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English

Work experience

Institution Research Institute of Biology

Period of time 2024 till now

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Period of time 2023 - 2024

Rank/degree Junior Researcher

Publications

Article

Impact of Nanofertilizers for the Mitigation of Multiple Environmental Stresses

Abhishek Singh, Sapna Rawat, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina,

Abdel Rahman Mohammad Al Tawaha, Ashi Varshney

Nanofertilizers for Sustainable Agroecosystems 2024 431-454

Article

Green Synthesis of Nanofertilizers and Their Application for Crop Production

Abhishek Singh, Ragini Sharma, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina,

Abdel Rahman Mohammad Al Tawaha, Ashi Varshney

Nanofertilizers for Sustainable Agroecosystems 2024 205-231

Article

Impact of Salinity Stress and Zinc Oxide Nanoparticles on Macro and Micronutrient

Assimilation: Unraveling the Link between Environmental Factors and Nutrient Uptake

Abhishek Singh, Rakesh Singh Sengar, Vishnu D. Rajput, Uday Pratap Shahi, Abdul Latief Al-Ghzawi,

Karen Ghazaryan, Tatiana Minkina, Abdel Rahman Mohammad Al Tawaha, Omar Mahmoud Al Zoubi,

Talaat Habeeb

Journal of Ecological Engineering 2024 1-9

Article

Advancing Agricultural Resilience in Ararat Plain, Armenia: Utilizing Biogenic Nanoparticles and Biochar under Saline Environments to Optimize Food Security and Foster European Trade

Abhishek Singh, Gohar Margaryan, Anna Harutyunyan, Hasmik S. Movsesyan, Hrant Khachatryan, Vishnu D. Rajput, Tatiana Minkina, Athanasios Alexiou, Dimitrios Petropoulos, Athanasios Kriemadis, Hassan El-Ramady, Karen Ghazaryan
Egyptian Journal of Soil Science 2024 459-483

Article

Zinc Oxide Nanoparticles Influence on Plant Tolerance to Salinity Stress: Insights into Physiological, Biochemical, and Molecular Responses

Abhishek Singh, Vishnu D. Rajput, Shivani Lalotra, Shreni Agrawal, Karen Ghazaryan, Jagpreet Singh, Tatiana Minkina, Priyadarshani Rajput, Saglara Mandzhieva, Athanasios Alexiou
Environmental Geochemistry and Health 2024 148

Article

Effects of environmental metal and metalloid pollutants on plants and human health: exploring nano-remediation approach

Priyadarshani Rajput, Abhishek Singh, Shreni Agrawal, Karen Ghazaryan, Vishnu D. Rajput, Hasmik Movsesyan, Saglara Mandzhieva, Tatiana Minkina, Athanasios Alexiou
Stress Biology 2024 1-25

Article

Nanotechnology applications for enhanced crop growth and yield. Chapter 4

Sapna Rawat, Abhishek Singh, Vishnu D. Rajput, Karen Ghazaryan, Tatiana M. Minkina, Abdel Rahman Mohammad Al-Tawaha, Athanasios T. Alexiou, Priyadarshani Rajput
Sustainable Agriculture: Nanotechnology and Biotechnology for Crop Production and Protection 2024 53-68

Article

Nanobiotechnology combined approaches for sustainable agriculture. Chapter 1

Vishnu D. Rajput, Abhishek Singh, Shivani Lalotra, Karen Ghazaryan, Hasmik S. Movsesyan, Tatiana Minkina, Rahman Mohammad Al-Tawaha, Athanasios T. Alexiou, Priyadarshani Rajput
Sustainable Agriculture: Nanotechnology and Biotechnology for Crop Production and Protection 2024 1-16

Article

Impact of nano-enzyme and nanomics for sustainable agriculture: Current status and future prospective

Shivangi Singh, Omkar Singh, Sakshi Singh, Abhishek Singh, Vishnu D. Rajput, Karen Ghazaryan, Vaishali Singh, Athanasios Alexiou, Abdel Rahman Mohammad Said Al-Tawaha, Aleksandr Yesayan, Armine David Chakhmakhchyan, Hassan El-Ramady
Harnessing NanoOmics and Nanozymes for Sustainable Agriculture 2024 1-18

Article

Nano-omics-based abiotic and biotic stresses management

Priyanka Upadhyay, Sonia Navvuru, Praveen Kumar Yadav, Shivani Lalotra, Abhishek Singh, Vishnu D. Rajput, Tatiana Minkina, Karen Ghazaryan
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Article

