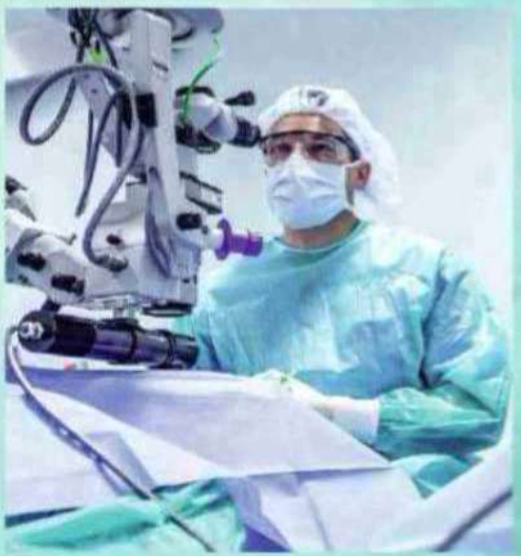
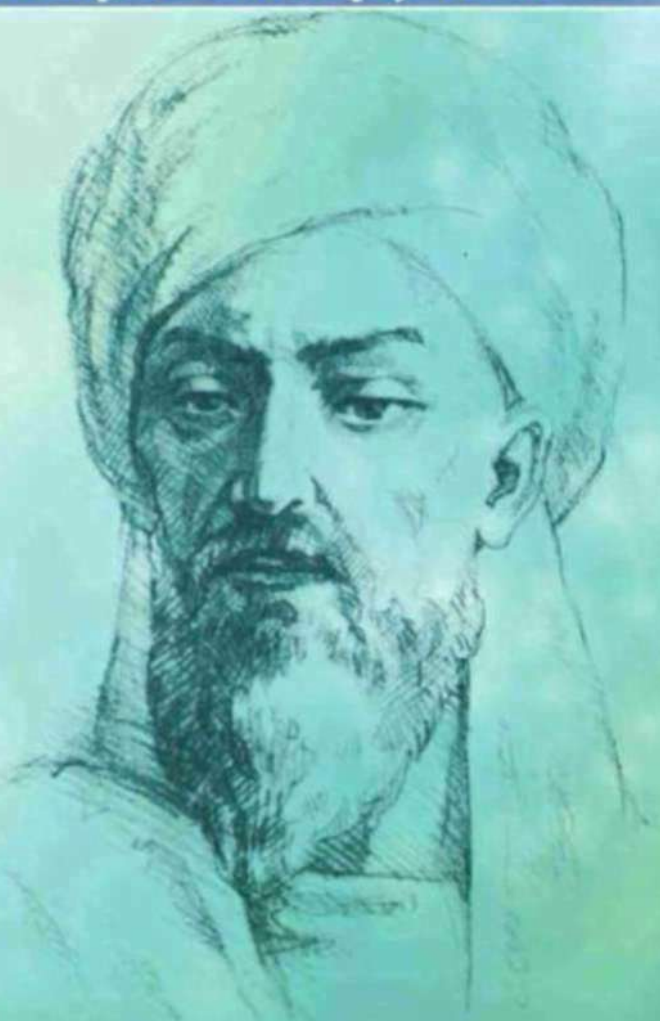
New Day in Medicine
Новый День в Медицине
NDM

TIBBIYOTDA YANGI KUN

Ilmiy referativ, marifiy-ma'naviy jurnal





AVICENNA-MED.UZ

ISSN 2181-712X.
EiSSN 2181-2187

2 (76) 2025

ТИББИЁТДА ЯНГИ КУН
НОВЫЙ ДЕНЬ В МЕДИЦИНЕ
NEW DAY IN MEDICINE

Илмий-рефератив, маънавий-маърифий журнал
Научно-реферативный,
духовно-просветительский журнал

УЧРЕДИТЕЛИ:

БУХАРСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ ИНСТИТУТ
ООО «ТИББИЁТДА ЯНГИ КУН»

Национальный медицинский исследовательский центр хирургии имени А.В. Вишневского является генеральным научно-практическим консультантом редакции

Журнал был включен в список журнальных изданий, рецензируемых Высшей Аттестационной Комиссией Республики Узбекистан (Протокол № 201/03 от 30.12.2013 г.)

