

O'ZBEKISTON RESPUBLIKASI

OLIY TA'LIM, FAN VA INNOVATSIYALAR VAZIRLIGI

FARG'ONA DAVLAT UNIVERSITETI

**FarDU.  
ILMIY  
XABARLAR**

1995-yildan nashr etiladi  
Yilda 6 marta chiqadi

6-2024

**НАУЧНЫЙ  
ВЕСТНИК.  
ФерГУ**

Издаётся с 1995 года  
Выходит 6 раз в год

<b>T.Y.Bakirov, N.Z.Xolmatova</b> Ehtimoliy-statistik masalalarni yechishda raqamli texnologiyalarni qo'llash imkoniyatlari.....	8
---	---

<b>A.B.Yo'Ichiev, I.R.Asqarov, K.Sh.Djamolov</b> Research on the impact of mixed feed on the development of broiler chickens.....	14
<b>Sh.Sh.Shuxratov, B.A.Askarova</b> Integratsion yondashuv asosida talabalarning transversal kompetensiyalarini rivojlantirish.....	19
<b>M.M.Sobirov</b> Yer sirtidan qaytgan quyosh nurlanish oqimini atmosferaning nurlanish maydoniga ta'siri .....	24
<b>Sh.Sh.Shuxratov, G.B.Butayeva</b> Transformatsion yondashuv asosida bo'lajak texnologik ta'lim o'qituvchilarining metodik kompetentligini rivojlantirish .....	30
<b>K.Abdulvaхидов, Ч.Ли, С.Отажонов, Н.Юнусов</b> Структура, электрофизические, оптические и магнитные свойства композитов (1-x)PbFe <sub>12</sub> O <sub>19</sub> -xPbTiO <sub>3</sub> .....	35
<b>M.M.Sobirov</b> Bir kun davomida yer sirtiga tushayotgan quyosh nurlanish oqimi energiyasini hisoblash .....	42

<b>F.B.Eshqurbonov, E.R.Safarova</b> Diglisidiltiokarbamid va melamin asosidagi ionitning sorbsiya izotermasi tadqiqoti.....	48
<b>I.R.Asqarov, M.A.Marupova, Y.X.Nazarova</b> "Asprulans" oziq- ovqat qo'shilmasining biologik faolligini o'rganish .....	54
<b>C.A.Кодиров, М.Ю.Исмоилов</b> Водопоглощение и водостойкость гидроизоляционного материала гидроизол-к.....	59
<b>F.B.Eshqurbonov, A.P.Hamidov</b> Tabiiy guliob fosforit xomashyosining kimyoviy tarkibini aniqlash usullari.....	64
<b>A.Sh.Shukurov, M.Y.Ismoilov</b> Surkov moyi kompozitsiyasining fizik-kimyoviy xususiyatlarini aniqlash usullari .....	69
<b>M.B.Xolboyeva, Z.A.Smanova, D.A.Gafurova, M.G.Yulchiyeva, M.R.O'ralova</b> Immobilangan nitrozo-r-tuzi yordamida Fe (III) ionini aniqlashning samarali va selektiv usulini ishlab chiqish .....	74
<b>M.G.Yulchiyeva, X.X.Turayev, Sh.A.Kasimov, M.B.Xolboyeva, M.J.Abduvaliyeva, N.B.Choriyeva</b> Karbamid, formaldegid va difenilkarbazon asosida sintez qilingan sorbentda Cu (II) Zn (II) va Ni (II) ionlarining sorbsiyasi va tadqiqoti .....	80
<b>Z.A.Akназарова, M.A.Aхмадалиев</b> Сравнительные характеристики химического состава водоемов чортюк и киркидон.....	86
<b>S.A.Mamatkulova, N.Sh.G'ulomova, I.R.Askarov</b> "Asyetis" biologik faol moddasining o'tkir zaharlilik darajasini aniqlash.....	90
<b>I.I.Abdujalilov, D.A.Eshkursunov, S.G.Egambergenova, A.Inxonova, D.J.Bekchanov</b> Polimer yuzasida metal oksidi nanozarrachalarini zol-gel usuli yordamida sintez qilish va ularning xossalari .....	93
<b>S.Sh.Do'saliyeva, V.U.Xo'jayev</b> <i>Allium karataviense</i> o'simligi takibidagi alkaloidlarning sifat taxlili.....	101
<b>D.Abduvokhidov, M.Niyozaliev, Z.Toshpo'latova, Kh.Toshov, Sh.Sh.Turgunboev, J.Razzokov</b> Membrane modification in the formation of channels, channel size, external conditions, and the role of mechanical factors .....	104
<b>X.N.Saminov, O.M.Nazarov</b> Anor mevasining mineral va flavonoid tarkibini o'rganish .....	110



UO‘K: 615.32

**“ASYETIS” BIOLOGIK FAOL MODDASINING O‘TKIR ZAHARLILIK DARAJASINI ANIQLASH****ОПРЕДЕЛЕНИЕ УРОВНЯ ОСТРОЙ ТОКСИЧНОСТИ БИОЛОГИЧЕСКИ АКТИВНОГО ВЕЩЕСТВА 'АСЕТИС'****DETERMINATION OF THE ACUTE TOXICITY LEVEL OF THE BIOLOGICALLY ACTIVE SUBSTANCE 'ASYETIS'**