Detoxification of Biomedical Waste

Abhishek Singh, Neha Chakrawarti, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina,
Abdel Rahman Mohammad Said Al-Tawaha, Abdel Razzaq Al-Tawaha, Marwa Adel Qotb, Arun Karnwal
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Article

Microbial Enzymes for Eco-Friendly Recycling of Wastepaper by Deinking

Sapna Rawat, Abhishek Singh, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina,
Abdel Rahman Mohammad Said Al-Tawaha, Abdel Razzaq Al-Tawaha, Marwa Adel Qotb, Arun Karnwal
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Microbial Manganese Peroxidase: Ligninolytic Enzymes for Bioremediation

Abhishek Singh, Ragini Sharma, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina,
Abdel Rahman Mohammad Said Al-Tawaha, Shreni Agrawal, Ashi Varshney, Abdel Razzaq Al-Tawaha,
Arun Karnwal
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Article

Nanoparticles in revolutionizing crop production and agriculture to address salinity stress challenges for a sustainable future

Abhishek Singh, Shreni Agrawal, Vishnu D. Rajput, Karen Ghazaryan, Aleksandr Yesayan,
Tatiana Minkina, Yufei Zhao, Dimitrios Petropoulos, Athanasios Kriemadis, Marios Papadakis,
Athanasios Alexiou
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Article

Carbon Nanodot-Microbe-Plant Nexus in Agroecosystem and Antimicrobial Applications

Prokisch József, Duyen H. H. Nguyen, Arjun Muthu, Aya Ferroudj, Abhishek Singh, Shreni Agrawal,
Vishnu D. Rajput, Karen Ghazaryan, Hassan El-Ramady, Mahendra Rai
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Article

Nanoparticles Mediated Salt Stress Resilience: A Holistic Exploration of Physiological, Biochemical, and Nano-omics Approaches

Abhishek Singh, Vishnu D. Rajput, Shreni Agrawal, Karen Ghazaryan, Tatiana Minkina,
Abdel Rahman Mohammad Al Tawaha, Avnish Chauhan, Saglara S. Mandzhieva, Rupesh Kumar Singh,
Marios Papadakis, Athanasios Alexiou
Reviews of Environmental Contamination and Toxicology 2024 1-50

Article

Green Remediation Harnessing Plant-Based Strategies for Removal of Emerging Soil Contaminants

Karen Ghazaryan, Aman Verma, Sapna Rawat, Amrit Warshini, Priyadarshani Rajput, Tatiana Minkina,
Mohamed S. Elshikh, Hrant Khachatryan, Rupesh Kumar Singh, Athanasios Alexiou, Abhishek Singh
Nanotechnology Applications and Innovations for Improved Soil Health 2024 57-71

Article

Nanoparticle-mediated approaches in agriculture addressing abiotic stress from soil to plant

cells

Vishnu D. Rajput, Abhishek Singh, Bhavana Tomar, Tatiana Minkina, Hasmik S. Movsesyan, Mohamed S. Elshikh, Shen-Ming Chena, Rupesh Kumar Singh, Karen Ghazaryan
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Article

In-depth Exploration of Nanoparticles for Enhanced Nutrient Use Efficiency and Abiotic Stresses Management: Present Insights and Future Horizons

Abhishek Singh, Aishwarya Sharma, Omkar Singh, Vishnu D. Rajput, Hasmik S. Movsesyan, Tatiana Minkina, Athanasios Alexiou, Marios Papadakis, Rupesh Kumar Singh, Sakshi Singh, João Ricardo Sousa, Hassan Ragab El-Ramady, Faisal Zulfiqar, Rahul Kumar, Abdullah Ahmed Al-Ghamdi, Karen Ghazaryan
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Article

Addressing hidden hunger via improving soil health and crop nutrients through nanofortification

Aishwarya Sharma, Abhishek Singh, Vishnu D. Rajput, Tatiana Minkina, Saglara Mandzhieva, Mohamed S. Elshikh, Hassan Ragab El-Ramady, Karen Ghazaryan
Nanotechnology Applications and Innovations for Improved Soil Health 2024 90-108

Article

Emerging technologies for sustainable soil management and precision farming

Abhishek Singh, Bhavana Tomar, Gohar Margaryan, Priyadarshani Rajput, Tatiana Minkina, Saglara Mandzhieva, Mohamed S. Elshikh, Shen-Ming Chena, Rupesh Kumar Singh, Hassan Ragab El-Ramady, Anil Kumar Singh, Omkar Singh, Karen Ghazaryan
Nanotechnology Applications and Innovations for Improved Soil Health 2024 210-235