2 (76)

2025

февраль

www.bsmi.uz
https://newdaymedicine.com E:
ndmuz@mail.ru
Тел: +99890 8061882

Received: 20.01.2025, Accepted: 03.02.2025, Published: 10.02.2025

UDC 616-03:574

ECOLOGICAL AND GEOGRAPHICAL FEATURES OF MORBIDITY IN SELECTED RESEARCH DISTRICTS

[1]*Rahimqulov Azamat Salavatovich https://orcid.org/0000-0003-4963-5579*
[2]*Mavlyanova Zilola Farxadovna https://orcid.org/00165-2134-7222-1978*

[1]Bashkir State Medical University 450008, Republic of Bashkortostan, Ufa, st. Lenina, 3
tel: 8 (347) 272-11-60 e-mail: bashsmu@yandex.ru
[2]Samarkand State Medical University Uzbekistan, Samarkand, st. Amir Temur 18,
Tel: +99818 66 2330841 E-mail: sammi@sammi.uz

✓ ***Resume***

Relevance: general morbidity, including occupational diseases, is determined, first of all, by the physical-geographical, ecological and economic characteristics of the region where the study is conducted. Hence, the primary analysis of the above characteristics is of particular importance for any original medical and biological study. Objective of the study: to analyze the physical-geographical, ecological and economic components of 4 districts of the Republic of Bashkortostan: Karaidelsky, Krasnokamsky, Salavatsky and Uchalinsky. Briefly analyze the state of health care in these districts. Research materials and methods: statistical, analytical (including the method of system analysis), historical, economic, economic. Research results: The Republic of Bashkortostan has historically been a region with developed agriculture, developed extractive industry: oil and gas, mining, etc. This creates a potential threat to the health of the local population in terms of the occurrence of cardiovascular, respiratory and neurological diseases, the ecology of the region, especially in the Uchalinsky district. The current healthcare system of Karaidelsky, Krasnokamsky, Salavatsky and Uchalinsky districts cannot fully meet the needs of patients for timely, high-quality and affordable medical care. It is necessary to introduce preventive measures, including improvement, a detailed review of existing methods of providing medical care.

Keywords: Republic of Bashkortostan, geography, ecology, public health, occupational diseases.

ЭКОЛОГО-ГЕОГРАФИЧЕСКАЯ ХАРАКТЕРИСТИКА ЗАБОЛЕВАЕМОСТИ В ОТДЕЛЬНЫХ РАЙОНАХ ИССЛЕДОВАНИЯ

[1]*Рахимкулов Азамат Салаватович https://orcid.org/0000-0003-4963-5579*
[2]*Мавлянова Зилола Фархадовна https://orcid.org/00165-2134-7222-1978*

[1]Башкирский государственный медицинский университет 450008, Республика Башкортостан, г. Уфа, ул. Ленина, д. 3 тел: 8 (347) 272-11-60 e-mail: bashsmu@yandex.ru
[2]Самаркандский государственный медицинский университет Узбекистан, г.Самарканд, ул. Амира Темура 18, Тел: +99818 66 2330841 E-mail: sammi@sammi.uz

✓ ***Резюме***

Актуальность: общая заболеваемость, в том числе профессиональными заболеваниями, определяется, прежде всего, физико-географическими, экологическими и экономическими характеристиками региона проведения исследования. Отсюда особую важность для любого оригинального медико-биологического приобретает первоочередной анализ вышеназванных характеристик. Цель исследования: проанализировать физико-географические, экологические и экономические составляющие 4 районов Республики Башкортостан: Караидельского, Краснокамского, Салаватского и Учалинского. Кратко проанализировать состояние здравоохранения в данных районах. Материалы и методы исследования: статистический, аналитический (в т.ч. метод системного анализа), исторический, экономический, экономический. Результаты исследования: Республика Башкортостан исторически – регион с развитым сельским хозяйством, развитой добывающей

промышленностью: нефтегазовой, горнорудной и др. Отсюда возникает потенциальная угроза для здоровья местного населения в части возникновения в первую очередь сердечно-сосудистых, респираторных и неврологических заболеваний, экологии региона, особенно в Учалинском районе. Существующая в настоящее время система здравоохранения Караидельского, Краснокамского, Салаватского и Учалинского районов в полной мере не может обеспечить потребности пациентов в своевременной, качественной и доступной медицинской помощи. Необходимо введение мер профилактического характера, в том числе совершенствование, детальный пересмотр существующих методик оказания медицинской помощи.

