

# ГИГИЕНИЧЕСКАЯ ОЦЕНКА СЛУЧАЕВ ПИЩЕВЫХ ОТРАВЛЕНИЙ СРЕДИ НАСЕЛЕНИЯ ФЕРГАНСКОЙ ДОЛИНЫ

Р.У.Ахмадалиев.<sup>1</sup>, Ш.С.Бахритдинов.<sup>2</sup>, Ш.Я.Закирходжаев.<sup>2</sup>

<sup>1</sup>Ферганский медицинский институт общественного здоровья

<sup>2</sup>Ташкентская медицинская академия

Для цитирования: © Ахмадалиев Р.У., Ш.С.Бахритдинов., Ш.Я.Закирходжаев.

ГИГИЕНИЧЕСКАЯ ОЦЕНКА СЛУЧАЕВ ПИЩЕВЫХ ОТРАВЛЕНИЙ СРЕДИ НАСЕЛЕНИЯ ФЕРГАНСКОЙ ДОЛИНЫ ЖКМП.-2023.-Т.1-№1.-С

Поступила: 20.02.2023

Одобрена: 21.02.2023

Принята к печати: 05.03.2023

**Аннотация.** По данным международных организаций, наблюдается рост числа пищевых отравлений среди населения. Цель исследования: проведена гигиеническая оценка явлений пищевых отравлений среди населения. Полученные результаты. В 2004-2013 годах в Республике абсолютное количество заболеваний от пищевых продуктов составило 855 единиц. Число погибших составило 124 человека. Были проведены научные исследования по реализации прогноза явлений пищевых отравлений до 2030 года.

**Выводы.** 1. Анализ пищевых отравлений, отмечается, что в 85% случаев отравление происходит в домашних условиях, в 10,2% случаев на свадебных церемониях, в 1,8 - 2% на предприятиях торговли и общественного питания.

**Ключевые слова:** Отравление, алиментарные факторы, гигиена, экология, нутриенты, пищевые продукты, системный подход,

## ФАРҒОНА ВОДИЙСИ АҲОЛИСИ ЎРТАСИДА ОВҚАТДАН ЗАҲАРЛАНИШ ХОДИСАЛАРИНИ ГИГИЕНИК БАҲОЛАШ

Р.У.Ахмадалиев.<sup>1</sup>, Ш.С.Бахритдинов.<sup>2</sup>, Ш.Я.Закирходжаев.<sup>2</sup>

<sup>1</sup>Фарғона жамоат саломатлиги тиббиёт институти,

<sup>2</sup>Тошкент тиббиёт академияси

Izoh: © R.U.Ahmadaliev., Sh.S.Baxritdinov., Sh.Ya. Zakirkhodjaev.

FARG'ONA VODIYSI AHOLISI O'RTASIDA OVQATDAN ZAHARLANISH XODISALARINING GIGIENIK BAHOOLASH KPTJ.-2023-T.1-№1.-C

Qabul qilindi: 20.02.2023

Ko'rib chiqildi: 21.02.2023

Nashrga tayyorlandi: 05.03.2023

**Аннотация.** Ҳалқаро ташкилотларнинг берган маълумотларига кўра, аҳоли ўртасида овқатдан захарланиш ошиб бормоқда. Тадқиқот мақсади: Аҳоли ўртасида овқатдан захарланиш ҳодисаларини гигиеник баҳолаш бўлди. Олинган натижалар. Республикада 2004-2013 йилларда овқатдан касалланиш абсолют сони 855 тани ташкил қилди. Ўлим сони эса 124 тани ташкил қилди. Овқатдан захарланиш ҳодисаларини 2030 йилгача прогнози амалга ошириш бўйича илмий тадқиқодлар олиб борилди. Хулосалар. 1.Овқатдан захарланишни таҳлили, 85% ҳолатда захарланишлар уй шароитда, 10,2% ҳолатда тўй маросимларда, 1,8-2% савдо ва умумий овқатланиш корхоналарда содир бўлаётганлиги қайд қилинди.

**Калит сузлар:** Заҳарланиш, алиментар омиллар, гигиена, экология, нуриентлар, озиқ - овқат маҳсулотлари, тизимли ёндашиш.

## HYGIENIC ASSESSMENT OF CASES OF FOOD POISONING OF THE ENVIRONMENT POPULATION OF FERGANA REGION

R.U.Akhmadaliev.<sup>1</sup>, Sh.S.Bakhriddinov.<sup>2</sup>, Sh.Y.Zakirkhodjaev.<sup>2</sup>

<sup>1</sup>Fergana Public Health Medical Institute,

<sup>2</sup>Tashkent Medical Academy

For situation: © R.U.Akhmadaliev., Sh.S.Bakhriddinov., Sh.Y.Zakirkhodjaev.

