CV- Hassan Azaizeh

Date: Feb, 2021



A. Personal Details

Hassan Azaizeh

o Date of birth: April 1955

o Country of birth: Israel

o Citizenship: Israeli

o ID number: **053735205**

o Family status: Married

Full home address: Dabburia 16910, P.O. Box 61, Israel. Tel: 04-6702172,
 Mobile 0544986569; Fax: 04-9861173

 Work: R&D Galilee Society, Shefa Amr 20200 & Tel Hai Academic College, Upper Galilee 12210, Israel

o E-mail address: hazaizi@gal-soc.org; hassn@telhai.ac.il

B. Higher Education

1975–1978 B.Sc. in Agricultural Science. The Hebrew University of Jerusalem, The Robert H. Smith Faculty of Agriculture, Food and Environment, Rehovot, Israel. B.Sc. received June 1979

1978–1980 M.Sc. in Plant Pathology and Microbiology. The Hebrew University of Jerusalem, The Robert H. Smith Faculty of Agriculture, Food and Environment, Rehovot, Israel. Thesis: Studies on Possible Resistance of Various Horticultural Crops to the Fungus *Dematophora necatrix* Hartig. Advisors: Professors I. Chet and A. Stejnberg. M.Sc. received June 1981

1984–1987 Ph.D. in Plant Pathology and Microbiology. Texas A&M University, College Station, Texas, USA. Dissertation: Screening Peanut Genotypes (*Arachis hypogaea* L.) for Resistance to *Aspergillus flavus*, *A. parasiticus* and aflatoxin contamination. Advisors: Professors R. E. Pettit, R. A. Taber, and J. Artie Browning. Ph.D. received September 1987

Postdoctoral fellowships

1988–1990 Technion – Israel Institute of Technology, Haifa, Israel

1990–1992 Department of Plant Ecology, Bayreuth University, Bayreuth, Germany

Additional education, training and professional work

July–November 2001 Guest scientist, Juelich Research Center, Juelich, Germany. Biomethylation of heavy metals such as selenium and arsenic by microbes and uptake of these heavy metals by wetland plants such as *Phragmites* and *Typha*. Microbial volatilization of heavy metals for safe detoxification by converting them to nontoxic gases such as dimethylselenide and dimethyldiselenide.

August–September 2002 Guest scientist, Juelich Research Center, Juelich, Germany. Biomethylation of heavy metals such as arsines by microbes and uptake of these heavy metals by wetland plants such as *Phragmites* and *Typha*. Microbial volatilization of heavy metals for safe detoxification by converting them to nontoxic gases such as mono- and dimethylarsenie (dimethylarsine).

April – **September 2019 Sabbatical, ATB, Potsdam, Germany**. Production of lactic acid from carob, banana and sugarcane lignocellulose biomass for polylactic acid as a biodegradable plastic.

C. Academic Appointments and Academic Administrative Positions in Institutions of Higher Education

2005–2009	Lecturer, Biotechnology and Environmental Sciences, Tel Hai
	Academic College, Israel
2009–2013	Senior lecturer, Biotechnology and Environmental Sciences, Tel
	Hai Academic College, Israel
2011–2016	Head, Department of Environmental Sciences, Tel Hai
	Academic College, Israel
2012–2016	Head, "The Cherie and Aaron Raznick Chair for the Study of
	Sustainable Relations between People and the Environment in
	the Upper Galilee", Tel Hai Academic College, Israel
2013-present	Associate Professor, Biotechnology and Environmental
	Sciences, Tel Hai Academic College, Israel

D. Teaching

1978–1980 Laboratory courses for "Diseases of Tropical and Subtropical Crops" and "Diseases of Field Crops and Ornamentals". Department of Plant Pathology and Microbiology, the Hebrew University, The Robert H. Smith Faculty of Agriculture, Food and Environment, Rehovot, Israel. B.Sc. course

1984–1987 Laboratory course for "Diseases of Field Crops". Department of Plant Pathology and Microbiology, Texas A&M University, College Station, Texas, USA. B.Sc. course

2005 - present "Treatment of Dangerous and Toxic Wastes". Department of Environmental Sciences, Tel Hai Academic College, Israel. B.Sc. course

2005 - present "Biotechnology of Fermentation and Bioreactors". Department of Biotechnology, Tel Hai Academic College, Israel. B.Sc. course

2005 - present Laboratory course for "Biotechnology of Fermentation and Bioreactors". Department of Biotechnology, Tel Hai Academic College, Israel. B.Sc. course

2008 - present "Technologies for Treating Water and Wastewater". Department of Environmental Sciences, Tel Hai Academic College, Israel. B.Sc. course

2008 - present First and Advanced Seminars in Environmental Sciences.
Department of Environmental Sciences, Tel Hai Academic College, Israel. B.Sc.
course

2018 - present "Biological Methods for Water and Wastewater Treatment". M.Sc. course

E. Supervision of Graduate Students

Advising college students toward completion of their practical project during their B.Sc. studies

2008–2009	Daniel Berstein, Shani Yani, Itamar Sarawah, Lila Barlev.
	Tel Hai Academic College, Israel
2010-2011	Liad Amir, Kawii Yaniv Saruta. Tel Hai Academic College, Israel
2009–2010	Ido Bar. Academic College of Oranim, Tivon, Israel
2012-2013	Noaa Rolider, Rotem Avtalion. Tel Hai Academic College, Israel
2013-2014	Assaf Goldestein, Gali Fox, Gidi Amikam. Tel Hai Academic
	College, Israel
2014–2015	Jasmin Reizner, Noami Sharki, Iman Shawahneh. Tel Hai Academic
	College, Israel
2016–2017	Alla Ibrahim, Bian Shama. Tel Hai Academic College, Israel
2017-2018	Tasneem Hugerat. Tel Hai Academic College, Israel

M.Sc. students

2001–2003	Zita Sebesvari. KFA, Juelich, Germany. Thesis Title:
	Phytoremediation of selenium using subsurface-flow constructed
	Wetland.
2009–2011	Hiba Abu Tayeh. Technion – Israel Institute of Technology, Israel.