Ключевые слова: Республика Башкортостан, география, экология, общественное здоровье, профессиональные заболевания.

TADQIQOTNING AYRIM HUDUDLARIDA KASALLANISHNING EKOLOGIK VA GEOGRAFIK XUSUSIYATLARI

[1]*Rahimqulov Azamat Salavatovich* https://orcid.org/0000-0003-4963-5579
[2]*Mavlyanova Zilola Farxadovna* https://orcid.org/00165-2134-7222-1978

[1]Boshqird davlat tibbiyot universiteti 450008, Boshqirdiston Respublikasi, Ufa, st. Lenina, 3 tel: 8 (347) 272-11-60 e-mail: bashsmu@yandex.ru
[2]Samarqand davlat tibbiyot universiteti O‘zbekiston, Samarqand, st. Amir Temur 18, Tel: +99818 66 2330841 E-mail: sammi@sammi.uz

✓ ***Rezyume***

Tadqiqotning dolzarbligi: umumiy kasallanish, shu jumladan kasb kasalliklari, eng avvalo, tadqiqot o‘tkazilayotgan hududning tabiiy-geografik, ekologik va iqtisodiy xususiyatlari bilan belgilanadi. Shu bois, yuqorida tilga olingan xususiyatlarni dastlab tahlil qilish har qanday original tibbiy-biologik tadqiqot uchun alohida ahamiyat kasb etadi. Tadqiqotning maqsadi: Boshqirdiston Respublikasining 4 ta tumani: Qaraidel, Krasnokam, Salavat va Uchali tumanlarining tabiiy-geografik, ekologik va iqtisodiy jihatlarini tahlil qilishdan iborat. Shuningdek, ushbu hududlardagi sog‘liqni saqlash holatini qisqacha ko‘rib chiqish ham maqsad qilingan. Tadqiqot usullari: statistik, analitik (jumladan, tizimli tahlil usuli), tarixiy va iqtisodiy. Tadqiqot natijalari: Boshqirdiston Respublikasi tarixan qishloq xo‘jaligi va qazib olish sanoati: neft-gaz, tog‘-kon sanoati va boshqalar rivojlangan hududdir. Bu esa, birinchi navbatda, yurak-qon tomir, nafas olish va asab tizimi kasalliklarining paydo bo‘lishi, mintaqa ekologiyasi, ayniqsa Uchali tumanida mahalliy aholi salomatligi uchun potensial xavf tug‘diradi. Qaraidel, Krasnokam, Salavat va Uchali tumanlaridagi mavjud sog‘liqni saqlash tizimi bemorlarning o‘z vaqtida, sifatli va qulay tibbiy yordamga bo‘lgan ehtiyojini to‘liq ta’minlay olmayapti. Profilaktik xususiyatga ega bo‘lgan chora-tadbirlarni joriy etish, shu jumladan tibbiy yordam ko‘rsatishning mavjud usullarini takomillashtirish va batafsil qayta ko‘rib chiqish zarur.

Kalit so'zlar: Boshqirdiston Respublikasi, geografiya, ekologiya, jamoat salomatligi, kasb kasalliklari.

Relevance

The Republic of Bashkortostan is located in the southern part of the Ural Mountains, on the border of two different geographical zones. The area of the Republic of Bashkortostan is 143.6 thousand km2. The length of the territory from north to south is 550 kilometers, from west to east - more than 430 kilometres. The rolling-hilly plains of the Bashkir Pre-Urals occupy 2/3 of the Republic's area, the mountainous Bashkir (Southern) Urals - more than 1/4, and the ridge and shallow hilly strip of the Bashkir Trans-Urals - less than 1/10 [16,20,21,22,23].

