There were laid four grounds on which we made the recreational researchers of water objects and forest vegetation:Ground 1 – lake Dolgoe, Ground 2 – lake Beloe,Ground 3 – lake Karavayna(north-east), Ground 4 – lake Karavayna (south-east)

The methods of our research:

1. Description of the relief.
2. Approach to water, the quality of the beach, the description of the bottom, underwater vegetation.
3. The water quality, limpidity, color, quantity of organic, PH.
4. Fishing, fish species, fish baits, the methods of catching fish.
5. Ecological status.
6. Aesthetic value.
7. Comfortable conditions.
8 Approach to the place.

According to the results of the expedition the rating table that reflects all the recreational values of the objects was *made* with the purpose to develop the ecological tourism in the Republic of Belarus.

Conclusions. Based on the rating table of the recreational resources of the objects we can find out that the highest recreational point has lake Karavayna (platform № 4) – 57 points. The lowest has Lake Beloe (platform 2) – 43 points. But water quality, landscape, aesthetic value, ecological condition practically high on all grounds. According to the rating table of the recreational values of the forest vegetation of the examined objects, you can see that the highest score has lake Beloe – 39 points. The lowest has lake Karavayna – 21 points.

A good approach to water, the gradual accumulation of depth, clear water and comfortable glade – it gives you lake Karavayna (South-Eastern shore).Mushrooms, berries, magic pine forest, coexisting conditions for fishing – you'll find it on lake Beloe.

This work, published in a booklet, will be in wide demand from tourists, fishermen and fans of active rest, naturalists, and ecologists.

СОДЕРЖАНИЕ МИНЕРАЛОВ, ФЕНОЛА, АНТОЦИАНИНА И ФЛАВОНОИДОВ В БЕЛОЙ МУКЕ И ВСЕЙ ПШЕНИЧНОЙ МУКЕ

MINERAL, TOTAL PHENOL, ANTHOCYANIN AND FLAVONOID CONTENTS OF WHITE FLOUR AND WHOLE WHEAT FLOUR

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It is determine the concentration of macro and micro elements of selected 24 white and whole wheat flours obtained from Fargo in U.S.A. P, K, Ca, Mg and S contents of 24 wheat varieties ranged from 208,96 mg/kg (W-M.d 147) to 1753,39 mg/kg (ND-A 132), 159,09 mg/kg (ND-F 137) to 3210,17 mg/kg (EC 13.5-143M25), 57,65 mg/kg (ND-F 137) to 280,00 mg/kg (MT-C 129), 21,03 mg/kg (ND-E 136) to 976,21 mg/kg (ND-A 132) and 8,24 mg/kg (ND-F 137) to 824,66 mg/kg (ND-A 132), respectively. Anthocyanin contents of whole wheat flour were found higher than those of while flour. Flavonoid contents of white flour and whole wheat flours ranged from 7,0 (PNW-A 141) to 105,3 (SD-A 138) and 11,8 (PNW-B 142) to 25,6 (SD-C 140), respectively.

Определить концентрацию макро и микроэлементов в 24 выбранных видах белой и цельнозерновой муки, полученных из Фарго в США. Содержание ПП, К, Ca, Mg и S 24 сортах пшеницы варьировалось от 208,96 мг / кг (WM.d 147) до (ND-F132), 1759,39 мг / кг (ND-A 132), 159,09 мг / кг (ND-F 137) до 3210,17 мг / кг (EC 13,5-143M25), 57,65 мг / кг (ND-F 137) -C 129), 21,03 мг / кг (ND-E 136) до 976,21 мг / кг (ND-A 132) и 8,24 мг / кг (ND-F 137) до 824,66 мг / кг (ND-A 132) . Содержание антоцианов в муке из цельной пшеницы было выше, чем в муке. Содержание флавоноидов в муке из белой муки и цельной пшеницы варьировалось от 7,0 (PNW-A 141) до 105,3 (SD-A 138) и 11,8 (PNW-B 142) до 25,6 (SD-C 140) соответственно.

Keywords: white flour, whole white flour, composition, ICP-AES.

Ключевые слова: белая мука, целая белая мука, состав, ICP-AES.