- Thesis Title: Bioethanol production from agricultural waste using Yeasts isolated from Olive Mill Solid Waste.
- 2009–2011 Odelia Levy. Technion Israel Institute of Technology, Israel. Thesis
 Title: Subcritical hydrothermal pretreatment of olive mill solid waste
 for biofuel production
- **2011–2012** Daniel Berstein. The Robert H. Smith Faculty of Agriculture, Food and Environment, Rehovot, Israel. Thesis Title: Effects of selenium on growth parameters of tomato and basil under fertigation management.
- 2015–2017 Samya Abdelhadi. Technion Israel Institute of Technology, Israel. Thesis Title: Production of biochar from olive mill solid waste for removal of heavy metals and polycyclic aromatic hydrocarbons from industrial wastewater.
- 2016 2019 Rawan Baransi. The Robert H. Smith Faculty of Agriculture, Food and Environment, Rehovot, Israel. Thesis Title: Modulating membrane composition by dietary means for improved durability and productivity in farm animals under stress.
- 2016 2019 Noam Yugiv. Tel Hai Academic College, Israel. Thesis Title:
 Development of an extra cellular enzyme production system in order to maximize the efficiency of sewage treatment plants.
- 2016 present Yair Ungar. Tel Hai Academic College, Israel. Thesis Title:
 Developing of a system to capture ammonia from agricultural wastes and producing nitrate through nitrification process.
- 2017 2020 Sabreen Haj. Tel Hai Academic College, Israel. Thesis Title:

 The use of olive mill wastewater as growth medium for industrial production of bacteria and yeasts.
- 2017 2020 Safaa Awwad. Tel Hai Academic College, Israel. Thesis Title: The effect of effluents irrigation on the composition and quality of secondary metabolites in plants for the control of parasites nematodes in animals.
- 2018 present Hussein Jeradat. Tel Hai Academic College, Israel. Thesis Title: Production of activated carbon from olive mill solid wastes for the removal of nitrogen and calcium from contaminated water and wastewater.

- 2018 present Shai Lwitah. Tel Hai Academic College, Israel. Thesis Title: Establishing a continuous reactor for the production of ammonia using rhizobium.
- 2018 present Alaa Ibraheem-Jarushe. Tel Hai Academic College, Israel. Thesis Title: Extraction of a sun cream protection paste from olive mill wastewater.
- 2019 present Nita Bar Niv. Tel Hai Academic College, Israel. Thesis
 Title: Biodegradation of phenolic compounds using microbial and advanced oxidation processes.
- 2020 present Ibraheem Auesat. Tel Hai Academic College, Israel. Thesis
 Title: Production of hydrochar from olive mill solid waste and dates for the removal of heavy metals and organic contaminants from water
- 2020 present Guy Pier. Tel Hai Academic College, Israel. ThesisTitle: The use of biochar and advanced oxidation process to treat wastewater from organic pollutants.

Ph.D. students

- 2015 present Hiba Abu Tayeh. Haifa University, Israel. Dissertation Title: Olive mill solid waste to ethanol production exploration of pretreatment and search for better environmental yeast.
- 2015 2019 Hatice Neval Mucuk. Food Engineering Department, University of Gaziantep, Turkey. Dissertation Title: Pistachio (*Pistacia vera* L.) Hull as a Potential Source of Phenolic Compounds: Evaluation of Antioxidant Activity and Phenolic Profile of Pistachio Hull Extracts.

Postdoctoral fellows

- **1991 1992** Dr. Benet Gunse. Department of Plant Ecology, Bayreuth University, Bayreuth, Germany
- **2000 2002** Dr. Mahmoud Mansour. Institute of Applied Research, Galilee Society, Shefa Amr, Israel

- **2006 2007** Dr. Jeries Jadoun. Institute of Applied Research, Galilee Society, Shefa Amr, Israel
- **2009 2010** Dr. Naim Najameh. Institute of Applied Research, Galilee Society, Shefa Amr, Israel
- **2014 2017** Dr. Sarah Weyl-Feinstein. Institute of Applied Research, Galilee Society, Shefa Amr, Israel
- **2016 2019** Dr. Manal Zaroubi. Institute of Applied Research, Galilee Society, Shefa Amr, Israel
- 2017 2019 Dr. Ammar Kandil. Institute of Applied Research, Galilee Society, Shefa Amr, Israel

