

Trace element composition of apples for the production of apple sbitney and ciders

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The trace elements composition of apples used for futher production of apple juices
and ciders

RESUME

The study of trace element's composition of apples (harvest 2014), collected in the Republic of Bashkortostan, for subsequent production of apple juices and ciders is presented.

Keywords: trace elements, iron, cobalt, manganese, copper, zinc, apple varieties: Uralskoye nalivnoye, Bulak, Seyanetc Titovki, Bashkir emerald.

SUMMARY

The paper analyzes the microelement composition of apples harvested in 2014, harvested in the Republic of Bashkortostan for the subsequent production of apple sbitney and ciders.

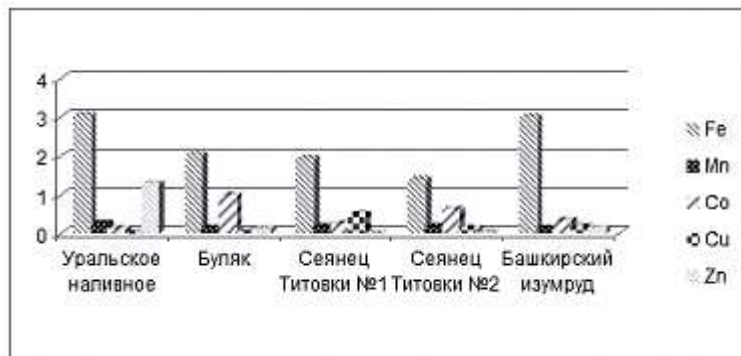
Key words: trace elements, iron, cobalt, manganese, copper, zinc, apple varieties: Ural bulk, Bulyak, Titovka seedling, Bashkir emerald.

Earlier, varietal selection of apples for the production of apple sbitney and ciders in the territory of the Republic of Bashkortostan was carried out. Optimal for these purposes were such apple varieties as Uralskoe nalivnoe, Bulyak, Seyanets Titovki, Bashkir emerald [1, 2].

The next stage of the research was the study of the microelement composition of the apples of these varieties. It is known that apples are a depot of many vital bioelements, among which trace elements such as iron, cobalt, manganese, copper and zinc occupy a special place. The significance and uniqueness of these elements in human life is obvious and indisputable, since they are part of a large number of enzymes, provide redox reactions, hematopoiesis, normal functioning of individual tissues and organs and the whole organism [3, 4].

Micronutrient-balanced apple drinks such as apple sbitni and ciders are an extremely rich source of these micronutrients.

In this regard, by the method of atomic absorption spectrophotometry in the analytical laboratory of the Research Institute of Agriculture of the Republic of Bashkortostan, the content of iron, cobalt, manganese, copper and zinc in apples of the varieties Ural Nalivnoe, Bulyak, Seianets Titovki, Bashkir emerald of the harvest of 2014 was studied. The research results are shown in Fig. one.



Rice. 1. Trace element composition of apples of various varieties of harvest 2014

It can be seen from the diagram that the maximum amount of iron, manganese and zinc is contained in apples of the Uralskoye nalivnoe variety, while the amount of cobalt and copper in these fruits is minimal. The apples of the Bashkir Emerald variety also demonstrate a high iron content, however, the content of manganese is minimal in the fruits of this variety. The smallest amount of iron is in apples of the Seyanets Titovka variety No. 2. In terms of the maximum content of cobalt, the leading variety is Bulyak, and in terms of the maximum content of copper, the variety Seyanets Titovki No. 1.

Based on the results obtained, it can be concluded that the content of trace elements depends on the varietal composition of apples. That is why the production of apple sbitney and ciders requires an optimal combination of different varieties of apples, not only in terms of taste (sweet, bittersweet, bitter and sour), but also in terms of the content of biologically active substances.

Thus, in the case of apples grown for the production of apple sbitney and ciders, it is assumed that various varieties are used in an integrated manner to obtain drinks with an optimal content, in particular, of microelements. In our case, this is a combination of the Ural Nalivnoe, Bulyak, Seyanets Titovka No. 1, and Bashkir Emerald varieties.

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