



**TIBBIYOT OLIY TA'LIM MUASSASALARIDA "HELICHRYSUM"  
TURKUMI O'SIMLIKLARINING BIOFAOL MODDALARINI  
O'RGANISHDA INTERAKTIV METODLARNING AHAMIYATI**

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**Annotatsiya.** *Mazkur maqolada tibbiyot oliy ta'lim muassasalarida bioorganik kimyo fanini o'qitishda O'zbekiston florasining endemik turlari hisoblangan Helichrysum nuratavicum va Helichrysum mussae o'simliklarining kimyoviy tarkibi, xususan, terpenoidlar va fenol birikmalarini o'rganishning nazariy va amaliy masalalari yoritilgan. Ta'lim jarayonida talabalarning intellektual salohiyatini oshirish maqsadida didaktik o'yinli texnologiyalardan foydalanish metodikasi bayon etilgan.*

**Kalit so'zlar:** *Helichrysum, terpenoidlar, fenol birikmalar, didaktik o'yinlar, "Neuroo'yin", "Raketa va meteoritlar", bioorganik kimyo.*

**Аннотация.** *В данной статье освещены теоретические и практические вопросы изучения химического состава, в частности терпеноидов и фенольных соединений, эндемичных видов флоры Узбекистана — Helichrysum nuratavicum и Helichrysum mussae при преподавании биоорганической химии в медицинских высших учебных заведениях. Изложена методика использования дидактических игровых технологий с целью повышения интеллектуального потенциала студентов в образовательном процессе.*

**Ключевые слова:** *Helichrysum, терпеноиды, фенольные соединения, дидактические игры, «Нейроигра», «Ракеты и метеориты», биоорганическая химия.*

**Abstract.** *This article covers theoretical and practical issues of studying the chemical composition, specifically terpenoids and phenolic compounds, of Helichrysum nuratavicum and Helichrysum mussae—endemic species of the flora of Uzbekistan—within the framework of teaching bioorganic chemistry at medical higher educational institutions. The methodology of utilizing didactic game technologies is described with the aim of enhancing the intellectual potential of students during the educational process.*

**Keywords:** *Helichrysum, terpenoids, phenolic compounds, didactic games, "Neurogame", "Rockets and meteorites", bioorganic chemistry.*





Bugungi kunda ta'lim tizimidagi eng dolzarb vazifalardan biri yangicha tafakkur va ijodiy fikrlashga ega barkamol avlodni tarbiyalashdir. Tibbiyot oliy ta'limida kimyo fanini o'qitishda talabalarning qiziqishlarini shakllantirishda zamonaviy ta'lim texnologiyalaridan foydalanish muhim ahamiyatga ega. Ayniqsa, o'simliklar dunyosidagi biofaol moddalarni o'rganishda nazariy bilimlarni o'yin faoliyati bilan uyg'unlashtirish dars samaradorligini kafolatlaydi.

Helichrysum (Bo'znoch) turkumi o'simliklari tarkibida dori-darmon ishlab chiqarish uchun muhim bo'lgan terpenoidlar va fenol birikmalari mavjud. Tadqiqot obyekti sifatida tanlangan *H. nuratavicum* va *H. mussae* turlari o'ziga xos kimyoviy profilga ega:

Terpenoidlar: Bu birikmalar o'simliklarning efir moylari asosini tashkil etib, ularning tuzilishi izopren zanjirlaridan iborat. Tibbiyotda ular antiseptik va spazmolitik vosita sifatida o'rganiladi.

Fenol birikmalar: Flavonoidlar va fenolkislotalar bo'lib, ular kuchli antioksidant xususiyatga ega.

Dars mashg'ulotlarida ushbu murakkab mavzuni o'zlashtirish uchun quyidagi didaktik tartibga rioya qilish tavsiya etiladi:

Mashg'ulotlar kundalik hayotdagi tibbiy muammolarga (masalan, o'simlik asosidagi dorilar) bag'ishlanishi;

O'yin tuzilishi mantiqiy ketma-ketlikda bo'lishi;

Didaktik tamoyillarga amal qilingan holda eng kam vaqt sarflanishiga erishish.

