

Daily Schedule and Sessions of 29th JSPMI Annual Meeting

**Wednesday, September 18**

12:00 p.m. – Registration

1:00 – 1:10 p.m. Opening Ceremony

1:10 – 2:25 p.m. Oral Presentation (5 titles)

\* Boxed numbers indicate presentations by student.

1 Ergot alkaloid accumulation in the Convolvulaceae-*Periglandula* fungi symbiosis

\*Shoko Inaba, Akifumi Sugiyama, Kazufumi Yazaki  
Kyoto Univ., RISH

2 Effect of santhopine production acquired from *Rhizobium rhizogenes* on the microbial community of tobacco

\*Tomohisa Shimasaki<sup>1</sup>, Takashi Kawasaki<sup>1</sup>, Yuichi Aoki<sup>2</sup>, Kazufumi Yazaki<sup>1</sup>, Akifumi Sugiyama<sup>1</sup>  
<sup>1</sup>RISH, Kyoto Univ., <sup>2</sup>Tohoku Medical Megabank Organization., Tohoku Univ.

3 Dynamics and effect on the bacterial community of tomatine secreted by tomato roots in the rhizosphere

\*Masaru Nakayasu<sup>1</sup>, Kohei Ohno<sup>1</sup>, Yuichi Aoki<sup>2</sup>, Hisabumi Takase<sup>3</sup>, Kazufumi Yazaki<sup>1</sup>, Akifumi Sugiyama<sup>1</sup>  
<sup>1</sup>RISH, Kyoto Univ., <sup>2</sup>ToMMo, Tohoku Univ., <sup>3</sup>Bioenv. Sci., KUAS

4 Spatiotemporal distribution of daidzein in soybean rhizosphere and its effect on rhizosphere microbiome

\*Akifumi Sugiyama<sup>1</sup>, Fuki Okutani<sup>1</sup>, Masaru Nakayasu<sup>1</sup>, Shoichiro Hamamoto<sup>2</sup>, Naoto Nihei<sup>2</sup>, Taku Nishimura<sup>2</sup>, Yuichi Aoki<sup>3</sup>, Kazufumi Yazaki<sup>1</sup>  
<sup>1</sup>Kyoto Univ., <sup>2</sup>The Univ. Tokyo, <sup>3</sup>Tohoku Univ.

5 Mutants of the nitrogen-fixing actinobacterium *Frankia casuarinae* deficient in vesicle differentiation

Koya Asukai<sup>1</sup>, Shintaro Matsuyama<sup>1</sup>, Masaki Nakajo<sup>2</sup>, Louis Tisa<sup>3</sup>, \*Ken-ichi Kucho<sup>1</sup>

<sup>1</sup>Grad. Schl. Kagoshima Univ., <sup>2</sup>Kagoshima Univ., <sup>3</sup>Univ. New Hampshire

2:25 – 2:40 p.m. Break

2:40 – 3:55 p.m. Oral Presentation (5 titles)

\* Boxed numbers indicate presentations by student.

6 Stimulation of asymbiotic sporulation in arbuscular mycorrhizal fungi by fatty acids

\*Hiromu Kameoka<sup>1,2</sup>, Ippo Tsutsui<sup>1</sup>, Katsuharu Saito<sup>3</sup>, Yusuke Kikuchi<sup>4</sup>, Yoshihiro Handa<sup>2</sup>, Tatsuhiko Ezawa<sup>4</sup>, Hideo Hayashi<sup>1</sup>, Masayoshi Kawaguchi<sup>2,5</sup>, Kohki Akiyama<sup>1</sup>  
<sup>1</sup>Osaka Pref. Univ., <sup>2</sup>NIBB, <sup>3</sup>Shinshu Univ., <sup>4</sup>Hokkaido Univ., <sup>5</sup>SOKENDAI

7 Genetic basis underlying the symbiosis variation in *Lotus japonicus* - *Mesorhizobium* symbiosis

\*Masaru Bamba<sup>1</sup>, Seishiro Aoki<sup>2</sup>, Tadashi Kajita<sup>3</sup>, Hiroaki Setoguchi<sup>4</sup>, Yasuyuki Watano<sup>5</sup>, Shusei Sato<sup>6</sup>, Takashi Tsuchimatsu<sup>5</sup>

<sup>1</sup>Chiba Univ. Grad., <sup>2</sup>Univ. Tokyo, <sup>3</sup>Univ. Ryukyu, <sup>4</sup>Kyoto Univ., <sup>5</sup>Chiba Univ., <sup>6</sup>Tohoku Univ.