We chose the districts of the Republic of Bashkortostan - Karaidelsky, Krasnokamsky, Salavatsky and Uchalinsky - for the study.

Karaidelsky district is located in the northeastern part of the Republic of Bashkortostan. It borders with Askinskiy, Baltachevskiy, Blagoveschenskiy, Duvanskiy, Mishkinskiy and Nurimanovskiy districts of the Republic of Bashkortostan. The area of the administrative-territorial unit is 3664 km^2. The district center is the village of Karaidel. The territory of the district occupies a part of the Ufa plateau formed

by the anticlinal uplift of Lower Permian limestones and dolomites. Karst is intensively developed. The eastern slope slopes sharply towards the Yuryuzano-Ai Plain, and the western slope is gentle and merges with the Pribelskaya Plain. The interfluves are flat and have a height of 450-500 m [8,9,10].

The district is a forest-industrial-agricultural district. Agricultural lands occupy 119,7 thousand hectares (35.6% of the district territory), including 76.2 thousand hectares of arable land, 23,5 thousand hectares of pastures, 19,8 thousand hectares of hayfields. The main sectors are grain farming, potato farming, dairy and meat cattle breeding, pig breeding. In Baikibashevo village there is a butter factory and Distribution transformer substation. The area of Karaidelsky forestry is 185,7 thousand hectares. The timber reserve is estimated at 25.1 million m3, of which 7.8 million m3 are conifers. The timber harvesters are: Karaidel interfarm forestry, Bashlesprom, Bugulma logging enterprise [8,10].

Medical care is provided to the population by the Karaidelsky Central District Hospital. The district has a central district hospital, 7 rural medical outpatient clinics, 56 feldsher and midwife stations. The district has 140 beds. In the first 11 months of 2009, 8,149 ambulance trips were made, which is 98.7 per cent of the municipal plan. Inpatient care totaled 47,426 bed-days and 1,681 patient-days were spent in day hospital. The number of doctor's visits totaled 246603 units [8].

Krasnokamsky district is located in the north-west of Bashkortostan. It borders with the Yanaulsky district in the north, the Kaltasinsky District in the east, and the Dyurtulinsky and Ilishevsky districts in the south. The area of the district is 1595 km². The administrative centre is the village of Nikolo-Berezovka. The eastern part of the raion is located on the Pribelskaya rolling-wavy plain, and the western part on the Prikamskaya lowland plain. The left bank of the Kama River, 50-60 kilometres wide, starting from the Bui River, is smoothed by an ancient glacier of the cover type, which moved about 600 million years ago from south-east to north-west. The total elevation of the relief is 150-300 meters above sea level [9,11].

The district is industrial-agricultural. The agrarian sector of the district is represented by 11 agricultural enterprises, 3 LLCs, 29 peasant-farms specialize in growing winter rye, spring wheat, fodder crops, potatoes, breeding cattle of dairy and meat direction. On the territory of the district there are OOO "Karmanovsky fish farm", a fishing area of "Bashkirrybkhoz", "Kamsky elevator", forestry, hatchery station [9,11].

The industry is based on oil production. In 1955 near the village of Ashit the first oil fountain of the Arlanskoe oil field started to flow, which marked the beginning of a new epoch in the development of the region. Development of the Khazinskoye oil field began on 1 October 1965. To date, 4 companies (Arlanneft, Bashneft-Dobycha LLC) are engaged in oil production. The Arlanskoe field is a multilayer field and belongs to the category of large oil fields in Russia. It is distinguished by extremely complex geological and physical properties of reservoirs and physical and chemical properties of fluids, which predetermined the complexity of its development (Baimukhametov K.S. [et al. [et al.] Geological structure and development of Arlanskoe oil field. Ufa: Bashneft, 1997. - 386 c.).