F. Research Grants

- 1) Project Title: A novel, green coccidiostat for poultry in Israel. Funding Agency: ICA, Israel. Period: July 2020–June 2022. Total Amount: \$200,000.
- 2) Project Title: Conversion of Wastewater Treatment Sludge to Biofuels and High Added Value Products. Funding Agency: MERC-USAID, USA. Period: July 2019-June 2023. Total Amount: \$682,500. Our Amount: \$133,500. Partners: Dr. Yoram Gerchman, University of Haifa, Israel; Dr. Aid Yunis, Tel Hai Academic College, Israel; Dr. Abeer Balawneh, CARDNE, Jordan.
- 3) Project Title: Optimization of biological degradation of emerging micropollutants and pathogen removal in low-cost subsurface treatment units based on novel chemical and biological indicators. Funding Agency: BMBF/MOST, Germany/Israel. Period: July 2106–June 2019. Amount (Our budget): 219,700€, Germany Amount: 311,500€. Israeli partner: Dr. Jeries Jadoun, R&D Galilee Society. German Partner: Prof. Thomas Ternes. Water Technology and Waste Management (PTKA-WTE). Karlsruhe Institute of Technology,

- Germany & Dr. Marco Scheurer, DVGW-Technologiezentrum Wasser (TZW), Karlsruhe, Germany.
- 4) Project Title: Modulating membrane composition by dietary means for improved durability and productivity in farm animals under stress. Funding Agency: Ministry of Agriculture, Israel. Period: July 2015–August 2018. Total Amount: 1,200,000 NIS, Our Amount: 300,000 NIS. Partners: Dr. Norit-Argov Argman, Hebrew University; Dr. Yan Landau, Dr. Ariel Shabtai & Dr. Tzach Glazer, Volcani centre, Israel.
- 5) Project Title: Integrated treatment of olive mill wastewater and solid wastes for the production of biotechnological products. Funding Agency: Ministry of Agriculture, Israel. Period: September 2013–August 2017. Total Amount: 1,200,000 NIS. Our Amount: 550,000 NIS. Partners: Dr. Yan Landau, Dr. Ariel Shabtai, Volcani center; Prof. Itzhak Hadar, Hebrew University, Israel.
- 6) Project Title: Willow (*Salix* spp.): a new forage resource for semi-arid zones. Funding Agency: MERC–USAID, USA. Period: November 2014–December 2019. Total Amount: \$605,500. Our Amount: \$105,500. Partners: Dr. Josh Klein, Dr. Yan Landau, Volcani center, Israel. Dr. Alex Markovics, Kimron Veterinary Institute, Ministry of Agriculture and Rural Development. Dr. Sami Awabdeh, NCARE, Jordan.
- 7) Project Title: Isolation and identification of antibacterial and antivirulent compounds with therapeutic potential against *Helicobacter pylori*. Funding Agency: Ministry of Agriculture, Israel. Period: December 2014–November 2018. Total Amount: 1,000,000 NIS. Our Amount: 600,000 NIS. Partners: Dr. Jeries Jadoun, R&D Galilee Society, Dr. Nativ Dudai, Volcani Center, Prof. Ram Reifen, Hebrew University, Israel.
- 8) Project Title: Olive mill waste pretreatment, use of yeasts for bioethanol production. Funding Agency: Ministry of Environmental Protection, Israel. Period: June 2014–May 2017. Total Amount: 380,000 NIS. Our Amount: 190,000 NIS. Partners: Dr. Yoram Gerchman, University of Haifa, Israel.

- 9) Project Title: Production of animal feed additive for treating animal parasites. Funding Agency: Ministry of Industry (Kamin), Israel. Period: August 2014–July 2016. Total Amount: 1,200,000 NIS. Our Amount: 500,000 NIS. Partners: Dr. Yan Landau, Dr. Itamar Glazer, Volcani center, Israel. Dr. Alex Markovics, Kimron Veterinary Institute, Ministry of Agriculture and Rural Development.
- 10) Project Title: Impairing larval exsheathment in parasitic nematodes by using Mid-Eastern plants as resource of anthelmintic compounds. Funding Agency: BARD–MARD, USA. Period: November 2014–May 2016. Total Amount: \$50,000. Our Amount: \$25,000. Partners: Dr. Alex Markovics, Kimron Veterinary Institute, Ministry of Agriculture and Rural. Prof. James Miller, Louisiana State University, USA; Dr. Sami Awabdeh, National Center for Agricultural Research and Extension (NCARE, Jordan), Dr. Rana Jamous, Til, Palestine.
- 11) Project Title: Sustainable use of constructed wetlands for wastewater treatment and reuse in small communities. Funding Agency: MERC–USAID, USA. Period: March 2014–February 2019. Total Amount: \$650,500. Our Amount: \$138,000. Partners: Dr. Yoram Gerchman, University of Haifa, Israel; Dr. Abeer Balawneh, CARDNE, Jordan; Eng. Samer Kalbouneh, Til, Palestine.
- **12**) Project Title: Anaerobic digestion of olive mill wastewater for biogas production. Swedish Funding Agency. Period: January 2013–June 2014. Total Amount: <u>100,000 NIS</u>.
- **13**) Project Title: Using solid olive mill waste as 'biofilters' for treatment of contaminated road runoff. Funding Agency: Ministry of Science and Technology (MOST), Israel. Period: September 2011–August 2014. Total Amount: 360,000 NIS.
- 14) Project Title: Mobile integrated sustainable system for treatment of organic wastewater. Funding agency: EU-FP7. Period: September 2011–August 2014. Total Amount: 4,500,000 NIS. Our Amount: 700,000 NIS. Prof. Iggy Litaor & prof. Giora Rytwo, Migal center & Tel Hai, Israel; Prof. Michael Kornaros, Patras University, Greece; Cetenma Co., Murcia, Spain, Peleg Hagalil Co., Israel.

