

KAAB International Symposium 2021  
Poster session Program

**Session1: Biochemistry**

- P-1     **Search for novel sesquiterpenes from *Mycobacterium* spp.**  
○Nozomi Wakamatsu<sup>1</sup>, Tohru Abe<sup>1</sup>, Daijiro Ueda<sup>1,2</sup>, Tsutomu Sato<sup>1,2</sup>  
<sup>1</sup> NIIGATA UNIVERSITY Graduate School of Science and Technology, Niigata, Japan  
<sup>2</sup> NIIGATA UNIVERSITY Faculty of Agriculture, Niigata, Japan
- P-2     **Insight into Isoprenoid Biosynthesis by Functional Analysis of Isoprenyl Diphosphate Synthases from *Mycobacterium* species**  
○Tohru Abe<sup>1</sup>, Daijiro Ueda<sup>1</sup>, Tsutomu Sato<sup>1</sup>  
<sup>1</sup> Graduate School of Science and Technology, Niigata Univ., Niigata, Japan
- P-3     **Construction of artificial ambrein biosynthetic pathway and genome mining of a novel triterpene/sesquiterpene cyclase**  
○Yuka Sagae<sup>1</sup>, Yota Yamabe<sup>1</sup>, Mao Inoue<sup>1</sup>, Kotone Okuno<sup>1</sup>, Kanako Chikaoka<sup>1</sup>, Daijiro Ueda<sup>1,2</sup>, Tsutomu Sato<sup>1,2</sup>  
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<sup>2</sup> NIIGATA UNIVERSITY Faculty of Agriculture, Niigata, Japan
- P-4     **The conversion of ambrein to volatile components of ambergris and new biological activities of ambrein**  
○Yukari Kuboi<sup>1</sup>, Yukina Kawagoe<sup>1</sup>, Daijiro Ueda<sup>1</sup>, Yoshito Kakahara<sup>2</sup>, Takashi Hara<sup>1</sup>, Tsutomu Sato<sup>1</sup>  
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<sup>2</sup> Division of Dental Pharmacology, Faculty of Dentistry & Department of Tissue Regeneration and Reconstruction, Graduate School of Medical and Dental Sciences, Niigata Univ., Niigata, Japan
- P-5     **Characterization of Class IB terpene synthase**  
○Kazuya Asada<sup>1</sup>, Rafaella Stepanova<sup>1</sup>, Kei Sugawara<sup>1</sup>, Tomoyuki Nishi<sup>1</sup>, Daijiro Ueda<sup>1</sup>, Hayato Inagi<sup>2</sup>, Kunio Miki<sup>2</sup>, Masahiro Fujihashi<sup>2</sup>, Yoko Yasuno<sup>3</sup>, Tetsuro Shinada<sup>3</sup>, Tsutomu Sato<sup>1</sup>  
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<sup>2</sup> Department of Chemistry, Graduate School of Science, Kyoto University, Japan  
<sup>3</sup> Department of Chemistry, Faculty of Science and Graduate School of Science Division of Molecular Materials Science, Osaka city University, Japan

- P-6 **A two-step reaction system for the efficient production of lignin oligomers with long-wavelength UV absorption**  
○Tepei Tsuchida<sup>1</sup>, Takashi Watanabe<sup>2</sup>, Keigo Mikame<sup>1</sup>  
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<sup>2</sup> Research Institute for Sustainable Humanosphere, Kyoto Univ., Kyoto, Japan

