



PROCEEDINGS OF UZBEKISTAN-CHINA INTERNATIONAL SYMPOSIUM ON "CURRENT ISSUES IN THE CULTIVATION AND UTILIZATION OF MEDICINAL PLANTS"



Tashkent, June 18–19, 2026

<https://doi.org/10.5281/zenodo.21356314>

PROGRAM

OF THE UZBEKISTAN-CHINA INTERNATIONAL SYMPOSIUM ON "CURRENT ISSUES IN THE CULTIVATION AND UTILIZATION OF MEDICINAL PLANTS"

ABOUT THE SYMPOSIUM

The Uzbekistan–China International Symposium on "Current Issues in the Cultivation and Utilization of Medicinal Plants" serves as a prestigious integration platform for establishing experience exchange between various scientific schools and young scientists, developing fundamental and practical solutions to existing systemic problems, and forming new joint transboundary scientific projects.

The main objective of the international symposium is to create a high-tech international platform that serves to elevate the integration between leading scientists, researchers, and brand manufacturers (the business sector) of Uzbekistan and the People's Republic of China in the fields of medicinal plant cultivation, advanced raw material processing, phytochemistry, biotechnology, agrotechnology, food safety, traditional medicine, and folk medicine to a qualitatively new level.

The priority conceptual task of the symposium is to systematically form and scientifically substantiate the vertical integration in the medicinal plant phyto-industry from raw material cultivation to the production of ready high-value products, specifically the complete value chain principle: "Seed-to-Market".

SYMPOSIUM ORGANIZERS:

- Ministry of Higher Education, Science and Innovations of the Republic of Uzbekistan;
- "Uzkimyosanoat" Joint-Stock Company (Tashkent, Uzbekistan);
- Tashkent Institute of Chemical Technology (Tashkent, Uzbekistan);
- Scientific and Production Center for the Cultivation and Processing of Medicinal Plants (Tashkent, Uzbekistan);
- Shandong University of Technology (Zibo, Shandong, China);
- Qilu University of Technology (Shandong Academy of Sciences), Faculty of Chemistry and Pharmacy, Shandong Analysis and Test Center (Jinan, Shandong, China);
- Institute of Ecology, Shandong Academy of Sciences (Qilu University of Technology, Jinan, China);
- Nanjing Agricultural University (College of Plant Protection, Nanjing, China);
- Nankai University (School of Life Sciences, Tianjin, China);
- Northwest A&F University (College of Natural Resources and Environment, Yangling, China);
- Tashkent State Agrarian University (Tashkent, Uzbekistan);
- Uzbek–Chinese Joint Laboratory of "Soil Eco Biotechnology" (Uzbekistan- China).

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- ✓ Committee on Science, Education and Health of the Senate of the Oliy Majlis of the Republic of Uzbekistan;
- ✓ Academy of Sciences of the Republic of Uzbekistan;
- ✓ Uzbekistan Food Industry Association;
- ✓ "Uzyogmoysanoat" Association;
- ✓ The association of traditional medicine of Uzbekistan;
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- ✓ "Health Line" LLC;

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- ✓ Dresden University of Technology (Germany);
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- ✓ "Republican Collection of Microorganisms" LLP (Kazakhstan);
- ✓ Integral University Lucknow, India;
- ✓ Óbuda University, Hungary;
- ✓ Jiangsu University (China).

- ✓ “Zuma Pharma” LLC;
- ✓ “Laxisam Pharmaceuticals” LLC;
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31. **Aslan Temirkhanov** – Scientific Secretary, Republican Collection of Microorganisms (Kazakhstan);
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33. **Farooqui Alvina** - Head Department of Bioengineering, Integral University, professor (India);
34. **Mukesh Kumar Awasthi** - Associate Professor, Northwest A&F University (China);
35. **Viktor Mechtcherine** – Director of the Institute of Construction Materials, Technische Universität Dresden (Germany).

**Organizing Committee Members
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Scientific Sessions

Session 1. Biodiversity, Gene Pool, and Modern Agrotechnologies of Medicinal Plants

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**Session 2. Phytochemistry, Biotransformation, and Advanced Processing of Medicinal
Plant Raw Materials**

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**Session 3. Current Issues in the Utilization of Medicinal Plants in Pharmacology, Medicine,
and the Food Industry**

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Session 4. Economics of Phyto-Industry, Marketing, and Prospects for International Cooperation

Chair: Professor **Jin-Hua Xiao** – Professor of Nankai University (China);

Co-Chair: Professor **S.S.Ravshanov** – Professor of the Department of Biotechnology, TICT (Uzbekistan);

Secretary: **F.B.Abdullayeva** – Senior Lecturer at the Department of Biotechnology, TICT (Uzbekistan);

Symposium Moderators

Khayrulla Pulatov - Professor of the Department of Industrial Ecology and Green Technologies, TICT.