Oil is highly sulphurous, resinous, highly viscous with low gas saturation. Lower Carboniferous terrigenous oils are heavy (density at saturation pressure 0.875), sulphurous (up to 3%), with low yield of light fractions, paraffinic (up to 3%), highly resinous. The initial hydrodynamic regime of the majority of deposits is closed, elastic. Only in the northern part of the field in one of the main reservoirs VI contour water activity is manifested. In intermediate formations the influence of lithological factor is very strong. The density of water saturating the formations in this field is 1003 kg/m3, mineralized. The main ions are Cl-, HCO3-, CO32-, Na+, Ca2+, Mg2+, K+. Water cut of production for 1996 was 92%. The compressibility coefficient is 0.004-0.005%. Viscosity of water under reservoir conditions is 0.8 mPa-s. As shown by technological calculations and actual data, oil production is accompanied by curing of a huge amount of associated water from reservoirs, which leads to longer development periods and lower oil recovery compared to fields containing less viscous oil (Baimukhametov K.S. [et al.] Geological structure and development of Arlanskoe oil field. Ufa: Bashneft, 1997. - 386 c.).

Medical care is provided by the Krasnokamsky Central District Hospital, which includes general therapeutic №1 and polyclinic departments, an emergency department, a pharmacy located in the village of Nikolo-Berezovka; general therapeutic № 2 with an intensive care ward, polyclinic, nursing department located in the village of Kuyanovo; a general practitioner's department in the village of Novokabanovo; 33 medical assistant and midwife stations. In October 2003, a social shelter for children and adolescents began operating. In 2004, a rehabilitation center for children and persons with disabilities was opened. In 2005, the Kama children's health camp was put into operation [9].

Salavatsky district is located in the north-eastern part of the Republic of Bashkortostan. It borders with the Duvansky, Kiginsky and Nurimanovsky districts. The total area of the district is 2182 km^2. The administrative center - Maloyaz village - is located on the left bank of the Yuryuzan river, 183 km north-east of Ufa and 29 km to the nearest railway station Kropachevo [14, 23].

The district is a zone of risky farming with cattle-breeding and grain specialization of agriculture. The district is taking measures to improve the structure of sown areas for the development of livestock breeding. Currently, the sown area occupies 12,5 thousand hectares, including 11 thousand hectares of grain crops. Agricultural enterprises specialize in growing grain crops, fodder crops, potatoes, breeding of cattle of meat and dairy direction, etc. The agricultural sector is also developing. Vegetable breeding, swine breeding, actively developed beekeeping. [23].

The relief is represented by the Yuryuzan-Ai plain, in the north by the denudation Priai plain with terraced valleys of the Yuryuzan and Ai rivers. In the south-eastern part the leading ridges of the western slope of the Ural Mountains (Suleya Ridge, Bashkir Ilchikeevo) stretch along the south-eastern part. In the south-west rises the Karatau Ridge with a height of 592 m above sea level (absolute height - 692 m), in the north-west there is the Ufa Plateau with an average surface height of 370 metres. Salavatsky district has significant resources of surface and underground waters, which are used for the needs of household and drinking water supply of the population, industrial and agricultural production [1, 23].

The Kurgazak spring flows from the spurs of the Karatau mountain range. It is located near the village of Komsomol, 2,8 km south of the sanatorium "Yangan-Tau" on the left slope of the valley of the Yuryuzan River, 150 m from its floodplain. The source beats three powerful jets, located 1-2 meters apart. The vicinity of the spring is mainly occupied by pine, aspen and birch forests. The source Kurgazak is included in the first sanatorium zone of the resort "Yangan-Tau" [4].

The presence of organic substances (mainly humus substances) in the amount of up to 10 mg/l has been established in water. Radon is present (14.9-17.2 Mahe units or 5.4-6.3 nSc/l), its flow rate is 100-125 l/s or 8640.0 thousand litres/day. Due to these qualities it is used in sanatorium "Yangan-Tau" as therapeutic and drinking, but the use of radon water for domestic drinking water supply of the resort, according to the conclusion of the radiological laboratory of the Central Research Institute of Balneology and Physiotherapy (Moscow), is contraindicated (5). Hydrogeochemical regime of the source is relatively stable, which is evident from the following formula: N2Rn5.4 - 6.3 M 0.5 x [(HCO3 81-86 SO4 9 - 10 Cl3-6) / (Ca55-58Mg32-41Na4-11)] pH6.9Eh+90.

