печени было найдено на самых высоких уровнях во всех образцах печени. Имели место существенные различия в содержании минералов в печени (p <0,05). Высокое содержание металлов, обнаруженное в образцах печени, может быть вызвано загрязнением и самой окружающей средой, скорее всего вторичным загрязнением, вызванным сельскохозяйственной практикой и кормом для животных. Накопление тяжелых металлов значительно варьирует от одной ткани к другой внутри животного и изменяется также между одним животным и другим. Для наших результатов наблюдалась такая же вариация. По сравнению с литературой, это могут быть разные значения для почти всех параметров элемента.

Keywords: Wild duck, livers, minerals, heavy metals, ICP-AES.

Ключевые слова: дикая утка, печень, минералы, тяжелые металлы, ИСП-АЭС.

In his study, livers of five different ducks were analysed for macro and micro elements. The aim of current study is to determine mineral and metal and non-metal contents of several duck livers. The mineral contents of several duck livers were determined by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES). P contents of duck livers ranged from 8172,87 mg/Kg (Civil) to 9699,64 mg/Kg (Kıl). K contents of liver samples were found between 7848,39 mg/Kg (Kaşıkcı) and 8900,19 mg/Kg (Kıl). While Fe contents of livers range from 669,12 mg/Kg (Civil) to 3808,90 mg/Kg (Kıl), Na contents were found between 3142,2 mg/Kg (Yeşil) to 4756,8 mg/Kg (Kıl). Zn contents of samples varied between 52,40 mg/Kg (Kaşıkcı) and 104,20 mg/Kg (Civil). Cu contents of livers were established between 16,48 mg/Kg (Kıl) and 72,73 mg/Kg (Civil). There were significant differences in mineral contents of liver types ($p<0.05$). Liver can be used as supplement for good personal health.

The high metal content found in the liver samples may be caused by pollution and the environment it self, more probably by secondary contamination caused by agricultural practices and live stock feed, as well. Contamination is transferred to animals through direct sewage water and industrial effluent. In addition, contamination of liver can also be caused by vehicle emission and from dirty slaughter places.

The accumulation of heavy metals varies significantly from one tissue to another within an animal and varies also between one animal and another. This study is carried out to determine the levels of heavy metals in livers of different ducks. The same variation was observed for our results. In comparison with literature, it may be different values for almost all element parameters. Differences among the values of liver element contents can be probably due to feeding, environmental conditions, ingredients used in animal feed and analytical conditions. The Ca, K, Mg, and P contents of livers were found in the highest levels in all liver samples. Liver can be used as supplement for good personal health.

THE RECREATIONAL RESOURCES OF UNKNOWN CORNERS OF BELARUSIAN LAKE DISTRICT

РЕКРЕАЦИОННЫЕ РЕСУРСЫ МАЛОИЗВЕСТНЫХ УГОЛКОВ БЕЛОРУСКОГО ПООЗЕРЬЯ

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The recreational possibilities of little-known corners of the Byelorussian Poozerie, which can be used for the development of ecotourism in Belarus, are considered in the work.

Рассматриваются рекреационные возможности малоизвестных уголков Белорусского Поозерья, которые могут быть использованы в целях развития экотуризма в Республике Беларусь.

Keywords: Recreational resources, ecotourism, Poozerye.

Ключевые слова: рекреационные ресурсы, экотуризм, Поозерье.

The aim of this work is the development of ecological tourism in Belarus.

The task was to give a full description of the recreational resources of unknown corners of Belarusian Lake District.

From June 19 to June 24 the pupils of our gymnasium went on expedition in order to study the recreational resources of the corners of Belarusian Lake District. The route of the expedition was developed during the preparation: the Station Zyabki (railway line Krulayshina – Polotsk) – lake Dolgoe – lake Beloe – lake Karavayna – lake Dolgoe – station Zyabki.

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.