HYGIENIC ASSESSMENT OF CASES OF FOOD POISONING OF THE ENVIRONMENT POPULATION OF FERGANA REGION JCPM -2023.T.1.№1.-C

Received: 20.02.2023

Revised: 21.02.2023

Accepted: 05.03.2023

**Annotation:** Abstract. According to international organizations, there is an increase in the number of food poisoning among the population. The purpose of the study: a hygienic assessment of the phenomena of food poisoning among the population was carried out. The results obtained. In 2004-2013, the absolute number of diseases from food products in the republic amounted to 855 units. The death toll was 124 people. Scientific research was carried out to implement the forecast of food poisoning phenomena until 2030. Conclusions. 1. Analysis of food poisoning, it is noted that in 85% of cases poisoning occurs at home, in 10.2% of cases at wedding ceremonies, in 1.8 - 2% at trade and catering enterprises.

**Keyword:** Poisoning, alimentary factors, hygiene, ecology, nutrients, food products, systemic approach

### Relevance.

The incidence of food poisoning among the population is increasing year by year. In our republic, mass poisonings from extremely dangerous pesticides (in Buvaida district of Fergana region), mushrooms (in Tashkent region),

nitrites (in Navoi region), botulism, and methyl alcohol in a number of regions greatly damaged the health of the population. In the territory of Karakalpakstan, the prestigious laboratories of Europe have detected high concentrations of dioxin in food products. Our republic

The purpose of the study: Fergana Valley analysis of food poisoning incidents in the population. The results obtained. The term food poisoning is a disease that has its own etiology, pathogenesis, treatment and prevention methods. In the Fergana Valley Hygienic analysis of food poisoning, while the total number of poisonings in the Republic was 855, in the regions of the Fergana Valley, this figure was 269 in the Fergana Region, 194 in the Namangan Region, and 139 in the Andijan Province. In 2% of cases, it is noted that it happens at weddings, 1.8-2% at enterprises. It is important to note that poisoning from food products purchased from supermarkets (Basket) and industrial canned food has not been recorded in recent years. Analysis of food poisoning incidents in residential areas in 70-82% cases of toxicoses, In 28-38% of cases, it was noted that it was caused by local infections, in 7.5-10% of cases by chemical factors, and in 1.87% of cases by mycotoxins. Botulism was diagnosed in 36% of the total reported poisonings, 39% of poisonings were caused by salads in 335 people.

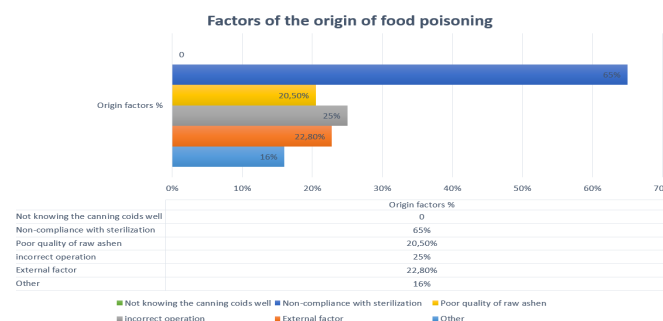
In total, 41 or 8.8% of cakes were poisoned, of which 0.7% were home-made cakes. General 80% of the poisonings were from canned foods, 213 of them, i.e. 25%, were canned tomatoes and cucumbers. In the spring months, 415 poisonings accounted for 48% of the total studied poisonings, and in the summer months, 221 poisonings were recorded, which made up 26% of the total studied poisonings. In the winter months, 219 cases of poisoning were recorded done, this reduced the overall toxicity to 25% organize. The total number of food poisoning deaths in the republic was 174 in the last 10 years, 20 in Fergana region, 16 in Namangan region, and 7 in Andijan region. If we analyze the number of victims, the highest number of victims in the republic occurred in 2004, 2006, 2009 and 2012. In Fergana region, it was in 2004, 2006, 20013. Most of the poisonings were caused by poor knowledge of canning rules, non-observance of sterilization terms, use of old spoiled vegetables and fruits in canning.