The above-mentioned set of thermogeochemical parameters can be most fully accounted for by the hydrogeodynamic scheme, which provides for the formation of groundwater feeding the source Kurghazak at depths of 600-800 m in the Carboniferous-Devonian sediments. At the same time, the open area of its feeding (infiltration) is the surface outcrops of Carboniferous and Devonian limestones to the west of the source, within the Karatau structural complex. As a result of sinking of fissure-karst waters to a depth of 600-800 m, they are heated by the internal heat of the earth. At the same time, helium and radon enter the water from carbonate rocks, which have an increased content of radiogenic elements. The same rocks are the cause of slightly increased concentration of chlorine ions in water [2].

In Salavatsky district there is Yangantau Mountain (Karagosh-tau - Berkutova Mountain) - the center of health tourism, which is a health resort of federal importance. The highest temperature is recorded on the southern slope. In the places of the most intensive heat emission steam and dry-air treatment centers were built. The height of the mountain is 413 m above sea level, 161 m above the level of the river. Yuryuzan. Natural hot steam (40.0-50.00°C) and dry (50.0-70.00°C) gases (carbon-oxygen-nitrogen and oxygen-nitrogen composition), which are released from cracks, are used for steam and dry-air baths. The temperature of gases of Yangan-Tau mountain near the surface of cracks fluctuates within 37.0-150.00°C, in the well at the depth of 80-90 meters it reaches 3800°C. The main therapeutic factor of the resort is unique geothermal dry and wet gases of Yangan-Tau Mountain with relative humidity of 45.0-100.0% and dry gases with relative humidity of 18.0-30.0% [5].

Measurements carried out by radiometer RANAG-1 with gamma attachment from SRP-2 (Kristall) device according to the approved methods showed that radon content in tap water of Yangan-Tau resort is 14 units Mache. In the bath water in the water treatment center of the resort radon content varies from 3.5 units. Mahe when filling it through a tap located high above the bath (strong splashing of water flowing from the tap) and 12.4 units. Mache when filling the bathtub with a rubber hose put on the tap above the bathtub and reaching the bottom of the bathtub, which eliminates splashing of water when filling it. Radon content in the air of dry-air baths is: in the pipe, through which the gas comes - 0.3 units. Mache,

in the volume of the bath - 2.8 units Mache, in the air of the room where the dry-air baths are located - 0.28 units Mache and 0.026x105 MEV/l of daughter products (according to the latent energy of their decay). Thus, air pollution of dry-air bathing room by radon and its daughter products is 0.1 of the maximum permissible level of these isotopes in the air of industrial premises. Radon content in the air of steam baths: in the opening of the pipe supplying steam to the treatment cabin - 1.03 units. Mahe, in the treatment cabin - 0.6 units Mache. The content of radon and its daughter products in the air of the room, where the experimental cabins for steam procedures are located, is equal to 0.1 unit Mache (4.2x10). Mache (4.2x10-11 Cu/l), and radon daughter products (by latent energy of decay)-0.03x105 MeV/l. In total, air pollution by radon and its daughter products does not exceed 0.1 of the TLV (Threshold limit value) level (TLV for radon 3x 10-9 Cu/l; for its products – 0,37x105 MeV/l) [5].

Medical care is provided by Maloyazovskaya Central District Hospital with 186 round-the-clock beds and a polyclinic with 200 visits per shift, two rural district hospitals: Arkaulovskaya and Mursalimkinskaya with 15 day beds each. Medical services are also provided by the Laklinskaya and Turnalinskaya medical outpatient clinics and 34 feldsher-midwife stations. The total capacity of rural outpatient clinics and district hospitals is 100 visits per shift. The number of hospital beds in the district, as well as the specific number of doctors, is somewhat lower than the average for the Republic of Bashkortostan. As of 31.12.2011, 48 doctors worked in the district. The number of middle medical personnel totaled 241 persons, including 141 persons at the Maloyazovskaya Central District Hospital. In terms of provision with middle medical personnel, the region significantly exceeds (by 30.0-40.0%) the average republican level. Taken together, all this is evidence of a rather high level of health care in Salavatsky district [23].