Shakhnozakhon Salijonova - Associate Professor of the Department of Technology of Food and Perfumery-Cosmetic Products, DSc, TICT.

SYMPOSIUM FORMAT

The symposium will feature a diverse range of formats, including an opening ceremony followed by plenary, keynote, and invited lectures. Parallel sessions will host oral presentations, while poster presentations will be exhibited throughout the workshop. The symposium will be conducted in a hybrid (both offline and online) format. **Link for online participation:** <https://voovmeeting.com/dm/s4yb4fw9VBHJ> #Tencent Meeting : 859-0871-0474

Official Languages

Uzbek and English is used as the official language at the symposium.

Important dates

18/06/2026 Welcome + Opening ceremony + Keynote lectures + Parallel sessions
19/06/2026 Keynote lectures + Parallel sessions + Closing ceremony + *Excursion in Tashkent
(*optional and pay fee*)

***Inquiry or cancellation should be sent to:** *e-mail:* kdtinfo659@gmail.com; *Telegram:* [@KDT0803](https://www.telegram.com/@KDT0803)

Session 2.
Phytochemistry,
Biotransformation, and

Advanced Processing of Medicinal Plant Raw Materials

DEVELOPMENT AND VALIDATION OF METHOD TO QUANTIFY PIPERINE IN BLACK PEPPER SEED

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Place of study: Department of Chemistry, Central Instrumentation Facility (CIF),
Integral Centre of Excellence for Interdisciplinary Research (ICEIR), Integral University
Lucknow-226026, Uttar Pradesh, India

Abstract. This study describes the development and validation of a rapid, highly sensitive and selective liquid chromatography-tandem mass spectrometry (LC-MS/MS) method for the precise isolation and quantification of piperine from black pepper (*Piper nigrum* L.) seeds. The extraction process was optimized by subjecting 10g of finely

	farmakognostik xususiyatlari hamda amaliy ahamiyati	
82.	Rejamurodova L., Yo'ldasheva N. Farmakologiyaning dolzarb masalalari	
83.	Xodjayeva N.J., Nurniyoziv A.A., Nurmuxammadov A. Farmakologiya, tibbiyot va oziq-ovqat sanoatida limon (<i>Citrus limon L.</i>)dan foydalanish	
84.	Aminova M.N. Farmakologiya, tibbiyot va oziq-ovqat sanoatida dorivor o'simliklardan foydalanishning dolzarb masalalari (Rovoch misolida)	
85.	Shomuratova S.N., Yuldasheva N.K., Nishanbayev S.Z. Fabaceae oilasiga mansub ayrim o'simliklar tarkibidagi tokoferollarning miqdorini uhp lc usulida aniqlash	
86.	Eshpulatov S.E., Sattarov A.S., Tursunmuratov Sh.Sh. Evaluation of the biosynthesis of secondary metabolites (iridoid glycosides or flavonoids) in <i>Plantago major l. Leaves growing in vitro</i> conditions	
87.	Mamarajabov D.M., Mirzaqulov X.Ch., Yorbobayev R.Ch. Dunyo miqyosida magniy qotishmalarining ishlatilish sohalari.	
88.	Xolov J.I., Safarov T.T. Dorivor yalpiz o'simligining ekologik talablari va dorivorlik xususiyatlari	
89.	Tuxtaboyeva F.M., Sulaymonova N. Dorivor qoqio't (<i>Taraxacum officinale L.</i>) o'simligining biologik faol moddalari	
90.	Umurkulova F.S., Abdusamatova M.A. Dorivor o'simliklar ekstraktlari va sut kislotasi bakteriyalarning sinergik ta'sirini o'rganish	
91.	Umurkulova F.S., Abdusamatova M.A. Dorivor o'simliklar asosida olingan biofaol birikmalarning probiotik mikroorganizmlar o'sishiga ta'sirini o'rganish	
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92.	Anam Saleem., Abdul Rahman Khan., Nizamul Haque., Abbas Ali Mahdi., Wahajul Haq., Jamal Akhtar Ansari. Development and validation of method to quantify piperine in black pepper seed.	
93.	Mohd Faiyyaz., Iqbal Azad., Abdul Rahman khan. Isatin-derived compounds containing anticancer therapeutics	
94.	Mantash Mirza., Wahajul Haq., Abdul Rahman Khan., Khujamshukurov N.A., Jamal Akhtar Ansari. Natural product inspired novel flavones: multi-target agents for complex diseases.	
95.	Normatov A.M., Niyozov X.N., Mamatqulova M.M. Anor urug'i yog'ining fitokimyoviy tarkibi va biologik faol komponentlarini GC-FID usulida tadqiq etish	
96.	Rahmonova M.D., Otajonov A.Sh., Nazarov G'.A. Dorivor gulxayri (<i>Althaea officinalis</i>) o'simligi fitokimyosi, biotransformatsiyasi va xomashyosidan shifobaxsh damlama tayyorlash	
97.	Baxtiyorova X.M., Normatov A.M. Kovul (<i>Capparis Spinosa L</i>) o'simligi mevasining kimyoviy tarkibi va tibbiyotda qo'llanilishi.	