G. Awards and Fellowships

- 1988 1990 Lady Davis Fellowship (Canada) Postdoctoral fellow at the
 Technion Israel Institute of Technology, Haifa, Israel
- **1990 1992** Minerva Fellowship (Germany) Postdoctoral fellow at Bayreuth University, Germany
- **2001 July November** Minerva Short-Term Fellowship (Germany) Guest scientist, Juelich Research Center, Juelich, Germany
- **2002 August September** Minerva Short-Term Fellowship (Germany) Guest scientist, Juelich Research Center, Juelich, Germany

H. Active Participation in Conferences

H1. Lectures

- 1) November 1999 The UNESCO Workshop on Science for Peace and Regional Scientific Cooperation in Molecular Biology, Microbiology and Biotechnology, Jerusalem, Israel. Title of Presentation: The traditional medicine of the Middle Eastern region.
- 2) November 1999 Workshop held at Al-Najah University, Nablus, West Bank (Palestinian Authority). Title of Presentation: Medicinal plants, biological control and biotechnology approaches.
- **3) February 2000** The 1st International Colloquium on Health, Environment and Natural Substances, University of Metz, France. Title of Presentation: Bioactive compounds from medicinal plants and the importance of the preservation of the various plant species.
- **4) May 2000** The Israeli Entomology Society, Volcani Center, Beit Dagan, Israel. Title of Presentation: Biological control of the western flower thrips *Frankliniella occidentalis* using the entomopathogenic fungi *Metarhizium anisopliae and M. flavoviride*.

- 5) October 2003 Medicinal Plant Conference, Napoli, Italy. Title of Presentation: The potential of local medicinal herbs used in traditional Arabic medicine to treat skin, liver and cancer diseases.
- 6) October 2004 COST Action Meeting, Warsaw, Poland. Phytotechnology Work Group 2. Title of Presentation: Bioremediation of contaminated sites from heavy metals using wetland plants.
- **7) November 2004** COST Action Meeting, Greenwich, UK. Phytotechnology Work Group 3. Title of Presentation: Biomethylation and biotransformation of heavy metals by rhizosphere microbes.
- **8) June 2005** COST Action Meeting, Pisa, Italy. Phytotechnology Workshop. Title of Presentation: The potential of wetland plants to phytoremediate selenium in constructed wetlands.
- **9) May 2006** Bioplanta Conference on Medicinal Plants, Sfax, Tunisia. Title of Presentation: Efficacy of Palestinian medicinal herbs used by traditional Arab herbalists for treating different human diseases.
- **10) June 2006** COST Action Meeting, Santiago de Compostella, Spain. Phytotechnology Workshop. Title of Presentation: Uptake, translocation and accumulation selenium by different plant species.
- **11) October 2006** Environmental Management Water Project Regional Conference, Amman, Jordan. Title of Presentation: Biogas production from anaerobic codigestion of agricultural wastes.
- **12) May 2007** COST Action Meeting, Vilnius, Lithuania. Phytotechnology Workshop. Title of Presentation: Phytoremediation of selenium using constructed wetlands.

- **13**) **August 2007** The First Conference on the Revival of Traditional Islamic Arabic Medicine, Amman, Jordan. Conference organized by the Galilee Society, Israel. Title of Presentation: Ethnopharamacological survey of the uses of local medicinal plants.
- **14) September 2007** Biogas and Bioenergy Production International Conference, Hohenheim University, Stuttgart, Germany. Title of Presentation: Codigestion of olive mill wastewater and swine manure using UASB bioreactors for biogas production.
- **15) October 2007** COST Action Meeting, Ben Gurion University, Sede-Boker, Israel. Title of Presentation: Practical approaches to increasing selenium as an essential metalloid in the human diet.
- **16**) **August 2008** COST Action Meeting, Lillehammer, Norway. Title of Presentation: The potential of constructed wetlands on the removal capacity of enteric pathogens and protozoa parasites.
- **17**) **October 2008** COST Action Meeting, Ineris, France. Title of Presentation: Phytoextraction of selenium using subsurface-flow constructed wetland.
- **18)** November 2008 BSF Workshop, Haifa University, Israel. Title of Presentation: The use of wetland plants and microbes for bioremediation of wastewater contaminated with selenium.
- **19) April 2009** COST Action Meeting, Szeged, Hungary. Title of Presentation: Removal capacity of constructed wetland for enteric pathogens and protozoan parasites from treated wastewater used in irrigation.
- **20**) **October 2009** COST Action Meeting, Ascona, Switzerland. Title of Presentation: Biomethylation and biotransformation of selenium by rhizosphere microorganisms.
- **21) October 2010** International Meeting of Biotechnology, Rimini, Italy. Title of Presentation: Biological control of nematodes using plant extract of *Pistacia lentiscus*.