Uchalinsky district is located in the northern part of the Bashkir Trans-Urals, bordering Abzelilo and Beloretsky Districts. The area of the district is 4510 km2. The district center is the town of Uchaly, located 360 km from Ufa [17,19].

Uchalinsky district has undergone a rather complex history of geological development. These processes are associated with the formation of a wide range of rock types enriched with many heavy metals and their accumulation in the form of ore occurrences and deposits. There are deposits of copper-encrusted ores (Uchalinskoye copper-encrusted deposit, Ozernoye, Zapadno (Western)-Ozernoye, Novo (New)-Uchalinskoye), ore (Mindyakskoye, Ik-Davlat) and placer (Suleymanovskoye, Maliy (Little) Kumach, Maliy (Little) Iremel) gold, chromite (Kurmankulskoye) and many other minerals of non-metallic origin. Uchalinskoye copper-cement deposit contains both ore (pyrite, sphalerite and chalcopyrite) and non-ore (quartz, barite) minerals. There are also minor (galena, hematite, magnetite, carbonates, chlorides, etc.) and rare (altaiite, arsenopyrite, nugget gold, tellurovismunite, marcasite, etc.) minerals. The predominant part of the mined ores are high mercury and high arsenic ores [15].

The industry of Uchalinsky district is represented by Uchalinsky Mining and Processing Combine, Mindyak Mine, Mansurovsky Construction Materials Combine and other smaller enterprises and mining artels [18].

The Uchalinsky Mining and Processing Combine produces copper, pyrite and zinc concentrates, which are supplied not only in the Russian Federation, but also to foreign consumers. Ore production in recent years totaled: 2008 - 5085.7 thousand tones, 2009. - 5403.0 thousand tones, 2010 - 5427.2 thousand tones. - 5427.2 thousand tones, 2011. - 5898.0 thousand tones, 2012. - 6079.9 thousand tones [12]. The output of metals in the form of concentrates varies between 50-100 thousand tones annually.

The content of heavy metals in different natural environments of Uchaly district depends on both aerogenic pollution and geochemical features of this area. The total amount of heavy metals deposited on the territory from aerogenic pollution by Uchaly Mining and Processing Combine is the highest on the territory of the combine in Uchaly town - 6100.2 μg/l and above the lake Bolshiye (Big) Uchaly - 7727 μg/l [12].

City of Uchaly is exposed to the greatest aerogenic pollution by mining and other industrial enterprises. Very high content of copper (up to 15 Threshold limit value (TLV)), iron, cobalt and manganese (up to 5,8 TLV) is noted in the lake Bolshiye Uchaly and in groundwater near the industrial dumps of the mining and processing plant [19].

Conclusion

The performed studies on the contamination of food products with metals have shown that the most significant indicator is their contamination with cadmium, chromium and lead. Thus, the content of chromium exceeds TLV in milk samples 14-38 times, in meat samples - 7-38 times; the content of lead in milk exceeds TLV 1.5-2 times. Increased arsenic content is observed in vegetables - 1.7-1.9 TLV and in milk 1-1.2 TLV. Thus, in the zone of influence of Uchalinsky Mining and Processing Combine emissions, environmental objects and foodstuffs are polluted with toxic elements. Pollution of atmospheric air, water, food products of

local production contributes to the entry of toxic elements in various ways into the body of inhabitants of this biogeochemical province [12]. Health care. Health care institutions (Uchalinsky District Hospital (polyclinic, therapeutic and surgical hospital, maternity hospital); Children's sanatorium "Ural"; Preventorium) [18].

LIST OF REFERENCES:

1. Abdrakhmanov R.F. Hydrogeological conditions / R.F. Abdrakhmanov //Problems of ecology: principles of their solution on the example of the Southern Urals: collection of articles. - Moscow: Nauka, 2003; 14-29 pp.
2. Abdrakhmanov R.F. Hydrogeoecology of Bashkortostan /R.F. Abdrakhmanov. - Ufa: Informreklama, 2005; 344 pp.
3. Abdrakhmanov R.F. Mineral healing waters of Bashkortostan / R.F. Abdrakhmanov, V.G. Popov. - Ufa: Gilem, 1999; 298 pp.
4. Abdrakhmanov R.F. Fresh ground waters of Bashkortostan / R.F. Abdrakhmanov, Yu.N. Chalov, E.R. Abdrakhmanova. - Ufa: Informreklama, 2007; 184 pp.
5. Badretdinov R.R. Yangan-tau / R.R. Badretdinov //Bashkir Encyclopedia: in 7 vol. / ed. by M.A. Ilgamov. - Ufa: Bashkir Encyclopedia, 2011;7(F-YA):465.
6. Badretdinova L.M. Study of the trace element composition of mineral water "Kurgazak" as a product of functional nutrition / L.M. Badretdinova //Vestn. restorative medicine. 2010;3:38-41.
7. Bashkortostan: a brief encyclopaedia / edited by R.Z. Shakurov (chief editor) [and others]. - Ufa: Bashk. encyclopaedia, 1996; 672 pp.
8. Golubchenko I.V. Kariadel district / I.V. Golubchenko, G.N. Iskandarova // Bashkir Encyclopedia: in 7 vol. / ed. by M.A. Ilgamov. - Ufa: Bashkir Encyclopedia, 2007;3(H-K):325-326.
9. Golubchenko I.V. Krasnokamsky district /I.V. Golubchenko, G.N. Iskandarova //Bashkir Encyclopedia: in 7 vol. / ed. by M.A. Ilgamov. - Ufa: Bashkir Encyclopedia, 2007;3(H-K):523-524.
10. Karaidelsky raion [Electronic resource]: official resource. - Mode of access: http://www.admkaraidel.ru/
11. Krasnokamsk district [Electronic resource]: official resource. - Mode of access: http://www.krasnokama.ru/
12. Nasyrov R.Kh. Uchalinsky mining and processing combine /R.Kh. Nasyrov //Bashkir Encyclopedia: in 7 vol. / ed. by M.A. Ilgamov. - Ufa: Bashkir Encyclopedia, 2010;6(Sov.-U):509.
13. Republic of Bashkortostan // Bashkir Encyclopedia: in 7 vol. / ed. by M.A. Ilgamov. - Ufa: Bashkir Encyclopedia, 2009;5:297-302.
14. Salavatsky district [Electronic resource]: official resource. - Mode of access: http://www.admmaloyaz.ru/
15. Seravkin I.B. Uchalinsky copper-coal deposit / I.B. Seravkin, A.V. Chadchenko // Bashkir Encyclopedia: in 7 vol. / ed. by M.A. Ilgamov. - Ufa: Bashkir Encyclopedia, 2010;6(Sov.-U):511-512.
16. Takhayev H.Ya. Bashkiria (economic and geographical characteristics) /H.Ya. Takhayev. - Moscow: State Publishing House of Geography, 1950; 324 pp.
17. Uchalinsky district [Electronic resource]: official resource. - Mode of access: http://www.uchaly-rb.ru/
18. Fatkullin R.A. Uchalinsky district / R.A. Fatkullin //Bashkir Encyclopedia: in 7 vol. / ed. by M.A. Ilgamov. - Ufa: Bashkir Encyclopedia, 2010;6(Sov.-U):510-511.
19. Fatkullin R.A. Uchaly / R.A. Fatkullin // Bashkir Encyclopedia: in 7 vol. / ed. by M.A. Ilgamov. - Ufa: Bashkir Encyclopedia, 2010;6(Sov.-U):512-513.
20. Khismatov M.F. Bashkiria moi /M.F. Khismatov. - Ufa: Bashkir Book Publishing House, 1987; 160 pp.
21. Khismatov M.F. Bashkiria: economic and geographical sketch / M.F. Khismatov. - Ufa: Bashkir Book Publishing House, 1968; 288 pp.
22. Khismatov M.F. Bashkiria: economic and geographical sketch / M.F. Khismatov. Ufa: Bashkir Book Publishing House, 1979; 192 pp.
23. Shirgazin R.Z. Salavatsky district / R.Z. Shirgazin //Bashkir Encyclopedia: in 7 vol. / ed. by M.A. Ilgamov. - Ufa: Bashkir Encyclopedia, 2009;5:391-392.

Entered 20.01.2025