8 Genome analysis of cheating rhizobial strains isolated from field.

Shohei Kusakabe<sup>1</sup>, Shougo Nitanda<sup>1</sup>, Hideki Hirakawa<sup>2</sup>, Tomomi Nakagawa<sup>3</sup>, \*Shusei Sato<sup>1</sup>

<sup>1</sup>Grad. Sch. of Life Sci., Tohoku Univ., <sup>2</sup>Kazusa DNA Res. Inst., <sup>3</sup>YSFH/NIBB

9 Genomic analysis of superior population of *Bradyrhizobium diazoefficiens*

\*Ryota Noda<sup>1</sup>, Sachiko Masuda<sup>2</sup>, Masayuki Sugawara<sup>1</sup>, Kaori Kakizaki<sup>1</sup>, Masato Mikuchi<sup>3</sup>, Taichi Sugii<sup>3</sup>, Arisa Shibata<sup>2</sup>, Ken Shirasu<sup>2</sup>, Kiwamu Minamisawa<sup>1</sup>

<sup>1</sup>Graduate School of Life Sciences, Tohoku University, <sup>2</sup>RIKEN, <sup>3</sup>Tokachi Federation of Agricultural Cooperative Associations

10 Experimental evolution of symbiosis islands of soybean bradyrhizobia: Large deletions including *nif/rhc* genes and their roles

\*Kiwamu Minamisawa, Haruka Arashida, Haruka Odake, Masayuki Sugawara, Hisayuki Mitsui  
Graduate School of Life Sciences, Tohoku University

3:55 – 4:10 p.m. Break

4:10 – 5:30 p.m. General Discussion 1 (oral: 1 – 10)

5:30 p.m. – Poster Viewing

#### **Thursday, September 19**

9:00 – 10:15 a.m. Short Presentation (39 poster titles)

10:30 – 11:30 a.m. Poster Viewing with Authors (*odd numbers*)

11:30 – 12:30 p.m. Poster Viewing with Authors (*even numbers*)

Lunch/Special Session for Students and Early Career Researchers/Committee Meeting

1:45 – 2:35 p.m. General Discussion 2 (P1 – P19)

2:35 – 2:50 p.m. Break

2:50 – 3:40 p.m. General Discussion 3 (P20 – P39)

3:40 – 4:00 p.m. Break

4:00 – 4:45 p.m. Special Lecture 1  
Comprehensive analysis of plant pathogen effector proteins using yeast expression system  
Dr. Mitsuaki Tabuchi (Kagawa University)

4:45 – 5:00 p.m. Break

5:00 – 5:45 p.m. Special Lecture 2  
How to apply chemical biology approach to plant immunity research and crop protection  
Dr. Yoshiteru Noutoshi (Okayama University)

5:45 – 6:00 p.m. Break

6:30 p.m. – Social Gathering

#### **Friday, September 20**

9:00 – 10:30 a.m. Oral Presentation (6 titles)

\* Boxed numbers indicate presentations by student.

11 Molecular mechanism underlying promotion of *Paris*-type arbuscular mycorrhizal symbiosis by gibberellin in *Eustoma grandiflorum*

\*Takaya Tominaga<sup>1</sup>, Chihiro Miura<sup>2</sup>, Kotomi Ueno<sup>2</sup>, Naoya Takeda<sup>3</sup>, Katsushi Yamaguchi<sup>4</sup>, Shuji Shigenobu<sup>4</sup>, Masahide Yamato<sup>5</sup>, Hironori Kaminaka<sup>2</sup>

<sup>1</sup>Dept. Agr. Sci., Grad. Sch. Sust. Sci., Tottori Univ., <sup>2</sup>Fac. Agr., Tottori Univ., <sup>3</sup>Schl. Sci. Tech., Kwansei Gakuin Univ., <sup>4</sup>NIBB, <sup>5</sup>Fac. Edu., Chiba Univ.

12 Reactive sulfur species in the root nodule symbiosis of *Lotus japonicus*

\*Mitsutaka Fukudome<sup>1</sup>, Haruka Ishizaki<sup>2</sup>, Nahoko Uchi<sup>3</sup>, Yuta Shimokawa<sup>2</sup>, Eri Watanabe<sup>1</sup>, Toshiki Uchiumi<sup>1</sup>

<sup>1</sup>Grad. Sch. Sci. Eng. Kagoshima Univ., <sup>2</sup>Fac. Sci. Kagoshima Univ., <sup>3</sup>Grad. Sch. Med. Dent. Sci. Kagoshima Univ.