**METODIKA: DIDAKTIK O'YINLARNI QO'LLASH**

1. "Neyroo'yin" (Enerjajzer bosqichi):

Mashg'ulot boshida talabalar diqqatini jamlash uchun "Neyroo'yin" tashkil qilinadi. Bu o'yinda talaba bir vaqtning o'zida ikkita harakatni bajarishi orqali miyaning diqqat va koordinatsiyasini faollashtiradi. Bu usul mantiqiy rivojlanish uchun foydali bo'lib, darsning keyingi bosqichiga zamin tayyorlaydi.

2. "Raketa va meteoritlar" (Mustahkamlash bosqichi):

Ushbu o'yinni o'simliklar kimyosini o'rganishda qo'llash mumkin.

Raketalar: Talabalar yoki guruhlar.

Meteoritlar: Orqasiga topshiriq yozilgan kartochkalar. Masalan, meteoritda quyidagi topshiriq bo'lishi mumkin: "*H. mussae* o'simligidan olinadigan efir moyining asosiy komponentini ayting". Topshiriqni bajargan talaba (raketa) yo'lida davom etadi.

O'simliklar kimyosini, xususan, *Helichrysum* turkumi birikmalarini o'rganishda didaktik o'yinlardan foydalanish talabalarning darslik bilan ishlash, muloqot madaniyati va har xil vaziyatlarni tahlil qilib, to'g'ri xulosa chiqarish qobiliyatini rivojlantiradi. Bu esa kelajakda shifokorlar uchun zarur bo'lgan mustaqil tahlil ko'nikmasini shakllantiradi.

**Foydalanilgan adabiyotlar.**

1. Kuramboyeovich, Kuryazov Akbar; Davronovna, Abdullayeva Hafiza Chemical composition and polymerization process of composite fillings(restorative materials)-american journal of applied medical science 2025/12/
2. Abdullayeva, Xafiza; Davletov, Mirzohid; Ahmedov, Jo'shqinbek Xirurgik amaliyotlarda ishlatiladigan antiseptik va dizenfeksiyalovchi moddalar:Kimyoviy tabiati va ta'sir mexanizmi-south aral sea medical journal 2025/11/24 267-271
3. Sh.B.Formanova,B.A.Jurayeva,X.D.AbdullayevaZ.X.Xamroquova,G.T.Ikromov-"Anorganik kimyo". DarslikGuvoxnoma №197267
4. X.D Abdullayeva -Development of contextual tasks in teaching chemistry to students of a medical university- International Conference on Advance Research in Humanities, Sciences and Education Hosted from Rome,Italy <https://conferencea.one> January 30th, 2025
5. X.D Abdullayeva "The importance of modern lesson types in teaching chemistry at medical higher education institutions" International scientific journal Science shine 4- son, 2.02.2025. b-276-282),
6. Abdullayeva Xafiza Davronovna,Atadjanova Zamira,Ibodullayeva Muqaddas Olimboyevna -"Blended and digital teaching strategies for chemistry in medical education The multidisciplinary journal of sciens and technolog 21.04.2025
- 7.Khasanov Sh.B., Khudoyberganov O.I., Karimova M.E Batirova D.G'Electronic journal of actual problems of modern science, education and training. – 2022. – № 8 (August). – P. 64–73. – ISSN 2181-9750. – URL: <http://khorezmscience.uz>
- 8.K Hasanov Sh.B., Xudoyberganov O.I,Karimova M.E ketorolakning monoetanolamin bilan molekulyar kompleks birikmasi sintezi - International Journal of Science and Technology. – 2024. – Vol. 1, No. 24 (October). – P. 94–103. – ISSN 3030-3443.
- 9.Khudoyberganov O.I.,Karimova M.E Synthesis and investigation of the antibacterial activity of mixed-ligand coordination compounds of cobalt(II) ion with ketorolac -Science and Innovation International Scientific Journal. – 2025. – Vol. 4, No. 9 (September). – P. 10–18. – ISSN 2181-3337. – DOI: 10.5281/zenodo.17108415
10. Khudoyberganov O.I.,Karimova M.E Synthesis and analysis of the coordination compound of Zn(II) ion with ketorolac- Science and Innovation International Scientific Journal. – 2025. – Vol. 4, No. 9 (September). – P. 4–9. – ISSN 2181-3337. – DOI: 10.5281/zenodo.17108298
- 11 Hasanov Sh.B., Xudoyberganov O.I,Karimova M.E Cu(II) ionining ketorolak bilan kompleks birikmalari sintezi va antibakterial faolligi- Qo'qon davlat pedagogika instituti ilmiy xabarlar. – 2025. – № 6. – B. 41–49. – (OAK toifasidagi jurnal). – URL: <https://journal.kspi.uz>.