**Table-1 Cases of food poisoning registered in the Republic (2004-2013)**

No	Territories Name	2004 year			2005 year			2006 year			2007 year			2008 year			2009 year			2010 year			2011 year			2012 year			2013 year		
		number of cases	victims	those who died	number of cases	victims	those who died	number of cases	victims	those who died	number of cases	victims	those who died	number of cases	victims	those who died	number of cases	victims	those who died	number of cases	victims	those who died	number of cases	victims	those who died	number of cases	victims	those who died			
1	Andijan	2	18	2	-	-	-	2	8	-	3	46	1	2	6	-	2	7	2	1	10	-	-	-	-	2	25	2	2	7	-
2	Namangan	1	9	3	2	7	3	3	13	3	1	6	-	3	12	1	2	6	2	-	-	-	9	51	4	7	37	-	6	19	1
3	Ferghana	6	27	1	8	16	1	15	62	13	5	23	1	5	30	2	8	25	2	2	7	-	1	3	-	-	-	-	6	35	-
By republic		52	203	15	44	169	11	54	245	30	37	183	8	30	108	6	55	181	18	19	61	2	26	138	15	45	190	14	46	178	5

80% of the total poisonings were caused by canned foods, and 213 of them, i.e. 25%, were canned tomatoes and cucumbers. In the spring months, 415 poisonings accounted for 48% of the total studied poisonings, and in the summer months, 221 poisonings were recorded, which made up 26% of the total studied poisonings. In the winter months, 219 poisonings were recorded, which makes up 25% of the total poisonings.

**Figure 1.**



**Figure 1 shows the factors that cause food poisoning:** 65-70% lack of familiarity with preservation rules, 65% - non-observance of sterilization temperature, 20.5% - poor quality of raw materials, 25% - improper operation, 22.8% - external environmental factors, In 16% of cases, it is noted that other factors were the cause.

Forecast of food poisoning in the Republic of Uzbekistan until 2030. 2 different methodological approaches were used in forecasting. Forecasting using the "maximum stagnation" method. Regression equation. Parametric forecasting analysis and algorithm consists of the following: here, parametric forecasting means a variable discrete quantity with a constant discretized step. In forecasting, changes in milk production over time were expressed in values. In this case, the interval between dynamic changes in the analysis was chosen as 1 year.

A dynamic series was created based on the values of changes in food poisoning cases over the years. Its characteristic feature is that the time factor is represented instead of x, and the event is represented instead of u. The graphical representation of the dynamic range is represented by broken lines. In order to determine the main trend of the signs, it was necessary to equalize the dynamic lines, that is, to smooth the broken lines.

For this, the least squares method of dynamic series equalization was used.

$$\sum (x_i - \bar{x})^2 = \min$$

The dynamic series was multiplied by the arithmetic mean of the points represented in the natural series as follows. We

$$\bar{x} = \frac{1 + 10}{2} = 5.5$$

Years	$x_i$	The event, yes	$(x_i - \bar{x})$	$y(x_i - \bar{x})$	$(x_i - \bar{x})^2$	$y_x$
2004	1	52	-4.5	-234	20.25	46.65
2005	2	44	-3.5	-154	12.25	45.35
2006	3	54	-2.5	-135	0	44.05
2007	4	37	-1.5	-55.5	2.25	42.7
2008	5	30	-0.5	-15	0.25	41.4
2009	6	55	0.5	27.5	0.25	40.1
2010	7	19	1.5	28.5	2.25	38.9
2011	8	26	2.5	65.0	6.25	37.6
2012	9	45	3.5	157.5	12.25	36.3
2013	10	46	4.5	207.0	20.25	35.0
S	55	408	0	-108	82.5	

**Table2.** Situation of food poisoning incidents in the Republic of Uzbekistan in the next 15 years.

A more reliable idea about this is expressed in the following picture. In this case, the broken line has become a smooth line. As a result of continuing the line formed by the dynamic picture of food poisoning incidents and the normalized picture, it became possible to provide a perspective of food poisoning incidents for 2004-2030. Thus, the forecast of food poisoning incidents until 2030 showed a decrease in the amount, it was found that the average decrease in food poisoning could be 3-5 per year. Some experts believe that this forecast may not be close to the truth, we do not dispute it, because mass poisonings occur in different regions for different reasons. However, the number of casualties and deaths that occurred during the 10-year period we studied can be stabilized at this level if the sanitary hygiene measures we suggest are followed.

subtracted the deviation in the row levels from this quantity. We performed the calculations using formulas 1 and 2 below and determined the linear equality dimensions. From the equation of the distribution dynamics of food poisoning, the following expression was derived.

$$a = \frac{\sum y_i}{n} = \frac{408}{10} = 40,8,$$

$$b = \frac{\sum y(x_i - \bar{x})}{\sum (x_i - \bar{x})^2} = \frac{-108}{76.25} \approx -1.41$$

From the equation of the distribution dynamics of food poisoning, the following expression was derived. It follows from this equation in the last column of the table.