98.	Faxriddinova D.J., Nurmuxamedova V.Z., Isaqova Sh.X. Soyadan olingan mahsulotlarning antimikrob faolligini o'rganish.	
99.	Duskobilova M.S. <i>Origanum vulgare l.</i> o'simligi tarkibidagi fenolik birikmalar va flavonoidlarning biokimyoviy hamda biologik faolligi	
100.	Zakirova M., Gulmatova Sh., Karimov H. Dorivor o'simlik <i>Glycyrrhiza glabra</i> ildizi ekstraktlarining mikrobiologik faolligini tadqiq qilish.	
101.	Jo'rayev R.N., Nazarov G'.A. <i>Maclura pomifera</i> mevasi tarkibidagi biologik faol qo'shimchani ajratib olish	
102.	Serkaboyeva M., Otajonov A.Sh., Maxmudova M.M. Sholi (<i>Oryza sativa</i>) qipig'idan biologik faol moddalar (steroidlar) ajratib olish usullari	
103.	Shahbaz Israr., Ali Ghazanfer. Phytochemicals in the Fight Against Antimicrobial Resistance: Mechanisms, Clinical Potential, and Future Perspectives.	
104.	Narzullayeva G.O., Niyozov X.N., Nazarov G'.A. Zanjabil ildiz mevasidan zingeron tabiiy fenol birikma ajratib olish hamda xalq tabobatida ahamiyati.	
105.	Zahid Ali., Sabin Saurav Pokharel., Khujamshukurov N.A., Fajun Chen. Effects of Foliar Spraying of SA and GA on Growth, Development, Reproduction and Population Dynamics of Semiaphis heraclei Fed on Cnidium monnieri and Daucus carota.	
106.	Mohd Akil., Iqbal Azad., Abdul Rahman Khan., Naseem Ahmad. Synthesis and in silico Analysis of 4,5-dihydro-1H-pyrazole derivative	
107.	Bakeyev R., Qo'shiyev H.H. <i>Lagochilus inebrians bunge</i> ning dorivor xususiyatlari va in vitro mikroklonal ko'paytirish istiqbollari.	
108.	Sanoyev A.I., Zaripova S.A., Xalilov R.M., Sadikov A.Z., Sagdullayev Sh.Sh. <i>Glycyrrhiza glabra l.</i> shrotidan glabridin va flavonoidlarni ajratib olishda turli ekstraksiya usullarini qiyosiy o'rganish	
109.	Курбанова Э.Р., Пирмухамедова С.А., Агзамова М.А. Влияние предпосевной обработки семян циклоартановыми гликозидами на всхожесть и рост хлопчатника.	
110.	Omanova U.M., Agzamova M.A. <i>Oxytropis macrodonta</i> ning yer ustki qismidagi pinitol.	
111.	Абдуллаева А.М., Кодиралиева Ф.А., Сиддикова А.А., Маликова М.Х. Полисахариды трёх видов растений рода <i>Salvia</i> .	
112.	Xushvaqtov J.G'. Abu jahl tarvuzi (<i>Citrullus colocynthis</i>)ning shifobaxsh xususiyatlari va undan foydalanish istiqbollari	
113.	To'lakov N.Q., Azimova D.U., Golden delicious olma navi po'stlog'idagi fenolli birikmalarning miqdoriy tahlili	
114.	Raximov D.P., Xu Jing., Wei Tao., Calvo Gomes Octavio., Abduraximov A.A. Ot yog'ini nanoemulsiyalar olishda qo'llashdan oldin uning tarkibini identifikatsiyalash, fizik-kimyoviy tahlil qilish	

absence of standardized dosage guidelines raise concerns regarding safety and therapeutic effectiveness. Potential herb–drug interactions and adverse effects further complicate their clinical use. Additional challenges include the loss of medicinal plant biodiversity caused by overexploitation, habitat degradation, and climate change, as well as regulatory disparities that impede global commercialization and acceptance. Emerging technologies such as biotechnology, metabolomics, genomics, artificial intelligence, and precision agriculture offer innovative approaches for improving plant authentication, quality assurance, sustainable cultivation, and the discovery of novel therapeutic compounds. This study highlights the current challenges associated with medicinal plants and discusses recent technological advancements and future perspectives for their safe, effective, and sustainable integration into modern pharmacology and healthcare systems.