- **22) November 2010** COST Action Meeting, Antalya, Turkey. Title of Presentation: Practical approaches for fortification of selenium in food.
- **23**) **November 2010** The 2nd International Symposium on Medicinal Plants, Their Cultivation and Aspects of Uses, Petra, Jordan. Title of Presentation: Tannins of *Pistacia lentiscus* as biological control for gastro-intestinal nematodes.
- **24) September 2011** EU–FP7, INCO-Innovation, Patras, Greece. Title of Presentation: Mobile integrated sustainable system for treatment of organic wastewater (MISSTOW, EU Project).
- **25) November 2011** COST Action Meeting, Venice, Italy. Title of Presentation: Effects of selenium on growth parameters of tomato and basil crops.
- **26) February 2012** BMBF meeting, Koblenz, Germany. Title of Presentation: Sustainable treatment of reject streams and emerging micropollutants from wastewater.
- **27) March 2012** IWA–WWPR 2012, Heraklion, Crete, Greece. Title of Presentation: Constructed wetlands and UV systems for removal of enteric pathogens and wastewater contaminants.
- **28)** March **2012** INCO Innovation, Murcia, Spain. Title of Presentation: Mobile integrated sustainable system for treatment of organic wastewater (MISSTOW, EU Project).
- **29**) **September 2012** 9th International Phytotechnology Society Conference, Hasselt University, Belgium. Title of Presentation: Removal of pathogens and organic contaminants from wastewater using constructed wetlands and UV systems.
- **30) October 2012** COST Action Meeting, Lisbon, Portugal. Title of Presentation: Fortification of tomatoes and basil plants with selenium for food consumption.

- **31) June 2013** The 13th World Conference on Anaerobic Digestion, Santiago De Compostela, Spain. Title of Presentation: Anaerobic digestion of organic agricultural wastewater for biogas production.
- **32) October 2013** The 41st Israel Society of Ecology & Environmental Sciences Meeting, Rehovot, Israel. Title of Presentation: Development of a mobile integrated sustainable system for treatment of organic wastewater (MISSTOW) and other organic wastewater.
- **33) March 2014** COST Action Meeting, Antalya, Turkey. Title of Presentation: Phyto-mediated biostimulation of the autochthonous microbial community for the depletion of polycyclic aromatic hydrocarbons in contaminated sediments.
- **34) June 2014** INCO Innovation, Murcia, Spain. Title of Presentation: Anaerobic digestion of organic agricultural wastewater (MISSTOW, EU project).
- **35) July 2014** The Plant Production and Marketing Board, Yahoud, Israel. Title of Presentation: Olive waste treatments and anaerobic digestion of olive mill wastewater for biogas production.
- **36**) *November **2014** COST Action Meeting & Total Food Conference, Norwich, UK. Title of Presentation: Development of a mobile integrated system for treatment of agricultural organic wastewater and biogas production.
- **37**) **March 2015** COST Action Meeting, Semmering, Austria. Title of Presentation: The potential of a platform small-bioreactor technology to treat whey.
- **38) August 2015** COST Action Meeting, Milano, Italy, Management Committee Meeting. Discussion on future collaboration and work packages.
- **39**) **September 2015** COST Action Meeting, Potsdam, Germany. Title of Presentation: Olive mill wastewater processing for antioxidant fractions and antimicrobial products.

- **40) October 2015** The 15th International Waste Management and Landfill Symposium, Sardinia, Italy. Title of Presentation: Production of a biofilter from olive mill solid wastes for the removal of heavy metals from contaminated road runoff.
- **41) October 2015** The 15th International Waste Management and Landfill Symposium, Sardinia, Italy. Title of Presentation: Subcritical hydrothermal pretreatment of olive mill solid waste for biofuel production.
- **42**) **March 2016** The Israeli Ministry of Agriculture Conference on Olive Research, Beit Dagan, Israel. Title of Presentation: Treatment of olive mill wastes to produce useful and economical products.
- **43**) **June 2016** The 10th World Congress on Polyphenols, Porto, Portugal. Title of Presentation: Seasonal variation in the effects of Mediterranean polyphenol extracts on the exsheathment kinetics of goat gastro-intestinal nematode larvae.
- **44) July 2016** Special Symposium Water Reuse in Israel: Where We Are and Where Can We Go? Tel Aviv University, Israel. Title of Presentation: Natural systems for wastewater reuse constructed wetlands.
- **45) September 2016** COST Action Meeting, Wageningen, The Netherlands. Title of Presentation: Production of biotechnological products from olive mill solid waste (OMSW).
- **46) December 2016** The Third International Conference on Olive in Palestine (ICOP), Tulkarem, Palestinian Authority. Title of presentation: Production of biochar from olive mill solid wastes for the removal of heavy metals from contaminated industrial wastewater.
- **47) June 2017** The 5th International Conference on Waste Management, Athens, Greece. Title of Presentation: Production of biochar from olive mill solid wastes for the removal of heavy metals from contaminated industrial wastewater.

- **48) July 2017** Conference on Biopiracy & Phytomedicine, Mainz, Germany. Title of Presentation: Seasonal variation on the effects of polyphenolic extracts from willow (*Salix*) on the exsheathment of gastro-intenstinal nematode larvae.
- **49) August 2017** The 2nd International Conference on Latest Trends in Biotechnology and Biodiversity, Barcelona, Spain. Title of Presentation: Production of ethanol from olive mill solid wastes.
- **50) January 2018** Cost Action Meeting CA16230, Warsaw, Poland. Title of Presentation: The use of plant extracted compounds to treat gastro-intestinal nematode larvae in animals.
- **51) June 2018** 7th European Bioremediation Conference, Chania, Crete, Greece. Title of presentation: Sustainable use of constructed wetlands for wastewater treatment and reuse in small communities.
- **52) September 2018** COST Action Meeting, Leon, Spain. Title of presentation: Seasonal variation in the effects of polyphenolic extracts of *Salix sp* (Willow) on the exsheathment of gastrointestinal nematode larvae.
- **53)** October **2018** Cyprus meeting. Title of presentation: Extraction of bioactive compounds from *Salix sp* (Willow) for the inhibition of exsheathment of gastrointestinal nematode larvae.
- **54) October 2018** The 7th International Symposium on Energy from Biomass and Waste, Venice, Italy. Title of presentation: Production of biochar from olive mill solid wastes for removal of heavy metals from industrial wastewater.
- **55) June 2019** The 7th International Conference on Sustainable Solid Waste Management, June 26-29, 2019, Heraklion, Greece. Production of biochar and activated biochar from olive mill solid waste for the removal of heavy metals and calcium from water. www.heraklion2019.uest.gr; organizer: National Technical University of Athens, School of Chemical Engineering, Athens, Greece.
- **56) August 2019** Cost Action Meeting CA16230, Ghent, Belgium. Title of Presentation: Effect of water quality irrigation on the composition and quality of secondary metabolites of *Salix* plants used for the control of parasites nematodes. www.combar-acsrpc2019.org