$$\bar{y}_x = 40.8 + (-1.41)(x_i - \bar{x})$$

Thus, the forecast of food poisoning incidents until 2030 showed a decrease in the amount, it was found that the average decrease in food poisoning could be 3-5 per year. Some experts believe that this forecast may not be close to the truth, we do not dispute it, because mass poisonings occur in different regions for different reasons. However, the number of casualties and deaths that occurred during the 10-year period we studied can be stabilized at this level if the sanitary hygiene measures we suggest are followed. Discussion. According to information provided by international organizations, the level of food poisoning among the population is increasing. According to the information provided by WHO, biological risk factors in the origin of food poisoning; meat and meat products -15%, milk

and milk products -8%, fish and fish products -5%, eggs -5%, cake and ice cream -15%, salad and sauces -2%, poultry-3%, mixed 10%, other poisoning was -13%. In the territory of our republic Analysis of poisonings occurred in 85% of cases at home. Food poisoning and deaths are occurring from home canned foods.

**Table 3. Forecast of food poisoning incidents in our republic in 2013-2030.**

Years	Food poisoning forecast of events
2014	39.5
2015	38.2
2016	36.9
2017	35.6
2018	34.3
2019	33.0
2020	31.7
2021	30.4
2022	29.1
2023	27.8
2024	26.5
2025	25.2
2026	23.9
2027	22.6
2028	21.3
2029	20.0
2030	18.7

**Discussion.** According to information provided by international organizations, the level of food poisoning among the population is increasing. According to the

information provided by WHO, biological risk factors in the origin of food poisoning; meat and meat products -15%, milk and milk products -8%, fish and fish products -5%, eggs -5%, cake and ice cream -15%, salad and sauces -2%, poultry-3%, mixed 10%, other poisoning was -13%. In the territory of our republic Analysis of poisonings occurred in 85% of cases at home. Food poisoning and deaths are occurring from home canned foods.

**Conclusions.** 1. Analysis of food poisoning, it is noted that 85% of poisonings occur at home, 10.2% at weddings, 1.8-2% at commercial and catering establishments 2. Poisoning was not recorded from food products purchased from modern equipped supermarkets (baskets) and industrial canned foods. 3. Taking into account that the most cases of poisoning are caused by botulism at home, the issue of banning the preparation of cans at home is raised.

4. Systematic organization of teaching conservation rules among the population.

## REFERENCES.

1. Bakhritdinov Sh.S., Zakirkhodjaev Sh.Ya., Yunusova S., Ermatova Sh.S./ Food poisoning prophylaxis In the teachings of Ibn Sino - The task of the science of hygiene today // In the collection of Ibn Sino legacy and modern medical development, Scientific and practical seminar, Termiz, 2015, 22 pages.
2. Shaikhova G.I., Tulyaganova K.A., Ermatov N.M.// Types of microbial food poisoning in the teachings of Ibn Sina and measures for their prevention // In the collection of Ibn Sina's heritage and modern medical development, Scientific and practical seminar, Termiz, 2015, 107 pages.
3. Karimov Sh.I. under the editorship. Tashkent, 2015, 365 pages

## Информация об авторах:

© Ахмадалиев Р.У.- Заведующий отделом научной работы, инноваций и подготовки педагогических кадров Ферганского медицинского института общественного здоровья

© Бахритдинов Ш.С. - доктор медицинских наук, профессор ТТА. Кафедра детской, подростковой и гигиены питания.

© Закирходжаев Ш.Я.- доктор медицинских наук, профессор кафедры внутренних болезней и пропедевтики ТТА

## Муаллиф ҳақида маълумот:

© Ahmadaliyev R.U.- Farg'ona jamoat salomatligi tibbiyot instituti ilmiy ishlar, innovatsiyalar va pedagogik kadrlar tayyorlash bo'lim boshlig'i.

© Baxritdinov SH.S.- tibbiyot fanlari doktori, professor Toshkent tibbiyot akademiyasi BO'va OG kafedrasini mudiri

© Zakirxodjayev Sh.Y. Tibbiyot fanlari doktori, professor Toshkent tibbiyot akademiyasi IKP kafedrasini mudiri.

## Information about the authors:

© Akhmadaliyev R.U. - Head of the Department of Scientific Affairs, Innovations and Pedagogical Personnel Training of Fergana Medical Institute of Public health.

© Bakhritdinov Sh.S.- Doctor of medical sciences, professor. TMA. Department of children, adolescents and food hygiene.

© Zakirkhodjaev Sh.Ya.- Doctor of Medical Sciences, Professor, Department of Internal Medicine and Propedeutics of TMA.