**Session2: Agricultural & Food Science**

- P-7 **Production of Kojiligosaccharides with high degree of polymerization using Kojibiose Phosphorylase**  
○Koltovskaia Sofia<sup>1</sup>, Nakai Hiroyuki<sup>2</sup>  
<sup>1</sup> Fac. Of Agriculture, Graduate School of Sc. and Tech., Niigata Univ., Niigata, Japan;  
<sup>2</sup> Assoc. Prof., Fac. of Agriculture, Dep. of Applied Biological Chemistry, Niigata Univ., Niigata, Japan
- P-8 **Quality evaluation of gluten-free rice bread employing two types of rice flour with different amylose contents**  
○Korshunova Iana<sup>1</sup>, Saori Kuremoto<sup>2</sup>, Tomoko Yamaguchi<sup>2</sup>  
<sup>1</sup> Graduate School of Science and Technology, Niigata Univ., Niigata, Japan;  
<sup>2</sup> Faculty of Education, Niigata Univ., Niigata, Japan
- P-9 **Regulation of muscular imidazole peptide contents by dietary histidine levels in broilers**  
○Sharula<sup>1</sup>, Shinichi Kai<sup>2</sup>, Saki Shimamoto<sup>1</sup>, Shinobu Fujimura<sup>1</sup>  
<sup>1</sup> Graduate School of Science and Technology,
- P-10 **Metabolic characteristics of orotic acid as feed additives: effect of dietary orotic acid on growth performance of broilers**  
○Kirill Ivanov, Shinobu Fujimura, Saki Shimamoto  
Graduate School of Science and Technology, Niigata Univ., Niigata, Japan
- P-11 **Micropropagation of the ornamental aquatic plant *Tonina fluviatilis***  
○Niki Toru<sup>1, 2</sup>, Masahiro Otani<sup>1</sup> and Masaru Nakano<sup>1</sup>  
<sup>1</sup> Graduate School of Science and Technology, Niigata University, Niigata, Japan  
<sup>2</sup> Aqua Design Amano Co.,Ltd., Niigata, Japan
- P-12 **Structure and expression analyses of TERMINAL FLOWER 1 (TFL1)-like genes from *Tricyrtis hirta* and *T. formosana* (Liliaceae)**  
○Yuto Imamura, Sota Takanashi, Masahiro Otani and Masaru Nakano  
Graduate school of Science and Technology, Niigata University, Niigata, Japan
- P-13 **Cell Cycle-Dependence of Autophagic Activity and Inhibition of Autophagosome Formation at M Phase in Tobacco BY-2 Cells**

**○Shigeru Hanamata<sup>1,2</sup>, Takamitsu Kurusu<sup>1,3</sup>, Kazuyuki Kuchitsu<sup>1</sup>**

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**P-14 Analysis of the intercellular localization and interaction between *Oryza sativa* Transmembrane**

**Nine Protein 1 (TMN1) and  $\alpha$ -amylase I-1 (AmyI-1)**

**○<sup>1</sup>Ayumi Yamane, <sup>2</sup>Kazusato Oikawa, <sup>2</sup>Aya Koga, <sup>2</sup>Reo Tanaka, <sup>2</sup>Shigeru Hanamata, <sup>2</sup>Marouane Baslam, <sup>1,2</sup>Toshiaki Mitsui**

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**P-15 Analysis of the structure mechanism of white-core tissue in Gohyakumangoku Sdr4-k sake rice**

**○Shinya Kanazawa<sup>1</sup>, Maiko Iwano<sup>1</sup>, Rana Md Masud<sup>1</sup>, Marouane Baslam<sup>2</sup>, Shigeru Hanamata<sup>2</sup>, Kazuhiko Sugimoto<sup>3</sup>, Toshiaki Mitsui<sup>1,2</sup>**

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**P-16 Development of high-protein accumulation technology using  $\alpha$ -amylase and plastid localization Signals**

**○Keita Kasuga<sup>1</sup>, Aya Koga<sup>2</sup>, Shigeru Hanamata<sup>2</sup>, Baslam Marouane<sup>2</sup>, Toshiaki Mitsui<sup>1,2</sup>**

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**P-17 Barley yellow dwarf virus alters the host selection behavior of its vector insect on multiple host species**

**○Shuichi Hatori<sup>1</sup>, Nami Minato<sup>1,2</sup>, Norikuni Ohtake<sup>1</sup>, Mantaro Hironaka<sup>3</sup>**

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<sup>3</sup> Faculty of Bioresources and Environmental Sciences, Ishikawa Prefectural Univ., Ishikawa, JAPAN

**P-18 Development of RT-RPA assay for rapid and easy detection of barley yellow dwarf virus in wheat and barley**

**○Akane Fujita<sup>1</sup>, Nami Minato<sup>1,2</sup>**

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<sup>2</sup> Institute of Science and Technology, Niigata University, Niigata, Japan

