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STUDYING THE INFLUENCE OF AGRICULTURAL FACTORS ON THE QUALITY OF THE FRUIT OF PEACH PLANTS

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Abstract

To ensure compliance of quality and safety indicators of agricultural products in the country with international standards, the Cabinet of Ministers adopted Resolution No.729 of 18.11.2020 " Approval of certain normative-legal documents on the safety of organic products and raw materials, as well as organic and mineral fertilizers". Accordingly, the cultivation of organic pure fruits and vegetables is now relevant. Also, today, ensuring food security in maintaining a healthy lifestyle remains dependent on the composition of fruits and vegetables. It is known that the amount of nitrate in fruits and vegetables exceeds the acceptable rate due to the excessive use of mineral fertilizers to increase the productivity of agricultural products. Therefore, using the methods recommended by the Uzbek Scientific Research Institute of Horticulture, Viticulture and Enology, using green manure was carried out in a way that provides the normal content of nitrate in fruits and vegetables. According to the data obtained in the study, the amount of nitrate in the fruit fed with mineral fertilizers was 80.8 mg / kg (60 mg / kg according to Gov.Standart), and in case of biological fertilizers this figure was 50.9 mg / kg. As a result, the nitrate content of the fruit remains normal, as well as mineral and organic contamination of the soil, which is currently relevant. In conclusion, the use of biological (green manures) fertilizers as an alternative to mineral fertilizers in the prevention of nitrate poisoning is generally acceptable.

Keywords: peach fruit, is to develop a technological system of cultivation of environmentally friendly, organic products in terms of hygiene, as well as to protect the soil from mineral contamination.

Relevance

Improving food security is important in our country to improve the health of the population. Excessive use of nitrogen fertilizers to increase the productivity of agricultural products affects the quality of food, in particular, it is worth noting that the excess of nitrate in fruits and vegetables has a negative impact on human health. Also, the Action Strategy for the further development of the Republic of Uzbekistan for 2017-2021 identifies "... further strengthening of food security of the country, increasing the production of environmentally friendly export-oriented fruit products" as one of the important strategic tasks. The cultivation of safe, organic products is now relevant. In recent years, a number of reforms have been carried out in the country to ensure food security, fully meet the needs of the population in fruit products, their processing and export, and the cultivation of environmentally friendly products. In particular, there are a number of resolutions and decrees on food security in the Republic, including the Decree of the President of the Republic of Uzbekistan dated January 16, 2018 PF 5303 "On measures to further ensure food security of the country." Replenishment with safe, cheap food products ".

The purpose of the study is to develop a technological system for the cultivation of hygienically environmentally friendly, organic products, as well as to protect the soil from mineral pollution.

Research Methods

The experiments were carried out on the basis of methodological manuals and scientific recommendations, such as "Methods of agrochemical analysis of soil and plants" (1979), "Methods of agrochemical analysis of agricultural culture" (1983).
of fruit content is carried out on the basis of the method described in the manual "Methods of biochemical research of plants", edited by AI Ermakova, the amount of nitrate in the fruit Soeks nitrate-tester-2 (2009), the sugar content of the fruit on a refractometer, acidity titration. increased, and the dry matter was carried in the Bertrand method. The amount of humus in the tillage layer I.V.Tyurin, gross nitrogen, phosphorus, potassium content I.M.Maltsev and L.P.Gritsenko, interchangeable potassium flame photometer, nitrate nitrogen in the methods of Granvald-Lyaju, as well as mobile phosphorus B.P. Made in the style of Machigin .

Research Results

The experiment was conducted in 2014-2016 in the foothills of the Zarafshan oasis. Horticulture, viticulture and winemaking named after M. Mirzaev was carried out in

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the peach orchard at the Samarkand Experimental Station. In the experiment, mineral fertilizers and biological (siderate) fertilizers were used. Their gross and mobile amounts in the soil composition were also analyzed.

Table 1 The amount of nutrients in the soil after mineral and biological fertilizers in the experimental garden

V ariants	Humus %	Gross%			Motion form, mg / kg		
		N	P	K	N-NO_3	P_2O_5	K_2O
Before the experiment	0.80	0.08	0.08	1.25	6 , 50	25 , 4	262 , 6
Mineral fertilizers (FON + N_{120})	0.81	0.16	0.10	1.26	8.62	25.9	274.5
Biological fertilizers (siderates)	0.84	0.14	0.13	1.30	7.05	30.3	291.5

In this table, it was found that the humus content before the experiment was 0.80%, while the biological fertilizer options increased to 0.84% over three years. The total nitrogen, phosphorus and potassium content was 0.08% before the experiment and 0.10-0.13% after the experiment, and their mobile forms were found to increase accordingly. In the variant fertilized with mineral fertilizers, rapid absorption of minerals in the soil and rapid accumulation in the fruit was observed. Also, chemical analysis of the composition of the fruit revealed that nitrate accumulated more in the variant fed with mineral fertilizers than in biological fertilizers.

Quality of fruit content is one of the important conditions of export requirements. Fruits, with their healing, aroma and taste, satisfy the human body's need for vitamins. However, due to the excessive use of mineral fertilizers to increase the yield of fruits and vegetables, it also has a negative impact on the amount of nitrate in the fruit.