H2. Lectures for the community

- 1) June 2014 Lecture to farmers and engineers, Hadad Village, Palestinian Authority. Title of Presentation: Olive waste treatments & anaerobic digestion of olive mill wastewater (OMW) for biogas production.
- 2) November 2016 The Galilee Society Annual Conference, Shefa Amr, Israel. Title of Presentation: Production of biological filter from olive mill solid wastes for the removal of heavy metals and other contaminants from contaminated industrial wastewater.
- **3) August 2017** The 2nd M&O Training Session, Jericho, Palestinian Authority. Theme: Proper Operation and Maintenance of Installed Grey-Water Treatment Systems. Title of Presentation: Constructed wetlands for wastewater treatment and reuse.
- **4) October 2017** The Galilee Society Annual Conference, Shefa Amr, Israel. Title of Presentation: The use of plant extracted compounds to treat gastro-intestinal nematode larvae in animals.
- **5) January 2018** The 2nd JAV Workshop, Al Ouja, Palestinian Authority. Theme: Proper Operation and Maintenance of the Installed Grey-Water Treatment Systems. Title of Presentation: Challenges in the uses of water in arid regions.
- **6) March 2018** High-School Students' Day. Tel Hai Academic College, Israel. Title of Presentation: Environmetal biotechnology, a promising future.
- 7) **October 2020** The Galilee Society Annual Conference, Shefa Amr, Israel. Title of Presentation: Production of poly lactic acid (PLA) from lignocellulose.
- 8) **December 2020** Akassimi college Annual Conference, Baka, Israel. Title of Presentation: Production of natural plastic from lignocellulose.

H3. Posters

- 1) July 1999 Workshop on Biotechnology, Agriculture and Food, Brussels, Belgium. The workshop included lectures and discussion groups on: agriculture, natural products, microbiology, enzymes, food, wastewater treatment, biological control and environmental sciences.
- 2) August 1999 International Conference on Complementary and Alternative Medicine on Chronic Liver Diseases, NIH, Maryland, USA. Poster Title: An in vitro comparative evaluation of some medicinal plants from Israel as inhibitors of iron-induced lipid peroxidation in the liver. Our group is the only one dealing with traditional Arabic medicine among more than 50 groups working on Chinese and South American (Amazon) medicinal plants.
- 3) December 1999 The Annual Meeting of the Israel Society for Oxygen and Free Radical Research, Technion Israel Institute of Technology, Haifa, Israel. Poster Title: An in vitro comparative evaluation of some medicinal plants from Israel as inhibitors of iron-induced lipid peroxidation in the liver.
- **4) June 2016** The 10th World Congress on Polyphenols, Porto, Portugal. Poster Title: Olive mill wastewater processing for antioxidant fractions and antimicrobial products.
- 5) September 2016 COST Action Meeting, Wageningen, The Netherlands. Poster Title: Production of biochar from olive mill solid wastes for the removal of heavy metals from contaminated industrial wastewater.
- **6) November 2018** The Technion GWRI Graduate Students Conference. Constructed wetlands in the water-energy nexus: using sugar cane as wastewater treatment plant.

I. Non-Academic Activity & Positions

- 1978 1980 Research Assistant. Department of Plant Pathology and Microbiology, the Hebrew University, The Robert H. Smith Faculty of Agriculture, Food and Environment, Rehovot, Israel
- **1980 1983** Plant Pathologist Inspector. Control of plant diseases and insects of imported and exported products. Ministry of Agriculture, the

Quarantine Services, Department of Plant Protection, Haifa, Israel

- 1984 1987 Research Assistant. Department of Plant Pathology and Microbiology,Texas A&M University, College Station, Texas, USA
- 1992 1995 Microbiologist. Institute of Plant Nutrition, Hohenheim University, Stuttgart, Germany
- **1995 1996** Visiting Scholar. Department of Plant Biology, University of California, Berkeley, California, USA
- 1996 present Senior Researcher. The Galilee Society Regional Research & Development Center, Shefa-Amr, Israel
- 1996 1999 R&D Scientific Director. The Galilee Society Regional Research & Development Center, Shefa-Amr, Israel
- **2000 2001** Acting General Director. The Galilee Society Regional Research & Development Center, Shefa-Amr, Israel
- 2001 2003 R&D Scientific Director. The Galilee Society Regional Research & Development Center, Shefa-Amr, Israel

J. Publications

Dissertations:

- **1978 1980** M.Sc. Plant Pathology and Microbiology. The Hebrew University of Jerusalem, The Robert H. Smith Faculty of Agriculture, Food and Environment, Rehovot, Israel. Thesis: Studies on Possible Resistance of Various Horticultural Crops to the Fungus *Dematophora necatrix* Hartig. Advisors: Professors I. Chet and A. Stejnberg. M.Sc. degree received June 1981.
- 1984 1987 Ph.D. Plant Pathology and Microbiology. Texas A&M University,

College Station, Texas, USA. Dissertation: Screening Peanut Genotypes (*Arachis hypogaea* L.) for Resistance to *Aspergillus flavus*, *A. parasiticus* and aflatoxin contamination. Advisors: Professors R. E. Pettit, R. A. Taber, and J. Artie Browning. Ph.D. degree received September 1987.

