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INNOVATIVE TECHNOLOGIES OF AQUEOUS-ALCOHOLIC INFUSIONS FOR THE PRODUCTION OF SYRUPS

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Introduction. Confectionery in Ukraine is traditionally in demand in different sections of the population, so today the increase of their number is actual by using various raw materials, which can be substitutes for existing, but with more useful qualities.

The aim is scientific justification and innovative technologies of aqueous-alcoholic infusions (AAI) for producing syrups in confectionery products, for giving them functional and health qualities.

The object of study - characteristics and quality indicators of AAI from plant raw materials, syrups for impregnation: organoleptic indicators (color, smell, taste); physicochemical indicators (level pH, redox potential).

The subject of investigation – aqueous-alcoholic solution (control); AAI from plant raw materials: ginger root, apple fruits, cherry fruits, strawberry fruits, elderberry fruits, buckthorn fruits, rowan fruits, guilder rose fruits, leaves of cherry, strawberry leaves, cinnamon, hibiscus flowers, brandy of Ukraine 3*, syrups.

Materials and methods. Methods of investigation – redoxometry – determination of antioxidant capacity of AAI from plant raw materials; pH-metry; methods of determining of the organoleptic indicators.

Results and discussion. The minimal theoretically expected meaning of Eh_{min} for plant aqueous-alcoholic extracts was got, which has meanings from 203,0 mV (ginger root) to 480,9 mV (Sudan rose), and actually measured Eh_{act} – 82,0 mV (strawberry leaves) to 246,0 mV (ginger root). Thus, the minimum quantity of redox reaction (RR) is – 42,3 mV and typical for ginger root, and the highest meaning 266,0 mV has the AAI from guilder rose fruits. The pH level for AAI has meaning from 2,985 (Sudanese rose) to 7,605 (ginger root) that AAI have reactions from acidic to slightly alkaline.

The groups of infusions for antioxidant ability were defined: infusions with low activity – 3 samples (25%), among them are ginger roots, apple fruits, elderberry fruits; infusions with middle activity – 4 samples (33%), among them the lowest meaning 133,4 mV has cinnamon, and the most – 171,8 mV has cherry leaves; infusions with the high activity – 5 samples (42%), among them are rowan – 234,3 mV, cherry – 247,5 mV, Sudanese rose – 260,4 mV, guelder rose – 266,0 mV and buckthorn – 282,4 mV.

Conclusion. The antioxidant capacity of infusions from plant raw materials at aqueous-alcoholic and wine-cognac raw materials was studied. The most promising sources of natural antioxidants for usage in syrups technology for impregnation of confectionery product were defined.