Article

Unveiling nanomaterial-induced toxicity: Navigating challenges to modern cultivation and soil management practices

Aman Verma, Abhishek Singh, Sapna Rawat, Priyadarshani Rajput, Tatiana Minkina, Saglara Mandzhieva, Mohamed S. Elshikh, Shen-Ming Chena, Rupesh Kumar Singh, Hassan Ragab El-Ramady, Karen Ghazaryan
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Article

Revolutionizing agricultural sustainability and food security and management to achieve sdgs goals via nanotechnology

Aishwarya Sharma, Abhishek Singh, Priyadarshani Rajput, Tatiana Minkina, Saglara Mandzhieva, Mohamed S. Elshikh, Shen-Ming Chena, Rupesh Kumar Singh, Hassan Ragab El-Ramady, Karen Ghazaryan
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Crop Biofortification Innovative Solutions for Micronutrient Deficiency

Aishwarya Sharma, Abhishek Singh, Vishnu D. Rajput, Tatiana Minkina, Saglara Mandzhieva, Mohamed S. Elshikh, Hassan Ragab El-Ramady, Karen Ghazaryan

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Revolutionizing sustainable agriculture with nano-priming technology: A leap towards resilient and high-yield crops

Divya Pandey, Abhishek Singh, Nare Darbinyan, Armine David Chakhmakhchyan, Shipra Singh Parmar,

Karen Ghazaryan

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Implementing sustainable nano-bioremediation for emerging pollutants: An environmentally friendly remediation strategy

Karen Ghazaryan, Aman Verma, Sapna Rawat, Priyadarshani Rajput, Tatiana Minkina,

Saglara Mandzhieva, Mohamed S. Elshikh, Shen-Ming Chena, Rupesh Kumar Singh,

Hassan Ragab El-Ramady, Abhishek Singh

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Article

Utilizing nanotechnology in agriculture: A balancing approach between environmental health and risks

Abhishek Singh, Bhavana Tomar, Anna Harutyunyan, Priyadarshani Rajput, Tatiana Minkina,

Saglara Mandzhieva, Mohamed S. Elshikh, Shen-Ming Chena, Rupesh Kumar Singh,

Hassan Ragab El-Ramady, Karen Ghazaryan

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Article

Additive-Mediated Phytoextraction of Copper-Contaminated Soils Using Medicago lupulina L.

Hasmik Vardumyan, Abhishek Singh, Vishnu D. Rajput, Tatiana Minkina, Hassan Ragab El-Ramady,

Karen Ghazaryan

Egyptian Journal of Soil Science 2024 599-618

Article

Carbon Sequestration through Organic Amendments, Clay Mineralogy and Agronomic Practices: A Review

Shivangi Omkar Singh, Uday Pratap Shahi, Omkar Singh, Praveen Kumar Singh, Abhishek Singh,

Vishnu D. Rajput, Tatiana Minkina, Hassan El-Ramady, Karen Ghazaryan

Egyptian Journal of Soil Science 2024 581-598

Article

Enhancing Crop Production: Unveiling the Role of Nanofertilizers in Sustainable Agriculture and Precision Nutrient Management

Karen Ghazaryan, Divya Pandey, Sakshi Singh, Vahagn Varagyan, Athanasios Alexiou,

Dimitrios Petropoulos, Athanasios Kriemadis, Vishnu D. Rajput, Tatiana Minkina, Rupesh Kumar Singh,

João Ricardo Sousa, Sandeep Kumar, Hassan El-Ramady, Omkar Singh, Abhishek Singh

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Article

Earthworms As An Emerging Biotechnological Intervention in the Mitigation of Microplastics

Aishwarya Sharma, Shailja Kumar, Abhishek Singh, Ragini Sharma, Vishnu D. Rajput,

Hasmik S. Movsesyan, Tatiana Minkina, Rupesh Kumar Singh, Hassan El-Ramady, Karen Ghazaryan
Egyptian Journal of Soil Science 2024 1219-1238

Article

Nanotechnology Products in Agriculture and Environmental Protection: Advances and Challenges

Abhishek Singh, Sapna Rawat, Vishnu D. Rajput, Tatiana Minkina, Saglara Mandzhieva,