Articles in Reviewed Journals

- 1. Stejnberg, A., **Azaizeh, H.,** and Chet, I. 1983. Possible role of phenolic compounds in resistance of horticultural crops to *Dematophora necatrix*. Journal of Phytopathology 107: 318-328. # Citations = 29; IF= 2.365; Q1: Plant Sciences = 14/139.
- 2. **Azaizeh, H.,** Pettit, R.E., Smith, O.D., and Taber, R.A. 1989. Reaction of peanut genotypes under drought stress to *Aspergillus flavus* and *A. parasiticus*. Peanut Science 16: 109-113. # Citations = 19;
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- 1. Jonas-Levi, A., Levi, G., and **Azaizeh, H**. 2019. Valorization of organic wastes through the production of oil and biodiesel using black soldier fly-larvae. Bioresource Technology (Submitted).
- 2. Safaa Awwad, Alex Markovics, Fares Halahleh, Ahmad Yazbak, Manal Haj-Zaroubi, Hussein Muklada, **Hassan Azaizeh.** 2020. Effect of irrigation on secondary metabolites in *Salix* plants and their potential to impair exsheathment of gastro-intestinal nematodes. Experimental Parasitology. (Submitted).
- 3. Klongklaew, "AUnban, K., **Azaizeh, H.,** Schroedter, L., Schneider, R., Venus, J., Khanongnuch, C. 2020. Bioconversion of Diluted acid Pretreated Corn Stover to L(+)-lactic acid by Co-culture of Furfural Tolerant *Enterococcus mundtii* WX1 and *Lactobacillus rhamnosus* SCJ-9.

- 4. Hiba N. Abu Tayeh, Manal Haj-Zaroubi, **Hassan Azaizeh.** 2021. Valorization of Food Waste via Fermentation: Ethanol and Biogas Production from Agriculture Food waste. Book Chapter, Food Waste Volarization (Submitted).
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- 2. **Azaizeh, H.** 2008. Biomethylation and biotransformation of selenium using rhizosphere microorganisms. Phytoremediation: The Green Salvation of the World, 2008: 1-24. ISBN: 978-81-308-0269-5 Editor: Navarro-Aviñó, J.P. # **Citations** = **290**;
- 3. Saad, B., **Azaizeh, H.**, and Said, O. 2008. Arab Herbal Medicine. In: *Botanical Medicine in Clinical Practice* 4. Edited by Ronald, R. Watson & Victor R. Preedy: pp. 31-39. # **Citations** = **51**;
- 4. **Azaizeh, H.,** Castro, P., and Kidd, P. 2010. Microbial biodegradation of organic xenobiotic pollutants. Chapter 9 in: Organic Xenobiotics and Plants: from Mode of Action to Ecophysiology. Authors Schroeder, P., and Collins, C.D., Springer Dordrecht Heidelberg London New York, 2011. pp. 191-215. # **Citations** = **20**;
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- 10. **Azaizeh, H.**, Abu Tayeh, H., Gerchman, Y. 2020. Valorization of olive oil industry solid waste and production of ethanol and high value-added biomolecules. Chapter 2 in: Biovalorisation of Wastes to Renewable Chemicals and Biofuels, pp:27-40. Elsevier Press. https://doi.org/10.1016/B978-0-12-817951-2.00002-X. # **Citations = 1.**

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swine manure using UASB bioreactors for biogas production. Proceeding of the

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21, 2007: 267-271.

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Mid-Eastern breeds of goats differing in their propensity for tannin-rich browse.

Proceedings of the Israel Society for Range Science, Ramat Hanadiv.

4. Azaizeh, H. 2016. Seasonal variation in the effects of Mediterranean polyphenol

extracts on the exsheathment kinetics of goat gastro-intestinal nematode larvae.

Journal of International Society of Antioxidants 2016.

Registered Patents:

US Patent Application

Anti-apicomplexan compositions

Inventor(s): AZAIZEH, Hassan et al.

Assignee(s): THE STATE OF ISRAEL, MINISTRY OF AGRICULTURE &

RURAL DEVELOPMENT, AGRICULTURAL RESEARCH ORGANIZATION

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2. **Azaizeh, H.,** and Pettit, R.E. 1986. Screening peanut genotypes (*Arachis hypogaea L.*) for resistance to *Aspergillus flavus* group of fungi and aflatoxin production. Phytopathology.

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4. **Azaizeh,** H., and Neumann, P.M. 1989. Cell wall yield thresholds and short-term growth responses of corn seedling roots to osmotic stress are influenced by salinity and calcium. Can. J. of Botany.

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7. **Azaizeh, H.,** Gindin, G., and Barash, I. 2001. Biological control of the western flower thrips *Frankliniella occidentalis* using the entomopathogenic fungi *Metarhizium anisopliae and M. flavoviride*. Phytoparasitica 29:67.