- P-19 **Transcriptome analysis of the common moss *Bryum pseudotriquetrum* under Antarctic field conditions**  
O Masahiro Otani<sup>1</sup>, Sakae Kudoh<sup>2,3</sup>, Satoshi Imura<sup>2,3</sup>, Masaru Nakano<sup>1</sup>  
<sup>1</sup> Faculty of Agriculture, Niigata Univ., Niigata, Japan;  
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<sup>3</sup> Department of Polar Science, School of Multidisciplinary Sciences, SOKENDAI (The Graduate University for Advanced Studies), Tokyo, Japan
- P-20 **Functional analysis of soybean xylem sap associated peptide XAP10**  
O Tomoya Shibata<sup>1</sup>, Satoru Okamoto<sup>1,2</sup>  
<sup>1</sup> Grad. Sch. Sci and Tech., Niigata Univ., <sup>2</sup>JST PRESTO
- P-21 **The LC-MS/MS based peptidomics reveals the effect of heat stress condition on the normal degradome repertoire in rice**  
O Amr Elguoshy<sup>1,2,3</sup>, Kentaro Kaneko<sup>1</sup>, Marouane Baslam<sup>4</sup>, Tadashi Yamamoto<sup>2</sup> and Toshiaki Mitsui<sup>1,4</sup>  
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<sup>3</sup> Biotechnology Department, Faculty of Agriculture, Al-azhar University, Cairo 11651, Egypt  
<sup>4</sup> Laboratories of Biochemistry, Faculty of Agriculture, Niigata University, Niigata 950-2181, Japan
- P-22 **Exogenous application of H<sub>2</sub>O<sub>2</sub> for improving rice tolerance responses and grain yield under high-temperature stress**  
O Mari Sekura<sup>1</sup>, Yudai Mitsui<sup>1</sup>, Yukiko Sasuga<sup>1</sup>, Shigeru Hanamata<sup>2</sup>, Marouane Baslam<sup>2</sup>, Kentaro Kaneko<sup>2</sup>, Toshiaki Mitsui<sup>1,2</sup>  
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<sup>2</sup> Faculty of Agriculture, Niigata University, Niigata, Japan
- P-23 **Designing climate-resilient rice cultivar 'YNU31-2-4' with high-yielding suited for the combined effect of salinity and heat**  
O Lutfun NAHAR<sup>1</sup>, Murat Aycan<sup>2</sup>, Nene FURUKAWA<sup>1</sup>, Marouane BASLAM<sup>2</sup>, Toshiaki MITSUI<sup>1,2</sup>  
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<sup>2</sup> Laboratory of Biochemistry, Faculty of Agriculture, Niigata University, Niigata 950-2181, Japan
- P-24 **Analysis of  $\alpha$ -amylase expression profile in rice seeds under stress: New insight into the involvement of  $\alpha$ -Amylases in the formation of heat-induced grain Chalkiness**  
O Hiromu Tezuka, <sup>2</sup>Shigeru Hanamata, <sup>2</sup>Marouane Baslam, <sup>1,2</sup>Toshiaki Mitsui

<sup>1</sup> Graduate School of Science and Technology, Niigata Univ., Niigata, Japan;

<sup>2</sup> Dept. of Appl. Biol. Chem., Fac. of Agric., Niigata Univ., Niigata, Japan

P-25 **Effects of increasing CO<sub>2</sub> levels and temperature on rice yield and Nutrient Use Efficiency**

○ **Nene Furukawa<sup>1</sup>, Murat Aycan<sup>2</sup>, Nahar Lutfun<sup>1</sup>, Toshihiro Nagamori<sup>1</sup>, Eckart Priesack<sup>3</sup>, Bertrand Gakière<sup>4</sup>, José Luis Araus<sup>5</sup>, Iker Aranjuelo<sup>6</sup>, Marouane Baslam<sup>2</sup>, Toshiaki Mitsui<sup>1,2</sup>**

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P-26 **Evaluation of new inbreeding bread wheat (*Triticum aestivum* L.) genotypes salinity tolerance during early stage by morphologic and Simple Sequence Repeat (SSR) analysis**