The aim of current study was to determine the concentrations of macro and micro elements of selected 24 white and whole wheat flours obtained from Fargo in U.S.A. Mineral contents of several flour types were determined by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES). P, K, Ca, Mg and S contents of 24 wheat varieties ranged from 208,96 mg/kg (W-M.d 147) to 1753,39 mg/kg (ND-A 132), 159,09 mg/kg (ND-F 137) to 3210,17 mg/kg (EC 13,5–143M25), 57,65 mg/kg (ND-F 137) to 280,00 mg/kg (MT-C 129), 21,03 mg/kg (ND-E 136) to 976,21 mg/kg (ND-A 132) and 8,24 mg/kg (ND-F 137) to 824,66 mg/kg (ND-A 132), respectively. Total phenolic and anthocyanin contents of white flour and whole wheat flour changed between 819 mg GAE/g (ND-C 134) to 4929 mg GA/g (E>14,5–145) and 313 mg GA/g (ND-D 111) to 4595 mg GA/g (SD-A 138), respectively. Anthocyanin contents of both flour types were found between 0,007 Mmol/g (MN-B 126) to 0,054 Mmol/g (SDA-138) and 0,054 Mmol/g (PNW-A 141) to 0,061 Mmol/g (ND-C 134 and SD-B 1393), respectively. Flavonoid contents of white flour and whole wheat flours were found between 7,0 mg CE/g (PNW-A 141) and 105,3 mg CE/g (SD-A 138), 11,8 mg CE/g (PNW-B 142) and 25,6 mg CE/g (SD-C 140), respectively. Generally, anthocyanin contents of whole wheat flour were found higher than those of while flour. However, flavonoid contents of white flour and whole wheat flours ranged from 7,0 (PNW-A 141) to 105,3 (SD-A 138) and 11,8 (PNW-B 142) to 25,6 (SD-C 140), respectively. When compared, flavonaid contents of white flour were found low acording to results of whole wheat flour. These differences can be probable due to bran of whole wheat.

ПОЛУЧЕНИЕ БИОЛОГИЧЕСКИ АКТИВНЫХ ДОБАВОК ИЗ ЛЕКАРСТВЕННЫХ РАСТЕНИЙ, ПРОИЗРАСТАЮЩИХ НА ТЕРРИТОРИИ РЕСПУБЛИКИ КАЗАХСТАН

OBTAINING BIOLOGICALLY ACTIVE ADDITIVES FROM MEDICINAL PLANTS GROWING IN THE TERRITORY OF THE REPUBLIC OF KAZAKHSTAN

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Для получения биологически активных добавок в виде травяных чаев предлагается использовать лекарственные растения, произрастающие на юге Казахстана в экологически чистых районах, прошедших тщательный отбор.

To obtain biologically active additives in the form of herbal teas, it is proposed to use medicinal plants growing in the south of Kazakhstan in ecologically clean regions that have been carefully selected.

Ключевые слова: биологически активная добавка, травяной чай, лекарственное растение.

Keywords: biologically active additive, herbal tea, medicinal plant.

More than 20 thousand kinds of plants grow in Kazakhstan, 6 thousand of them contain biologically active substances. 600 kinds from these 6 thousand can be used as semi-finished products for production of pharmaceuticals, ready pharmaceuticals can be produced from more than 500 kinds. However, available technologies for production of pharmaceuticals have very labor intensive, multistage and expensive processes. Besides, purity of these products leaves much to be desired, therefore, they are not competitive in the world market. In addition, synthetic drugs cause many side effects and unwanted effects and can affect internal organs such as the liver and kidneys. Pharmaceuticals prepared from plant raw materials are especially effective at treatment of chronic diseases, do not cause ghost effects at their usage and are non-toxic in comparison with pharmaceuticals derived synthetically. Probably, therefore, recently in such developed countries as America, Japan and countries of European Union, basic components for production of pharmaceuticals are natural compounds of plant and animal origin.

Such pharmaceuticals as codein, papaverine, etc., are produced at Shymkent chemical pharmaceutical factory from plant raw materials by means of extraction, and accompanying alkaloids flow to waste, as some of them toxic, others – inefficient, and some have no physiological activity. Up to the present moment these byproducts are stored in storage facilities unrealized. However, structures of these alkaloids allow produce on their basis known or new biologically active substances by modification of their structure, by introduction of new functional groups -OH, $-OCH_3$, $-OC_2H_5$, $-NO_2$, etc.