In the experiment, the nitrate content of the fruit in the biological fertilizer variant was 50.9 mg / kg, while in the mineral fertilized variant the figure was 80.9 mg / kg. The permissible amount of nitrate for the fruits was required to be 60 mg / kg, and 30.0 mg / kg of excess nitrate was found to accumulate in this variant (Fig. 1).

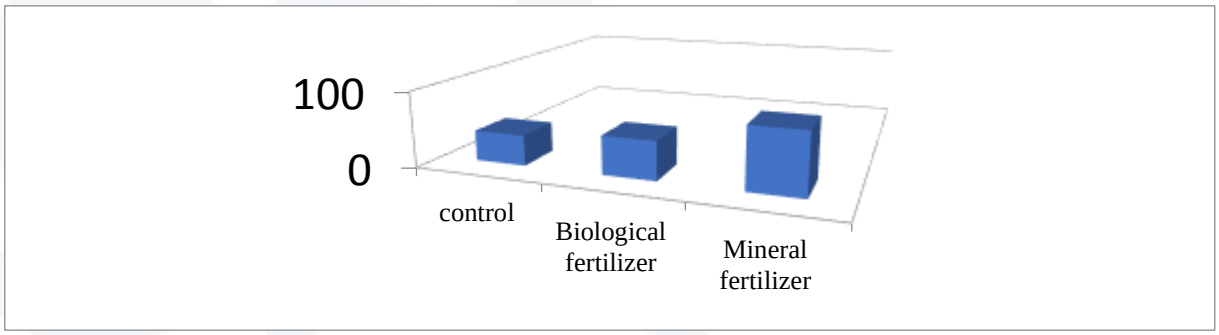

Figure 1 Influence of types of fertilizers on the amount of nitrate in peaches

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At the moment Food safety has been a major concern in global health, and to date, nitrate poisoning has been observed due to the high content of nitrate in fruits and vegetables. The daily intake of nitrates in the human body should not exceed 600 mg. 222 mg per body weight of 60 kg on average is the daily nitrate norm. The above data have been found to affect not only the nitrate itself but also the sugar and acidity of the fruit, which is a regulating factor.

Experiments have shown that mineral fertilizers affect not only the amount of nitrate in the fruit, but also the sugar content, acidity and dry matter of the fruit (Figure 2).

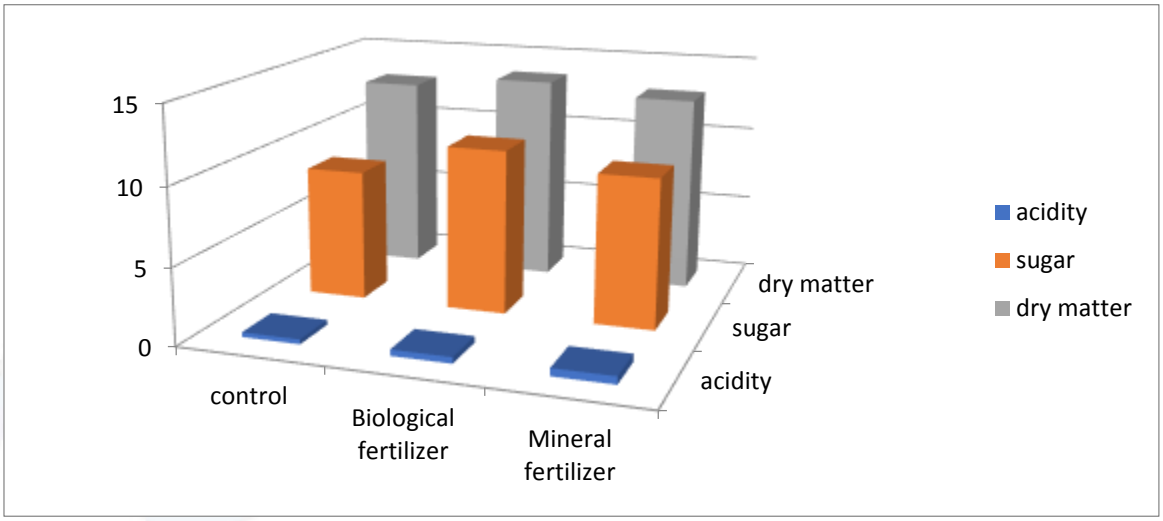

Figure 2 Influence of fertilizer types on chemical characteristics of peach fruit

As shown in Figure 2, the sugar content in the experiment was 8.65% in the control (without fertilizers) variant, 10.80% in the biological fertilizer (siderates) variant, and the acidity was 0.30% in the control variant, and 0.40% mineral in the biological fertilizer variant. in the fertilizer variant, it was found to be 0.51%, which is 0.21% higher than the control. It was also found experimentally that the dry matter content was 12.85% in the control variant, which is 0.9 times higher in the biological fertilizer variant than in the 13.6% mineral fertilizer variant.

Conclusion

The growing population of the world is also leading to an increase in demand for food. Quality food is a guarantee of health. Based on the above data, it can be concluded that consumption without analyzing the amount of nitrate in fruits and vegetables is dangerous for our health. And not exceeding the daily norm guarantees our health. The presence of sugar, acids and vitamins and other biologically active substances in fruits and vegetables consumed daily means quality nutrition. Regulating the daily intake of nitrates is one of the important factors that everyone should follow.

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