○ **Murat AYCAN<sup>1</sup>, Marouane BASLAM<sup>1</sup>, Bayram OZDEMIR<sup>2</sup>, Rasit ASILOGLU<sup>3</sup>, Toshiaki MITSUI<sup>1</sup>, Mustafa YILDIZ<sup>4</sup>**

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p-27 **Inbreeding of new high-salt tolerant bread wheat (*Triticum aestivum* L.) genotypes and insight into the tolerance mechanism**

○ **Murat AYCAN<sup>1</sup>, Marouane BASLAM<sup>1</sup>, Rasit ASILOGLU<sup>2</sup>, Toshiaki MITSUI<sup>1</sup>, Mustafa YILDIZ<sup>3</sup>**

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p-28 **Development and analysis of new sake-brewing rice (*Koshi-tanrei Sdr4-k*) tolerant to pre-harvest sprouting and high-temperature during the ripening stage**

○ **Maiko Iwano<sup>1</sup>, Rana Md Masud<sup>1</sup>, Shinya Kanazawa<sup>1</sup>, Marouane Baslam<sup>2</sup>, Shigeru Hanamata<sup>2</sup>, Takeshi Takamatsu<sup>3</sup>, Kazuhiko Sugimoto<sup>4</sup>, Toshiaki Mitsui<sup>1,2</sup>**

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**P-29 Role of autophagy in rice seed maturation under high temperature stress**

○Daisuke Machida<sup>1</sup>, Shigeru Hanamata<sup>1</sup>, Akira Saito<sup>2</sup>, Kentaro Kaneko<sup>1</sup>, Baslam Marouane<sup>1</sup>, Murat Aycan<sup>1</sup>, Takamitsu Kurusu<sup>3</sup>, Kazuyuki Kuchitsu<sup>4</sup>, Toshiaki Mitsui<sup>1,2</sup>

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**P-67 Magnetic field effect on gene transfer in rapeseed (*Brassica napus* L.)**

○Mustafa KAYAN<sup>1</sup>, Murat AYCAN<sup>2</sup>, Mohammad A. R. SAYKAT<sup>1</sup>, Eda VURAN<sup>1</sup>, E. Selcen DARCIN<sup>3</sup>, Semra MIRICI<sup>4</sup>, Mustafa YILDIZ<sup>5</sup>

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**Session 3: Soil Science**

**P-30 Study on the removal method of cesium by geomaterials**

○Haixin Zhang<sup>1</sup>, Sihan Feng<sup>1</sup>, Naoto Miyamoto<sup>2</sup>, Naoki Kano<sup>2</sup>

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With the development of modern science and technology, nuclear energy has been widely applied

**P-31 Effect of the kind of the cultivated land and the depth on the behavior and distribution of heavy metals in soil environment**

○Momoka Naitou<sup>1</sup>, Hiroki Yamamoto<sup>1</sup>, Naoto Miyamoto<sup>2</sup>, Naoki Kano<sup>2</sup>

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**P-32 Adsorption of rare earth elements (REEs) from aqueous solution by EDTA-Chitosan modified metal-organic framework (MOF)**

○Sihan Feng<sup>1</sup>, Xiaoyu Du<sup>1</sup>, Munkhpurev Bat-Amgalan<sup>1</sup>, Naoto Miyamoto<sup>2</sup>, Naoki Kano<sup>2</sup>

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P-33 **Phytoremediation of Cadmium and Zinc using *Taraxacum officinale* and *Gazania* under the Application of Biodegradable Chelating Agents**

○David Eva Vanessa Anak<sup>1</sup>, Takumi Hori<sup>2</sup>, Haixin Zhang<sup>2</sup>, Naoto Miyamoto<sup>1</sup>, Naoki Kano<sup>1</sup>, Kenji Mishima<sup>3</sup>

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<sup>3</sup> Center for Computational Sciences, University of Tsukuba

P-34 **Controlled Release of Ions Loaded in Diatomite by Ultrasound Irradiation**