Arevik Sh. Eloyan, Rupesh Kumar Singh, Omkar Singh, Hassan El-Ramady, Karen Ghazaryan

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Article

Unveiling the salinity tolerance potential of Armenian Dandur (*Portulaca oleracea* L.) genotypes: Enhancing sustainable agriculture and food security

Gohar Margaryan, Abhishek Singh, Hrant Khachatryan, Vishnu D Rajput, Tatiana Minkina,

Dimitrios Petropoulos, Athanasios Kriemadis, Athanasios Alexiou, Mohamed S. Elshikh,

Abd El-Zaher M.A. Mustafa, Karen Ghazaryan

Journal of King Saud University - Science 2024 103332

Article

Nanotechnology in the soil system: An ecological approach towards sustainable management

Hassan El-Ramady, J'ozsef Prokisch, Daniella S'ari, Abhishek Singh, Karen Ghazaryan, Vishnu D. Rajput,

Eric C. Brevik

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Article

Eco-Friendly Solutions: Integrating Wild Vegetables for Sustainable Agriculture Food Security and Human Health

Shipra Singh Parmar, Impa H.R., Ramesh Kumar, Abhishek Singh, Aleksandr Yesayan, Vishnu D Rajput,

Tatiana Minkina, Karen Ghazaryan, Hassan El-Ramady

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Article

Impact nano- and micro- form of CdO on barley growth and oxidative stress response

Kirill Azarin, Alexander Usatov, Tatiana Minkina, Ilya Alliluev, Nadezhda Duplii, Saglara Mandzhieva,

Abhishek Singh, Vishnu D. Rajput, Sandeep Kumar, Marwa A. Fakhr, Mohamed S. Elshikh, M. Ajmal Ali,

Karen Ghazaryan

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Article

Bioremediation of heavy metals contaminated soils using nanotechnology

Amin Fathi, Seyede Roghie Ghadirnezhad Shiade, Ghasem Parmoon, Yasser Yaghoubian,

Hemmatollah Pirdashti, Vishnu D. Rajput, Abhishek Singh, Karen Ghazaryan, Tatiana Minkina

Bio-organic Amendments for Heavy Metal Remediation: Water, Soil and Plant Approaches and Technologies

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Article

Climate change and drought: challenges for agriculture in arid environments

Samar Shawaqfeh, Abdel Rahman Mohammad Al Tawaha, Hikmet Gunal, Abdel Razzaq Al-Tawaha,

Marwa Adel Qotb, Arun Karnwal, Nataliia Nesterova, Abhishek Singh, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina, Iftikhar Ali, Amjad M. Husaini, Tauseef A. Bhat, Ekaterina Kozuharova, Rizwan Rashid
Sustainable Agriculture under Drought Stress: Integrated Soil, Water and Nutrient Management 2024
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Article

Agricultural water scarcity: an emerging threat to global water security

Rahul Kanaoujiya, Olivia Saha Roy, Amit Jaiswal, Sani Kumar Singh,

Abdel Rahman Mohammad Al Tawaha, Shekhar Srivastava, Abdel Razzaq Al-Tawaha, Arun Karnwal, Nataliia Nesterova, Abhishek Singh, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina, Iftikhar Ali, Devarajan Thangadurai

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Article

Optimizing irrigation scheduling: strategies for sustainable water management in agriculture

Riham Fouzi Zahalan, Abdel Rahman Mohammad Al Tawaha, Hikmet Gunal, Abdel Razzaq Al-Tawaha,

Marwa Adel Qotb, Arun Karnwal, Nataliia Nesterova, Abhishek Singh, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina, Iftikhar Ali, Samar Shawaqfeh, Amjad M. Husaini, Ekaterina Kozuharova, Rizwan Rashid

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Article

Soil fertility in arid lands: strategies for sustainable management and fertilization

Hikmet Gunal, Mesut Budak, Elif Gunal, Mirac Kilic, Abdel Rahman Mohammad Al Tawaha,

Abdel Razzaq Al-Tawaha, Arun Karnwal, Nataliia Nesterova, Abhishek Singh, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina, Iftikhar Ali, AmjadM. Husaini, Tauseef A. Bhat, Rahul Kanaoujiya, Rizwan Rashid

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Article

Impacts of climate change and drought stress on plant metabolome

Shah Khalid, Abdel Rahman Mohammad Al Tawaha, Nadia, Hikmet Gunal, Abdel Razzaq Al-Tawaha,