12. Karimova M.E. Ismailova Sh.A., Xudoyberganov O.I., Khasanov Sh.B. Synthesis and study of the coordination compound of zinc nitrate with ketorolac- Electronic journal of actual problems of modern science, education and training. – 2025. – № 7 (July). – P. 37–43. – ISSN 2181-9750. – URL: <http://18.khorezmscience.uz>

13. Ибодуллаева М.О. Атаджанова З.Ю.- Conductometric Titration of Acids in Mixed and Non-Aqueous Solutions- Eurasian Journal of Engineering and Technology [www.geniusjournals.org](http://www.geniusjournals.org)

Volume 7 | June, 2022 ISSN: 2795-7640

14. Atamuratova N.R, Atadjanova Z.Y, Ibodullayeva M.O POLIMER VA GETEROSIKLIK BIRIKMALAR , ULARNING FOYDASI VA DORI SIFATIDA QO'LLANILISHI- QISHLOQ XO'JALIGI VA GEOGRAFIYA FANLARI ILMIY JURNALI 10 OKTYABR / 2024 YIL / 4 – SON 49-55 betlar

15. Палванов Н.С. Атаджанова З.Ю. Ибодуллаева М. О. Электрометрическое определение бинарных смесей дикарбоновых кислот в смешанных и неводных растворах Методы науки» Научно-практический журнал № 1, январь 2019г.

ISSN 2541-8041

16. Атаджанова З.Ю. Ибодуллаева М. О “Ферментларнинг иммобилизация килишда полисахаридларнинг ахамияти” ЭПИДЕМИЯ ШАРОИТИДА ЗАМОНАВИЙ ТИББИЁТНИНГ ДОЛЗАРБ МУАММОЛАРИ” Республика онлайн-амалий конференция материаллари. 15 апрель 2021 йил. Термез-2021 459

17. Алимова Махлиё Махмуд кизи Атаджанова Замира Юсуповна Ибодуллаева Мукаддас Олимбоевна РОЛЬ ВИТАМИНА D ПРИ ЭНДОКРИННОМ БЕСПЛОДИИ У ЖЕНЩИН, ПРОЖИВАЮЩИХ В ЗОНЕ ПРИАРАЛЬЯ- INTERNATIONAL CONFERENCE ON MEDICINE, SCIENCE, AND EDUCATION. -Volume 02, Issue 04, 2025 27 INTERNATIONAL, 2025-yil. Volume 02, Issue 04, 2025 27 INTERNATIONAL

18. Ш.Б.Хужаниёзов, З.Ю.Атажанова, М.О.Ибодуллаева ПОЛУЧЕНИЯ ЭВГЕНОЛА В ПРИСУТСТВИИ МАЛЫХ КОЛИЧЕСТВ  $FeCl_3 \cdot 6H_2O$ -

The Multidisciplinary journal of science and technology. -ISSN: 2582-4686 SJIF 2021-3.261, 2022-2.889, 2023- 5.384, 2024-6.875 ResearchBib IF: 9.948 / 2024, 2025-yil. VOLUME-5, ISSUE-4