**Mamatkulova Surayyokhan Abdusamatovna<sup>1</sup>**   
<sup>1</sup>Fergana State University, Ph.D., associate professor

**G‘ulomova Nodira Sherali qizi<sup>2</sup>**   
<sup>2</sup>Fergana Public Health Medical Institute

**Askarov Ibrahimjon Rahmonovich<sup>3</sup>**   
<sup>3</sup>Andijan State University, doctor of chemical sciences, professor

**Annotatsiya**

Ushbu maqolada O‘zbekistonning tog‘li hududlarida o‘sovchi dorivor issop va yetmak(bex) o‘simliklarining yer ustki qismlari aralashmasidan tayyorlangan “Asetis” nomli oziq ovqat qo‘shilmasining issiq qonli hayvonlar, sichqon misolida, organizmiga umumiy ta‘siri va o‘tkir zaharlilik darajasi aniqlandi. Namuna O‘zbekiston Respublikasi Fanlar Akademiyasi A.S.Sodiqov nomidagi Bioorganik kimyo institutining Biologik faol moddalar skriningi va farmakologiyasi skriningi laboratoriyasida tekshirildi.

**Аннотация**

В данной статье представлена оценка общего воздействия и уровня острого токсикоза пищевой добавки под названием "Асетис", приготовленной из надземных частей лекарственных растений, таких как иссоп и тысячелистник (бех), произрастающих в горных районах Узбекистана, с использованием мышей в качестве модели теплокровных животных. Образец был протестирован в Лаборатории скрининга биологически активных веществ и фармакологии Института биоорганической химии имени А.С. Содикова Академии наук Республики Узбекистан.

**Abstract**

This article presents the assessment of the overall effect and acute toxicity level of a food supplement named "Asyetis," prepared from the aerial parts of medicinal plants such as hyssop and yarrow (bex) growing in the mountainous regions of Uzbekistan, using mice as a model for warm-blooded animals. The sample was tested at the Laboratory of Screening of Biologically Active Substances and Pharmacology at the Bioorganic Chemistry Institute named after A.S. Sodiqov of the Academy of Sciences of the Republic of Uzbekistan.

**Kalit so‘zlar:** “Asyetis”, biologik faol modda, dorivor issop, yetmak (bex), o‘tkir zaharlilik, OECD (2002), Acute Oral Toxicity – Fixed Dose Procedure.

**Ключевые слова:** “Асетис”, биологически активное вещество, иссоп, тысячелистник (бех), острая токсичность, ОЭСР (2002), Острая пероральная токсичность – фиксированная доза.

**Key words:** "Asyetis," biologically active substance, hyssop, yarrow (bex), acute toxicity, OECD (2002), Acute Oral Toxicity – Fixed Dose Procedure.

**INTRODUCTION**

The role of medicinal plants in restoring human health is incomparable. Pharmacologically important proteins, fats, carbohydrates, alkaloids, essential oils, saponins, flavonoids and other biologically active substances are important in the preparation of medicines from the parts of

---

**KIMYO**

---

medicinal plants. Biologically active substances are natural complexes containing minerals, vitamins, nutritional fibers, plant extracts, unsaturated fatty acids, amino acids, etc. They are natural substances obtained from plants, animals or minerals, as well as chemical and sometimes they can be obtained through microbiological synthesis. To date, in modern medicine and folk medicine, microelements of biologically active substances are widely used in the treatment and prevention of diseases as part of biologically active food additives.

**MATERIALS AND METHODS**

**Theoretical part:** Medicinal hyssop and acanthopyllum plants growing in the mountainous regions of Uzbekistan are plants that have been widely used in scientific medicine and medicine for a long time. In our ongoing scientific research, when the amount of antioxidants in the mixture of the above-ground parts of these plants was checked, it was found that the highest amount of antioxidants is in the mixture in the ratio of 3:1, and using the mixture in this ratio, a nutritional supplement called "Asyetis" was created. Combining modern medicine and folk medicine, the food supplement "Asyetis" was introduced into the body of mice for the production and practice of food supplements that help in the prevention and treatment of diseases of the respiratory system from these plants. secret and acute toxicity were checked.

**Theoretical part:** Medicinal hyssop and acanthopyllum plants, which grow in the mountainous regions of Uzbekistan, are medicinal plants that have been widely used in scientific medicine and medicine for a long time. In our ongoing scientific research, when the amount of antioxidants in the mixture of the above-ground parts of these plants was checked, it was found that the highest amount of antioxidants is in the mixture in the ratio of 3:1, and using the mixture in this ratio, a nutritional supplement called "Asyetis" was created. Combining modern medicine and folk medicine, the food supplement "Asyetis" was introduced into the body of mice for the production and practice of food supplements that help in the prevention and treatment of diseases of the respiratory system from these plants. secret and acute toxicity were checked.