Keywords: Medicinal Plants, Pharmacology, Herbal Medicine, Quality Control, Drug Discovery, Standardization, Herb–Drug Interactions, Biodiversity Conservation.

CU-TCCP METAL–ORGANIC FRAMEWORK AS A SELECTIVE AND RECYCLABLE SENSOR FOR ACETONE DETECTION

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Metal–organic frameworks (MOFs) have emerged as versatile porous materials with tunable structures and functionalities for chemical sensing applications. The present study deal with a copper-based MOF, Cu-TCCP, synthesized using 1,2,4,5-tetrakis (4-carboxyphenyl) benzene (TCCP) as an organic linker, is investigated for the selective sensing of acetone. Acetone, a volatile organic compound (VOC), is of great concern due to its role as an environmental pollutant and a biomarker in medical diagnostics, particularly for diabetes monitoring. The Cu-TCCP framework exhibits a highly ordered porous structure with abundant Lewis acid sites, facilitating strong host–guest interactions with the carbonyl functional group of acetone. Structural stability, large surface area, and uniform pore channels contribute to rapid adsorption and signal response. Spectroscopic and adsorption studies confirm that Cu-TCCP demonstrates excellent selectivity toward acetone. The sensing mechanism is attributed to synergistic π – π stacking, hydrogen bonding, and Cu–O coordination, leading to detectable changes in CV curve. Furthermore, the Cu-MOF shows good recyclability and stability under repeated sensing cycles, highlighting its potential as a reusable sensor platform. These findings suggest that Cu-TCCP can serve as an efficient MOF-based sensor for real-time acetone monitoring, with promising applications in environmental remediation, industrial safety, and non-invasive medical diagnostics.

Keywords: Cu-TCCP, metal–organic framework, acetone sensing, volatile organic compounds, photoluminescence, environmental monitoring, medical diagnostics

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CO-CULTURE OF BURKHOLDERIA VIETNAMIENSIS B418 AND TRICHODERMA HARZIANUM T11-W IMPROVED THE PRODUCTION OF NEMATICIDAL SECONDARY METABOLITES AGAINST ROOT-KNOT NEMATODES IN TOMATO

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² China–Australia Joint Laboratory for Soil Ecological Health and Remediation, Ecology Institute, Qilu University of Technology (Shandong Academy of Sciences), Jinan 250103, PR China

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Abstract. Root-knot nematodes (RKN; *Meloidogyne* spp.) are widely distributed endoparasites that severely damage myriad crops and vegetables. This study aimed to evaluate the nematicidal effect of secondary metabolites (SMs) from the co-culture of *Burkholderia vietnamiensis* B418 and *Trichoderma harzianum* T11-W (B+T co-culture) against RKN. The *in vitro* inhibition efficiency of fermentation filtrate of B+T co-culture achieved 93.79% on nematode eggs and caused eggshell rupture within 24 h. The fermentation broth of B+T co-culture exhibited a considerable control effect of 73.45% against RKN infestation on tomato in pot experiment, outperforming B418 (51.31%) and T11-W (42.89%) mono-cultures. Additionally, B+T co-culture treatment significantly reduced root gall incidence, promoted root development, elevated antioxidative enzyme activities in leaves and roots, and increased leaves chlorophyll content. Ultra-high performance liquid chromatography-tandem mass spectrometry (UHPLC-MS/MS) analysis identified 795 and 478 metabolites in positive and negative ion modes, respectively. Metabolomic profiles revealed nematicidal and growth-promoting SMs in B+T co-culture, including 3-[(4-hydroxyphenyl)methyl]-octahydropyrrolo[1,2-a]pyrazine-1,4-dione (cyclo(L-Pro-L-Tyr)), 3-(propan-2-yl)-octahydropyrrolo[1,2-a]pyrazine-1,4-dione (cyclo(L-Pro-L-Val)), 3-(2-methylpropyl)-octahydropyrrolo[1,2-a]pyrazine-1,4-dione (cyclo(D-Leu-L-Pro)), indole-3-acrylic acid (IAA), indole-2-carboxylic acid (ICA), bafilomycin B1, norfloxacin, p-hydroxybenzaldehyde (PHBA), styrene, 4-methylphenol, and organic acids. The up-regulated accumulation of these