13 *Lotus japonicus* NRSYM3 regulates nitrate inhibition of root nodule symbiosis and nitrate uptake

\*Fumika Misawa<sup>1</sup>, Hanna Nishida<sup>2</sup>, Takamasa Suzuki<sup>3</sup>, Momoyo Ito<sup>1</sup>, Mika Nomoto<sup>4</sup>, Yasuomi Tada<sup>4</sup>, Masayoshi Kawaguchi<sup>5</sup>, Takuya Suzaki<sup>1</sup>

<sup>1</sup>Univ. Tsukuba, <sup>2</sup>NARO, <sup>3</sup>Chubu Univ., <sup>4</sup>Nagoya Univ., <sup>5</sup>NIBB

14 A shared gene drives lateral root development and root nodule symbiosis pathways in *Lotus japonicus*

\*Takashi Soyano<sup>1,2</sup>, Yoshikazu Shimoda<sup>3</sup>, Masayoshi Kawaguchi<sup>1,2</sup>, Hayashi Makoto<sup>4</sup>

<sup>1</sup>NIBB, <sup>2</sup>SOKENDAI, <sup>3</sup>NARO, <sup>4</sup>RIKEN

15 The evolution of LysM receptor-like kinase in plants

Ruman Hafijur<sup>1</sup>, Kai Battenberg<sup>2</sup>, Makoto Hayashi<sup>2</sup>, \*Yasuyuki Kawaharada<sup>1</sup>

<sup>1</sup>Iwate Uni., <sup>2</sup>RIKEN

16 *Arabidopsis* SMN2 encodes a DEAD-box RNA helicase involved in proper expression of NLR immune receptor SMN1/RPS6

\*Momoko Takagi<sup>1</sup>, Naoki Iwamoto<sup>1</sup>, Yuta Kubo<sup>1</sup>, Takayuki Morimoto<sup>1</sup>, Kosuke Hagito<sup>1</sup>, Hiroki Takagi<sup>2</sup>, Keisuke Tanaka<sup>3</sup>, Teruaki Taji<sup>4</sup>, Kazuya Akimitsu<sup>1</sup>, Ryohei Terauchi<sup>5</sup>, Ken Shirasu<sup>6</sup>, Kazuya Ichimura<sup>1</sup>

<sup>1</sup>Grad. Sch. Agri. Kagawa Univ., <sup>2</sup>Dep. Bioprod. Sci. Ishikawa Pref. Univ., <sup>3</sup>Nodai Genome Res. Cent. Tokyo Univ. Agri., <sup>4</sup>Facult. Appli. Bio-Sci. Dep. Tokyo Univ. Agri., <sup>5</sup>Grad. Sch. Agri. Sci. Kyoto Univ., <sup>6</sup>RIKEN CSRS

10:30 – 10:45 a.m.

Break

10:45 – 11:25 a.m.

General Discussion 4 (oral: 11 – 16)

11:25 – 11:40 a.m.

Break

11:40 – 12:10 p.m.

JSPMI 29<sup>th</sup> General Meeting & Closing Ceremony

Scientific Posters of JSPMI 29th Annual Meeting

**Wednesday, September 18**

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**Thursday, September 19**

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10:30 – 11:30 a.m. Poster Viewing with Authors (*odd numbers*)

11:30 – 12:30 p.m. Poster Viewing with Authors (*even numbers*)

1:45 – 2:35 p.m. General Discussion 2 (P1 – P19)

2:50 – 3:40 p.m. General Discussion 3 (P20 – P39)

**Friday, September 20**

9:30 – 12:10 p.m. Poster Take-Down

【Posters, 39 titles】

\* Boxed poster numbers indicate presentations by student.

**P1** Analysis of the diurnal regulation of specialized metabolite secretion to soybean rhizosphere  
\*Hinako Matsuda, Masaru Nakayasu, Kazuhumi Yazaki, Akihumi Sugiyama  
RISH, Kyoto Univ

**P2** Analysis of soyasaponins secreted from soybean roots  
\*Teruhisa Fujimatsu<sup>1</sup>, Yuhei Tsuno<sup>1</sup>, Keiji Endo<sup>1</sup>, Akifumi Sugiyama<sup>2</sup>, Kazufumi Yazaki<sup>2</sup>  
<sup>1</sup>BSR, Kao Corp., <sup>2</sup>RISH, Kyoto Univ.