Amanullah, Marwa Adel Qotb, Arun Karnwal, Nataliia Nesterova, Abhishek Singh, Vishnu D. Rajput,

Karen Ghazaryan, Tatiana Minkina, Iftikhar Ali, Samar Shawaqfeh, Amjad M. Husaini, Rizwan Rashid

Sustainable Agriculture under Drought Stress: Integrated Soil, Water and Nutrient Management 2024
105-113

Article

Biofertilizers: a sustainable solution for enhancing soil fertility and crop productivity

Abdel Rahman Mohammad Al Tawaha, Arun Karnwal, Siddhartha Pati, Abdel Razzaq Al-Tawaha,

Atul Kumar Upadhyay, Abhishek Singh, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina, Iftikhar Ali, Amjad M. Husaini, Tauseef A. Bhat, Rizwan Rashid

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Article

Resilience in the face of drought: strategies for optimizing plant resilience and enhancing nutrient transfer

Abdel Rahman Mohammad Al Tawaha, Abdel Razzaq Al-Tawaha, Marwa Adel Qotb, Arun Karnwal, Nataliia Nesterova, Abhishek Singh, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina, Iftikhar Ali, Amjad M. Husaini, Tauseef A. Bhat, Ekaterina Kozuharova, Rizwan Rashid

Sustainable Agriculture under Drought Stress: Integrated Soil, Water and Nutrient Management 2024 221-236

Article

Drought resilience in agriculture: mechanisms and adaptation strategies in a changing climate

Abdel Rahman Mohammad Al Tawaha, Ibrahim Alrawashdeh, Doaa Abu-Darwish, Abdel Razzaq Al-Tawaha, Alla Aleksanyan, Arun Karnwal, Nataliia Nesterova, Abhishek Singh, Vishnu D. Rajput, Karen Ghazaryan, Tatiana Minkina, Iftikhar Ali, Amjad M. Husaini, Tauseef A. Bhat, Ekaterina Kozuharova, Rizwan Rashid, Marwa Adel Qotb, Abeer Jubily

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Article

Revolutionizing Crop Production: Nanoscale Wonders-Current Applications, Advances, and Future Frontiers

Abhishek Singh, Vishnu D. Rajput, Ashi Varshney, Ragini Sharma, Karen Ghazaryan, Tatiana Minkina, Athanasios Alexiou, Hassan El-Ramady

Egyptian Journal of Soil Science 2024 221-258

Article

In-vitro Digestibility Organic Materials: Relation with Field Mass Loss Litter Bag Method

João Ricardo Sousa, Abhishek Singh, Karen Ghazaryan, Rupesh Kumar Singh, Henrique Trindade,

João Coutinho

Journal of Ecological Engineering 2024 253-263

Article

Soil Pollution: An Agricultural and Environmental Problem with Nanotechnological Remediation Opportunities and Challenges

Karen Ghazaryan, Shreni Agrawal, Gohar Margaryan, Anna Harutyunyan, Priyadarshani Rajput, Hasmik Movsesyan, Vishnu D. Rajput, Rupesh Kumar Singh, Tatiana Minkina, Mohamed S. Elshikh, Mona S. Alwahibi, Athanasios Alexiou, Marios Papadakis, João Ricardo Sousa, Abhishek Singh

Discover Sustainability 2024 1-33

Article

Study of tolerance and phytodesalination potential of wheat, oat, emmer, and barley for sustainable saline agriculture

GHAZARYAN, K.A., HARUTYUNYAN, A.S., KHACHATRYAN, H.E., SINGH, A., MINKINA, T.M., RAJPUT, V.D., MOVSESYAN, H.S.

Applied Ecology and Environmental Research 2023 4853-4882

Article

Small Tech, Big Impact: Agri-nanotechnology Journey to Optimize Crop Protection and Production for Sustainable Agriculture

Աբիհշեկ Սիսխ, Vishnu D Rajput, Ashi Varshney, Կարեն Ղազարյան, Tatiana Minkina
Plant Stress 2023 1-26

Article

Green Nanofertilizers: the Need for Modern Agriculture, Intelligent, and Environmentally-Friendly Approaches

Abdel Rahman Mohammad Al Tawaha, Abhishek Singh, Vishnu D. Rajput, Ashi Varshney, Shreni Agrawal,
Karen Ghazaryan, Tatiana Minkina, Omar Mahmoud Al Zoubi, Talaat Habeeb, Lysenko Dionis,
Hanan Aref Hasan, Samar Shawaqfeh

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