SCIENTIFIC BASIS FOR THE USE OF TOPINAMBUR (HELIANTHUS TUBEROSUS L.) PASTE IN TECHNOLOGY OF COMBINED PUREE

T N Safronova, O M Evtukhova, T A Balyabina,
Institute of trade and services, Siberian Federal University, 2, Prushinskaya street, Krasnoyarsk, 660075, Russia
The research is based on the need for innovative development of agrarian and food technologies to form a healthy nutrition diet for all groups of the population in accordance with the food security doctrine of the Russian Federation, 2020.

The study was carried out with the aim of developing new recipes of combined purees with increased food value made of topinambur paste and berry raw products growing and widespread in the Siberian region of the Russian Federation.
Materials and methods

An object of study is topinambur paste produced by a technological scheme using Rational SelfCookingCenter® 61 combi-steamer with topinambur of the "Interest" variety (crop 2020 g), collected in the suburbs of Krasnoyarsk. The resulting paste had the following parameters: the content of dry substances is 25 ± 0.05%, pH - 3.8; Taste - sweetish with a pleasant weak smell of boiled topinambur, consistence - pasty, color - light beige. The chemical composition of the topinambur paste is given in Table 1.

<table>
<thead>
<tr>
<th>Overall sugar, g</th>
<th>Protein, g</th>
<th>Pectin, g</th>
<th>Inulin, g</th>
<th>Fat, g</th>
<th>Ascorbic acid, mg</th>
<th>Thiamine, mg</th>
<th>Pyridoxine, mg</th>
<th>Riboflavin, mg</th>
<th>β-carotene, mg</th>
<th>Niacin, mg</th>
<th>Sodium, mg</th>
<th>Potassium, mg</th>
<th>Phosphorus, mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.72</td>
<td>1.43</td>
<td>4.21</td>
<td>14.0</td>
<td>0.13</td>
<td>43.13</td>
<td>0.74</td>
<td>0.14</td>
<td>4.45</td>
<td>7.70</td>
<td>1.30</td>
<td>2.33</td>
<td>200.00</td>
<td>74.00</td>
</tr>
</tbody>
</table>
Results and discussion

As a result of organoleptic analysis, recipes that got the largest number of points are defined. Recipes No. 2, 4-6 were studied by the quantitative indicators of physiologically functional ingredients.

The composition of the combined puree affects the level of physiologically functional ingredients. The greatest amount of pectin is observed in the recipe No. 5; inulin in the formulation No. 2; ascorbic acid in the formulations No. 4, 5; thiamine in the formulations No. 2, 4, 6; riboflavin in the formulations No. 4, 6.
Results and discussion

The value of the quality criterion U of the combined puree, (intra-group differences, the multiple comparison of the average is indicated by various letters, the LSD test, P <0.05).

Based on the obtained data analysis it was concluded that the best combined puree "Siberian Health" recipes are No. 2 (Topinambura Paste 40%, Channel Rowan 20%, Cranberries, 30%, Lingonberry 10%), No. 4 (Topinambur Paste 20%, Pumpkin 20%, red currant 20%, lingonberry 40%), and No. 6 (Topinambura paste 30%, pumpkin 30%, red currant 40%).
Conclusions

The resulting combined purees have high organoleptic indicators. The use of 100 g of the combined puree "Siberian Health -2, 4, 6" satisfies the daily need of the human body for Inuline - 28-56%, pectin - 305-325%, Vitamin B1 by 20.0-21.0%, B2 - 94 -135%, C - 55-93%, which indicates their high nutritional value. The developed technology can be used to produce food with high food value as well as additives to create new food products.