○<sup>1</sup>Tomoki Kurihara, <sup>2</sup>Yuko Omori, <sup>2</sup>Kojiro Takahashi, <sup>2</sup>Jun Nihara, <sup>1</sup>Mika Kawai, <sup>1\*</sup>Tetsu Mitsumata

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<sup>2</sup> Graduate School of Medical and Dental Sciences, Niigata University

P-35 **Characteristics in Magnetorheology for Magnetic Elastomers by Ultrasonic Measurement**

○<sup>1</sup>Keiju Ogura, <sup>1</sup>Mika Kawai, <sup>1\*</sup>Tetsu Mitsumata

<sup>1</sup> Faculty of Engineering, Niigata University

P-36 **Investigation of amylase expression and activity in pears depending on fruit harvest time.**

○Yoshida Wakana<sup>1</sup>, Yoshida Miyu<sup>1</sup>, Motonaga Yoshitaka<sup>1</sup>, Sueyoshi Kuni<sup>1</sup>, Ohtake Norikuni<sup>1</sup>, Nedu Kiyoshi<sup>2</sup>

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P-37 **Pectinase gene expression in strawberry 'Echigohime'**

○Wakai Kei<sup>1</sup>, Nomura Moe<sup>1</sup>, Tanemura Rryuta<sup>2</sup>, Sueyoshi Kuni<sup>1</sup>, Ohtake Norikuni<sup>1</sup>

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P-38 **Polygalacturonase expression analysis under the different harvest time and Nitrogen conditions in the Fig (*Ficus carica* L.) fruit**

○<sup>1</sup>Moe Nomura, <sup>2</sup>Norikuni Ohtake

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P-39 **Synthesizing Magnesium-added Fertilizer by Using Phosphorus Recovered from Sewage Sludge Ash**

○Haruno Imaizumi<sup>1</sup>, Takehiro Togashi<sup>1</sup>, Yuka Hoshino<sup>1</sup>, Ayuri Suyama<sup>2</sup>, Kazuki Nishimura<sup>2</sup>, Hee-Joon Kim<sup>1</sup>, Naoki Kano<sup>1</sup>, Masaaki Kanno<sup>3</sup>, Norikuni Ohtake<sup>4</sup>

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P-40 **Protist predation upon rhizobacteria alters endophytic bacterial community associated with rice plants**

○Samuel Oloruntopa Solomon<sup>1</sup>, Asiloglu Rasit<sup>2</sup>, Shiroishi Keiko<sup>1</sup>, Suzuki Kazuki<sup>3</sup>, Harada Naoki<sup>4</sup>

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P-41 **Taxonomic and functional community compositions of protist are shaped by soil properties and rhizosphere effect of rice plants**

○ Asiloglu Rasit<sup>1</sup>, Shiroishi Keiko<sup>2</sup>, Suzuki Kazuki<sup>3</sup>, Turgay Oguz Can<sup>4</sup>, Harada Naoki<sup>5</sup>

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P-42 **Comparative analysis of bacterial community structures in paddy soils collected from a wide area of Japan**

○Kana Katashima<sup>1</sup>, Kazuki Suzuki<sup>2</sup>, Takaaki Miki<sup>3</sup>, Qicong Xu<sup>3</sup>, Shinji Ohkubo<sup>3</sup>, Shinji Iwaishi<sup>3</sup>, Naoki Harada<sup>4</sup>

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P-43 **Molecular Genetic Characterization of Arbuscular Mycorrhizal Fungi Associated with Upland Rice in Bangladesh**

○Md Zakaria Ibne Baki<sup>1</sup>, Kazuki Suzuki<sup>2</sup>, Kohei Takahashi<sup>1</sup>, Sharmin Akter Chowdhury<sup>1</sup>, Rasit Asiloglu<sup>3</sup>, Naoki Harada<sup>4</sup>

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P-44 **Physiological and Biochemical Behaviors of Date Palm Vitroplants Treated with Microbial Consortia and Compost in Response to Salt Stress**

