NOVEL MARROW SQUASH FRUITS, GROWN IN CONDITIONS OF THE NORTHERN FOREST-STEPPE UKRAINE

Marrow squash fruits provide the population by the valuable easily digestible substances during summer season. In the current market conditions it is reasonable to pick out not only highly

productive but also the cultivars are showing high content of the biochemical composition components in the fruits to be responsible for the nutrient and biological value. The aim of our studies was to se-

lect most valuable cultivars of marrow squash of the national and foreign selection by the biochemical composition.

As a result of the studies there were determined and compared series of the biochemical indices for the marrow squash fruits from 20 cultivars: 'Zuboda', 'Zrazok 45-48', 'Zinggreenzucini', 'ZonggreenFroulina', 'Zucini', 'Londbuch', 'Amcobelamarlon', 'CMW-2200', 'Agnarins', 'Italiano', 'Sebra', 'Chada', 'Marron', 'Zrazok 3072', 'Iskander', 'Zolotalykhordak', 'Kabachokspageti', 'Fatro', 'Kruktnecciribrry', 'Dunavarssati', 'Zuccinastrata', 'Whitebushharb', 'Skvorushka', 'Aragripena', 'KabachzuciniUSA', 'Senatahybsor', 'Bondi', 'Rpaneba', 'Aqnilone', 'Hygreen', 'Odes'ki', 'Tsukini'. Marrow squash fruits were analyzed by the indices as follows: dry compounds, dry soluble substances, titrated acidity, ascorbic acid, sugars: inverted and sucrose.

High content of dry substances showed specimens (DS content – 5 per cent), 'Zrazok 45-48',

'Subota' and 'CMW-200'.

Sugars include sucrose and monosugars thus totaling from 2.7 to 3.0 per cent and more (in the cultivars 'Long green Trailina', 'Iskander' etc.) Titrated acid content from the marrow squash fruits varied within the range 0.318-0.384 per cent.

Marrow squash ascorbic acid levels significantly varied with the cultivar. Minimal content shown 'Marron' cultivar (4.8 mg%), while the maximal one – 'Zucchini Striata' (18.92 mg%). The bulk of marrow squashes contained 811 mg%.

All-round estimation of the marrow squash fruits from the various cultivars showed that among the 20 cultivars examined most valuable by the biochemical composition were 'Zong green Freulina', 'Odes'ki', 'Aragripena', 'Bondi', 'Kruktnecciribrry', 'Zuboda', 'Dunavarssati', 'Zuccina striata', while the least valuable were cultivars: 'Marron', 'Lond buch', 'XMW-2200', 'Hy green', 'Chada'.

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NUTRIENT CONTENT OF FONUGREEK (*TRIGONELLA FOENUMGRAECUM* L.) AFTER HIGHER MAGNESIUM NUTRIENT TREATMENT

Fenugreek (*Trigonella foenum-graecum* L.) belonging to the legumes (*Fabaceae*) family is an annual plant. Mediterranean, native to the Mediterranean coast. It is cultivated as a spring-sown plant in temperate climate countries. A multi-use plant that is used as an herb, spice and fodder plant. *T. foenum-graecum* crop has several advantages. Fenugreek has high protein content and is well suited for feeding domestic and wild animals.

In the experiment, different nutrient supply treatments were set up, which aims to determine how the contents of the stem and leaf of the fenugreek change.

The open-field experiment was set up at the beginning of April 2018 in John von Neumann University, Faculty of Horticulture and Rural Development, Demonstration Garden. The fertilizer used in the research: Novatec premium (15 N - 3 P₂O₅ - 20 K₂O - 2 MgO). The treatments were: 1 treatment = 150 kg/ha Magnesium; 2 treatments = 300 kg/ha Magnesium; 3 treatments = 450 kg/ha Magnesium. The treatments were carried out on plots 50-50 m².

In the course of the experiment, the nutrient element concentrations nitrogen, magnesium, calcium, potassium and phosphorus were determined in the stems and leaves of fenugreek. The increasing magnesium concentration (150-, 300- and 450 kg/ha) in the nutrient treatment caused the decrease of nitrogen content of dry matter in the stems and leaves from 3.50 m/m% to 2.91 m/m%. The concentration of calcium increased from 2.75 m/m% to 3.44 m/m%. The concentration of potassium decreased from 1.15 m/m% to 0.82 m/m%. The concentration of magnesium increased from 0.404 m/m% to 0.466 m/m% (300 kg/ha treatment), but decreased to 0.424 m/m% by treatment at 450 kg/ha. The concentration of phosphorus increased from 0.415 m/m% to 0.53 m/m% (300 kg/ha treatment), but decreased to 0.31 m/m% by treatment at 450 kg/ha.

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