8. **Azaizeh, H.,** Said, O., and Saad, B. 2003. The potential of local medicinal herbs used in Arabic medicinal plants to treat skin, liver and cancer diseases. 3rd

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- 10. **Azaizeh, H.,** and Jadoun, J. 2006. Biogas Production from Anaerobic Codigestion of Agricultural Wastes. EMWater conference, October 2006, Jordan, Amman.
- 11. **Azaizeh, H.** 2007. Practical approaches to increase selenium as essential metalloid in human diet. Cost meeting, Sdeh Boker, Ben Gurion University, Israel 23 25/10, 2007.
- 12. **Azaizeh, H.,** Salhani, N., Sebesvari, Z., Shardendu, S., and Emons, E. 2007. Phytoremediation of Selenium Using Constructed Wetlands. 2007. COST meeting, Vilnius, Lithuani.
- 13. **Azaizeh, H.,** and Jadoun, J. 2007. Codigestion of olive mill wastewater and swine manure using UASB bioreactors for biogas production. Biogas and Bioenergy production. International conference, Hohenheim University, Stuttgart, Germany.
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- 15. Said, O., Khalil, K., Fulder, S., **Azaizeh, H.,** Kassis, E., and Saad, B. Anti obesity effect of "Reductan", a combination of Alchemilla vulgaris, Olea europaea, Mentha arvensis, and Cuminum cyminum L, highly recommended in Arab herbal medicine. The First Regional Scientific Conference on Traditional Arabic and Islamic Medicine, Amman, Jordan.

16. Said, O., Khalil, K., Fulder, S., **Azaizeh, H.,** Kassis, E., and Saad, B. 2007. "Stimu-Fem" is a proprietary combination of Ferula assa-foetida L. and Capparis spinosa L. to enhance fertility and sexual functioning in women. The First Regional Scientific Conference on Traditional Arabic and Islamic Medicine, Amman, Jordan.

17. Said, O., Khalil, K., Fulder, S., **Azaizeh, H.,** Kassis, E., and Saad, B. 2007. Efficacy, safety and tolerability of "Strol-Down": A proprietary combination of loquat and olive leaves in maintaining a healthy fat level in the blood. The First Regional Scientific Conference on Traditional Arabic and Islamic Medicine, Amman, Jordan.

18. Saad, B., Soudah- Abo Atta, B., Kmeel, A., **Azaizeh, H.,** and Said, O. 2007. The anti-psoriatic effects of Hypericum triquetrifolium and Peganum harmale derived factors are mediated by Inflammatory and anti-inflammatory cytokines, The First Regional Scientific Conference on Traditional Arabic and Islamic Medicine, Amman, Jordan.

19. Said, O., Khalil, K., Fulder, S., **Azaizeh, H.,** Kassis, E., and Saad, B. 2007. Maintaining a physiological blood glucose level with the help of "Glucolevel", a combination of four anti-diabetes plants used in the traditional Arab herbal medicine. The First Regional Scientific Conference on Traditional Arabic and Islamic Medicine, Amman, Jordan.

20. Said, O., Saad, B., Fulder, S., **Azaizeh, H.,** Khalil, K., and Kassis, E. 2007. "Stimu-Nat" is a proprietary extract of Ferula Assa-foetida L. to enhance male fertility and sexual functioning in animals and man. The First Regional Scientific Conference on Traditional Arabic and Islamic Medicine, Amman, Jordan.

K. Miscellaneous

Membership in professional organizations and duties

2004 - 2009 COST Action 0859, active member.

- **2010 2014** Israel delegate in the Management Committee (MC) for COST Action FA0905, MC member.
- 2014 2017 Israel delegate in the MC for COST Action CA1203, MC member.
- 2017 2021 Israel delegate in the MC for COST Action CA16230, MC member.

Organization of international conferences and workshops

August 2007 The First Conference on the Revival of Traditional Islamic Arabic Medicine, Amman, Jordan

November 2008 BSF Workshop: Ensuring the Sustainable Reuse of Wastewater for Agricultural Irrigation in Semi-Arid/Arid Regions, University of Haifa, Israel.

Organization of local sessions in conferences

April 2012 Two sessions on environmental science aspects: Wastewater

Treatment and River Rehabilitation, for The Galilee Research Center,

Tel Hai Academic College, Israel

April 2013 Two sessions on environmental science aspects: Management of
Water at Lake Kinneret and Ecosystem in the Hula Region, for The
Galilee Research Center, Tel Hai Academic College, Israel

Organization of national conferences and workshops

March 2014 Water Conference of Tel Hai. Tel Hai Academic College, Israel
 March 2015 Water Conference of Tel Hai. Tel Hai Academic College, Israel
 April 2016 Water Conference of Tel Hai. Tel Hai Academic College, Israel

October 2016 Conference on Science. R&D Galilee Society, (The Galilee Society Regional Research & Development Center, Shefa-Amr) Israel

April 2017 Water Conference of Tel Hai. Tel Hai Academic College, Israel

October 2017 Conference on Science. R&D Galilee Society, (The Galilee Society Regional Research & Development Center, Shefa-Amr), Israel

November 2017 Workshop on Nitrogen Transformations: Applications and Challenges. R&D Galilee Society, (The Galilee Society Regional Research & Development Center, Shefa-Amr), Israel

May 2018 Water Conference of Tel Hai. Tel Hai Academic College, Israel

November 2018 Conference on Science. R&D Galilee Society, (The Galilee Society Regional Research & Development Center, Shefa-Amr), Israel

May 2020 Water Conference of Tel Hai. Tel Hai Academic College, Israel

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