○Salma Toubali<sup>1,2</sup>, Abdel-ilah Tahiri<sup>1,3</sup>, Mohamed Anli<sup>1,2,3</sup>, Sarah Symanczik<sup>4</sup>, Abderrahim Boutasknit<sup>1,2</sup>, Mohamed Ait-El-Mokhtar<sup>1</sup>, Raja Ben-Laouane<sup>1</sup>, Khalid Oufdou<sup>3</sup>, Youssef Ait-Rahou<sup>1</sup>, Hela Ben-Ahmed<sup>2</sup>, Martin Jemo<sup>5</sup>, Mohamed Hafidi<sup>3</sup> and Abdelilah Meddich<sup>1,2\*</sup>

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P-45 **Mitigation of water stress effects by PGPR bacteria, arbuscular mycorrhizal fungi and compost in tomato (*Solanum lycopersicum* L.) plants**

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P-46 **The tolerance improvement of argan tree to water deficit by autochthonous endomycorrhizal fungi**

○Merieme Soufiani<sup>1,2</sup>, Salama Aissam<sup>1</sup>, Abdelghani Chakhchar<sup>1</sup>, Said Wahbi<sup>2</sup>, Abderrahim Ferradous<sup>3</sup>, Allal Douira<sup>4</sup>, Abdelilah Meddich<sup>2</sup>, Cherkaoui El Modafar<sup>1</sup>

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- P-47 **Phytostabilization of heavy-metal contaminated soil using compost, marble waste and inoculation with bacteria-mycorrhizae**  
○ **A. RAKLAMI<sup>1,2</sup>, A. TAHIRI<sup>1,2</sup>, A. MEDDICH<sup>2</sup>, N. BECHTAOUI<sup>1</sup>, A. EL GHARMALI<sup>3</sup>, E. PAJUELO<sup>4</sup>, M. BASLAM<sup>5</sup>, K. OUFDOU<sup>1</sup>**  
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- P-48 **Compost and phosphate sludge combined with beneficial microorganisms' inoculation as a promising strategy to restore contaminated soils with heavy metals**  
○ **A. RAKLAMI<sup>1,2</sup>, A. TAHIRI<sup>1,2</sup>, A. MEDDICH<sup>2</sup>, N. BECHTAOUI<sup>1</sup>, A. EL GHARMALI<sup>3</sup>, E. PAJUELO<sup>4</sup>, M. BASLAM<sup>5</sup>, K. OUFDOU<sup>1</sup>**  
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- P-49 **Suppression of Verticillium wilt in tomato by arbuscular mycorrhizal fungi and rhizobacteria consortium associated with phospho-compost**  
○ **Salma Oulad Ziane<sup>1</sup>, Abdelilah Meddich<sup>2</sup>, Sanae El Maaloum<sup>1</sup>, Hanan Boutaj<sup>1</sup>, Zainab El Alaoui-Talibi<sup>1</sup>, Soumia Amir<sup>3</sup>, Allal Douira<sup>4</sup>, Saad Ibnsouda-Koraichid<sup>5</sup> and Cherkaoui El Modafar<sup>1</sup>**  
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**P-50 The effect of arbuscular mycorrhizal fungi and vermicompost on the growth and development of Prickly Pear Cactus (*Opuntia ficus-indica* Mill.)**

○ **Soufiane LAHBOUKI<sup>1,3</sup>, Abderrahim BOUTASKNIT<sup>1</sup>, Mohamed ANLI<sup>1</sup>, Youssef AIT RAHOU<sup>1</sup>, Raja BEN-LAOUANE<sup>1</sup>, Wissal BENAFFARI<sup>1</sup>, Said WAHBI<sup>1</sup>, Marouane BASLAM<sup>2</sup>, Abdelkader OUTZOURHIT<sup>3</sup> and Abdelilah MEDDICH<sup>1</sup>**

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**P-51 Use of phospho-compost enriched with bacteria and mycorrhizae Consortia as biofertilizer to improve tomato and maize growth under field condition.**

○ **Sanae El Maaloum<sup>1\*</sup>, Alae Elabed<sup>1</sup>, Zainab El Alaoui-Talibi<sup>1</sup>, Abdelilah Meddich<sup>1</sup>, Abdelkarim Filali-Maltouf<sup>2</sup>, Allal Douira<sup>3</sup>, Saad Ibensouda-Koraichid<sup>4</sup>, Soumia Amir<sup>5</sup> and Cherkaoui El Modafar<sup>1</sup>**