All conducted pharmacological tests were conducted in healthy, sexually mature mice kept in quarantine for 14 days. The sample was injected once into the stomach of mice using a special probe through the mouth at a dose of 2000 mg/kg (it was not possible to introduce more). An equal amount of purified water was injected into the animals of the control group. On the first day of the experiments in laboratory conditions, the general condition of the animals of the research and control groups was monitored every hour, as well as possible cases of tremors and death. During the next 14 days, in the vivarium, all groups were examined daily for the general condition, activity, fur coat, skin condition, rate and depth of breathing, urine excretion, body weight change, and other indicators. All the research animals were kept on the same routine diet, without restriction of food and water.

At the end of the experiment, the average lethal dose (050) and toxicity class of the examined sample were determined.

Research results obtained. On the first day of the experiment, the general condition of the animals was monitored every hour in laboratory conditions, and as indicators of their functional state, the survival rate, general condition, possible shivering and death were monitored during the experiment.

Asyetis medicinal mixture was administered to mice at the highest dose of 2000 mg/kg. 4-5 minutes after the introduction of the sample, conditions such as accelerated breathing, washing, gathering in one place were observed in mice, and this condition lasted for 1-2 hours. After 5-6 hours, the mice returned to their normal state of drinking water and eating food, and when observed for 14 days, there was no recurrence of mortality, and no effects of acute poisoning were observed.

Animals in the experimental groups did not show a decrease in their body weight at the dose of 2000 mg/kg compared to the control group. Some body mass gain was found to be slow compared to control mice. Based on the obtained results, we can conclude that the average lethal dose of Asyetis mixture when administered to mice once was found to be higher than LD<sub>50</sub>>2000 mg/kg. The obtained results are presented in the table.

**Table 1**

**Acute poisoning with intragastric administration of Asyetis food additive indicators (n=5)**

	Animle type and sex	Dose Mg/kg/ml	Number of animals and dead animals in the group	Avarage animal age (g) (1day)	Avarage animal age (g) (7 day)	Avarage animal age (g) (14 day)	LD <sub>50</sub> With confidence interval
Asyetis	Mouse man	000	5/0	21	21	22	>2000 mg/kg
Control	Mouse man	0,5ml	5/0	21	23	25	-

Thus, when the acute toxicity of the plant mixture of the dietary supplement "Asyetis" was studied in mice, it was found that this sample belongs to the class of V-chemicals, which are almost non-toxic compounds, and after a single injection into the stomach, the average lethal dose - LD<sub>50</sub> was >2000 mg/kg.

### CONCLUSION

The general effect and acute toxicity of "Asyetis" food additive on the body of mice were investigated. According to the results of the analysis, the study of acute toxicity showed that the compounds belong to class V of the OECD classification - the class of almost non-toxic compounds of chemical substances when a single mixture of "Asyetis" food additive was introduced into the stomach of mice. and - LD<sub>50</sub> was found to be >2000 mg/kg. Based on the results, it should be noted that the food supplement "Asyetis" has expectorant properties in diseases of the respiratory system.

### REFERENCES

1. Guide to the conduct of clinical research. Chast pervaya / Pod ed. A.N. Mironova. M.: Grif i K, 2012. - 944 p.
2. OECD (2001) Guideline for testing of chemicals. Acute Oral Toxicity - Fixed Dose Procedure No. 420 Governing document OESR Test No. 420 "Acute Oral Toxicity - Fixed Dose Procedure".
3. Abdujabborova, C. (2023). STYPHONOLOBIUM JAPONICUM (SOFORA JAPONICA) THE CHEMICAL COMPOSITION AND APPLICATION IN MEDICINE <https://sirpublishers.org/index.php/jomap/article/view/271> [https://scholar.google.com/citations?view\\_op=view\\_citation&hl=ru&user=hKvs\\_GgAAAAJ&citation\\_for\\_view=hKvs\\_GgAAAAJ:eQOLeE2rZwMC](https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=hKvs_GgAAAAJ&citation_for_view=hKvs_GgAAAAJ:eQOLeE2rZwMC)
4. Gulomova, N. (2023). КОЛЮЧЕЛИСТНИК, ТУРКЕСТАНСКИЙ МЫЛЬНЫЙ КОРЕНЬ: ХИМИЧЕСКИЙ СОСТАВ И ПРИМЕНЕНИЕ В МЕДИЦИНЕ. Евразийский журнал медицинских и естественных наук, 3(12), 178–183. извлечено от <https://in-academy.uz/index.php/EJMNS/article/view/25175> DOI: <https://doi.org/10.5281/zenodo.10437434>
5. Askarov, I. R., & Gulomova, N. S. (2023). Chemical Composition of Sambucus Nigra and its role in folk medicine. International Bulletin of medical sciences and clinical research (T. 3, Выпуск 12, сс. 16–20). Zenodo. <https://doi.org/10.5281/zenodo.10361541>
6. Jumanova, B. (2023). Chemical Composition of the Marmarak medicinal plant (Salvia officinalis) and use in people's medicine. В academic research in modern science (T. 2, Выпуск 26, сс. 158–162). Zenodo. <https://doi.org/10.5281/zenodo.1038941>