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**P-52 The effect of chitosan applied individually or in combination with other biofertilizers on growth and stem anatomy of tomato**

○ **El Amerany Fatima<sup>1,2,3\*</sup>, Rhazi Mohammed<sup>2</sup>, Ben laouane Raja<sup>1</sup>, Boutasknit Abderrahim<sup>1</sup>, Anli Mohamed<sup>1</sup>, Wahbi Said<sup>1</sup>, Taourirte Moha<sup>3</sup>, Meddich Abdelilah<sup>1</sup>**

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P-53 **Impact of arbuscular mycorrhizal fungi and compost on the growth, water status, and photosynthesis of carob (*Ceratonia siliqua* L.) under drought stress and recovery**

○ Abderrahim Boutasknit<sup>1</sup>, Marouane Baslam<sup>2,3</sup>, Mohamed Anli<sup>1</sup>, Mohamed Ait-El-Mokhtar<sup>1</sup>, Raja Ben-Laouane<sup>1</sup>, Youssef Ait-Rahou<sup>1,4</sup>, Wissal Benaffari<sup>1</sup>, Soufiane Lahbouki<sup>1</sup>, Salma Toubali<sup>1</sup>, Cherkaoui El Modafar<sup>5</sup>, Said Wahbi<sup>1</sup>, Abdelilah Meddich<sup>1</sup>

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P-54 **Induction of early oxidative events in mycorrhizal olive tree in response to Verticillium wilt**

○ Hanane Boutaj<sup>1, 2</sup>, Abdelilah Meddich<sup>2</sup>, Abdelghani Chakhchar<sup>1,3</sup>, Said Wahbi<sup>2</sup>, Zainab El Alaoui-Talibi<sup>1</sup>, Allal Douira<sup>4</sup> and Cherkaoui El Modafar<sup>1</sup>

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P-55 **Improvement of quinoa growth, physiology and yield under drought stress in field conditions**

○ Wissal Benaffari<sup>1</sup>, Abderrahim Boutasknit<sup>1</sup>, Mohamed Anli<sup>1</sup>, Youssef Ait Rahou<sup>1,2</sup>, Mohamed Ait-El-Mokhtar<sup>1</sup>, Soufiane Lahbouki<sup>1</sup>, Raja Ben-Laouane<sup>1</sup>, Said Wahbi<sup>1</sup>, Marouane Baslam<sup>3</sup>, Abdelilah Meddich<sup>1</sup>

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P-56 **Potential of Native Arbuscular Mycorrhizal Fungi, Rhizobia, and/or Green Compost as Alfalfa (*Medicago sativa*) Enhancers under Salinity**

○Raja Ben-Laouane<sup>1</sup>, Marouane Baslam<sup>2</sup>, Mohamed Ait-El-Mokhtar<sup>1</sup>, Mohamed Anli<sup>1</sup>, Abderrahim Boutasknit<sup>1</sup>, Youssef Ait-Rahou<sup>1</sup>, Soufiane Lahbouki<sup>1</sup>, Toshiaki Mitsui<sup>2</sup>, Khalid Oufdou<sup>3</sup>, Said Wahbi<sup>1</sup> and Abdelilah Meddich<sup>1</sup>

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P-57 **Growth and nutrient enrichment of wheat/faba bean as influenced by co-inoculation in a cropping system**

○Noura Bechtaoui<sup>1,2</sup>, Anas Raklami<sup>1</sup>, Abdel-ilah Tahiri<sup>1</sup>, Loubna Benidire<sup>1,3</sup>, Martin JEMO<sup>2</sup>, Abdelilah Meddich<sup>4</sup>, Khalid Oufdou<sup>1,2</sup>

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P-58 **Biostimulants: towards enhancing phoeniculture potential under abiotic stress through an ecologically friendly approach**

○Fatima Zahra Akenous<sup>1</sup>, Mohamed Anli<sup>1</sup>, Mohamed Ait-El-Mokhtar<sup>1</sup>, Abderrahim Boutasknit<sup>1</sup>, Raja Ben-Laouane<sup>1</sup>, Youssef Ait-Rahou<sup>1</sup>, Marouane Baslam<sup>2</sup>, Said Wahbi<sup>1</sup> and Abdelilah Meddich<sup>1\*</sup>

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- P-59 **Use of mycorrhizal fungi and compost for improving the growth and yield of tomato and its resistance to *Verticillium dahliae***  
○Youssef Ait Rahou<sup>1,2</sup>, Marouane Baslam<sup>3</sup>, Mohamed Ait-El-Mokhtar<sup>1</sup>, Mohamed Anli<sup>1</sup>, Abderrahim Boutasknit<sup>1</sup>, Raja Ben-Laouane<sup>1</sup>, Allal Douira<sup>2</sup>, Rachid Benkirane<sup>2</sup>, Cherkaoui El Modafar<sup>4</sup> and Abdelilah Meddich<sup>1\*</sup>  
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\*Corresponding author
- P-60 **Alleviation of Detrimental Effects of Salt Stress on Date Palm (*Phoenix dactylifera* L.) by the Application of Arbuscular Mycorrhizal Fungi and/or Compost**  
○ Mohamed Ait-El-Mokhtar<sup>1,2</sup>, Marouane Baslam<sup>3</sup>, Raja Ben-Laouane<sup>1</sup>, Mohamed Anli<sup>1</sup>, Abderrahim Boutasknit<sup>1</sup>, Toshiaki Mitsui<sup>3,4</sup>, Said Wahbi<sup>1</sup> and Abdelilah Meddich<sup>1</sup>  
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- P-61 **Biofertilizers as sustainable biological tool to improve date palm growth, photosynthetic apparatus under water deficit**  
○Mohamed Anli<sup>1,2</sup>, Marouane Baslam<sup>3\*</sup>, Abderrahim Boutasknit<sup>1</sup>, Mohamed Ait-El-Mokhtar<sup>1</sup>, Raja Ben-Laouane<sup>1</sup>, Youssef Ait Rahou<sup>1</sup>, Fatima El Amerany<sup>1</sup>, Abdel-ilah Tahiri<sup>1,2</sup>, Anas Rklami<sup>1,2</sup>, Sarah Symanczik<sup>4</sup>, Khalid Oufdou<sup>2</sup>, Toshiaki Mitsui<sup>3</sup>, Mohamed Hafidi<sup>2,5</sup> and Abdelilah Meddich<sup>1\*</sup>  
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P-62 **Induction of natural date palm defenses in response to fucoidans extracted from brown seaweed of Moroccan coasts**

○ **Soukaina Bouissil<sup>1</sup>** **Ilaume Pierre<sup>2</sup>**, **Halima Rchid<sup>3</sup>**, **Philippe Michaud<sup>2</sup>**, **Cédric Delattre<sup>2,4</sup>**, and **Cherkaoui El Modafar<sup>1</sup>**

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P-63 **Polysaccharides and oligosaccharides from moroccan green and brown seaweed stimulate tomato defense responses**

○ **Meriem AITOUQUINANE<sup>1,2</sup>**, **Anouar MOUHOU<sup>1</sup>**, **Imen FENDRI<sup>3</sup>**, **Slim ABDELKAFI<sup>4</sup>**, **Mohamed Didi OULD EL-HADJ<sup>5</sup>**, **Zakaria BOUAL<sup>5</sup>**, **Pascal DUBESSAY<sup>2</sup>**, **Christine GARDARIN<sup>2</sup>**, **Philippe MICHAUD<sup>2</sup>**, **Guillaume PIERRE<sup>2</sup>**, **Zainab EL ALAOUI TALIBI<sup>1</sup>**, **Cedric DELATTRE<sup>2,6</sup>**, **Cherkaoui EL MODAFAR<sup>1</sup>**

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P-64 **Microbial volatiles induce accumulation of starch and promote plant growth**

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**P-65 Volatiles emitted by *Aspergillus oryzae* stimulate growth of Rice at seedling and reproductive stages**

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**P-66 Multi-omics reveal mechanisms of rice to microbial Volatile Compounds (VCs) exposure in a changing climate**

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