**P3** A simple method for rhizosphere effects and analysis of soybean root exudates in the field  
\*Miwako Toyofuku<sup>1</sup>, Masaru Nakayasu<sup>1</sup>, Fuki Okutani<sup>1</sup>, Hisabumi Takase<sup>2</sup>, Kazufumi Yazaki<sup>1</sup>,  
Akifumi Sugiyama<sup>1</sup>  
<sup>1</sup>RISH, Kyoto Univ., <sup>2</sup>Bioenv. Sci., KUAS

**P4** Plant growth promoter, *Variovorax* sp. reduces environmental stress of plant  
\*Yasuhiro Tsukamoto<sup>1</sup>, Noritaka Nakamura<sup>1</sup>, Ryo Hasegawa<sup>1</sup>, Kota Kitagawa<sup>1</sup>, Hisayo Sakamoto<sup>1</sup>,  
Yoshitake Orikasa<sup>1</sup>, Kazuyuki Okazaki<sup>2</sup>, Seishi Ikeda<sup>2</sup>, Takuji Ohwada<sup>1,3</sup>  
<sup>1</sup>Obihiro University of Agriculture and Veterinary Medicine, <sup>2</sup>NARO Hokkaido Agricultural Center,  
<sup>3</sup>United Graduate School of Agricultural Sciences, Iwate University

**P5** Cloning and heterologous expression of the lipopeptide synthase genes from *Ralstonia solanacearum*  
\*Kanta Morishige<sup>1</sup>, Kenji Kai<sup>2</sup>, Naotaka Tanaka<sup>1</sup>, Mitsuaki Tabuchi<sup>1</sup>  
<sup>1</sup>Kagawa Univ., <sup>2</sup>Univ. Osaka Pref.

**P6** Analysis of genetic basis of *Pseudomonas syringae* pv. *actinidiae* biovar 3 pathogenesis in Kiwifruit  
\*Saito Miou<sup>1</sup>, Fujiwara Syouko<sup>1</sup>, Kawaguchi Mizuki<sup>1</sup>, Hirata Atsushi<sup>1</sup>, Sasa Naomi<sup>1</sup>, Kisaki Gan<sup>2</sup>,  
Akimitsu Kazuya<sup>1</sup>, Gomi Kenji<sup>1</sup>, Konishi-Sugita Saeko<sup>1</sup>, Hamano Kouhei<sup>2</sup>, Tanaka Naotaka<sup>1</sup>, Ohtani Mamoru<sup>2</sup>, Kataoka Ikuo<sup>1</sup>, Tabuchi Mitsuaki<sup>1</sup>  
<sup>1</sup>Kagawa Univ., <sup>2</sup>Fuchu Fruit Tree Experiment Branch

**P7** Functional analysis of *Ralstonia solanacearum* RipAA effector using yeast and plant expression

system

\*Saki Shirai<sup>1</sup>, Atsushi Hirata<sup>1</sup>, Takato Kitasono<sup>1</sup>, Shoko Fujiwara<sup>1</sup>, Naotaka Tanaka<sup>1</sup>, Marc Valls<sup>2</sup>, Mitsuaki Tabuchi<sup>1</sup>

<sup>1</sup>Kagawa Univ., <sup>2</sup>Universitat de Barcelona

P8 Identification of transposon insertion sites for the transposon insertion library of *Mesorhizobium loti*

\*Tsuneo Hakoyama<sup>1</sup>, Atsuko Hirota<sup>1</sup>, Shouko Yamazaki<sup>1</sup>, Shuhei Kuge<sup>1</sup>, Kai Battenberg<sup>1</sup>, Yosikazu Shimoda<sup>2</sup>, Akihiro Yamazaki<sup>1</sup>, Makoto Hayashi<sup>1</sup>

<sup>1</sup>Riken CSRS, <sup>2</sup>NARO NIAS

P9 Characterizing hydrogenase activity of *Bradyrhizobium diazoefficiens* USDA110

\*Norikuni Ohtake<sup>1</sup>, Takumi Nishikata<sup>1</sup>, Kenji Watanabe<sup>1</sup>, Soushi Takeda<sup>1</sup>, Kuni Sueyoshi<sup>1</sup>, Kiwamu Minamisawa<sup>2</sup>, Takuji Ohyama<sup>3</sup>

<sup>1</sup>Niigata Univ., <sup>2</sup>Tohoku Univ., <sup>3</sup>Tounou Univ.

P10 Comparative analysis of conserved genomic island:GI02 in the soybean symbiont *Bradyrhizobium elkanii* strains

\*Yudai Gamo<sup>1</sup>, Manabu Itakura<sup>1</sup>, Kiwamu Minamisawa<sup>3</sup>, Takakazu Kaneko<sup>1</sup>

<sup>1</sup>Kyoto Sangyo Univ., <sup>2</sup>Tohoku Univ.

P11 Screening of rhizobia from sugarcane for producing wasanbon in Kagawa.

\*Natsuki Shimoura<sup>1</sup>, Supriadi<sup>1</sup>, Shigeyuki Tajima<sup>1</sup>, Mika Nomura<sup>1</sup>

<sup>1</sup>Laboratory of Plant Nutrition, Faculty of Agriculture, Kagawa Univ.

P12 Plant growth promoting and nitrogen-fixing bacteria associated with endemic varieties of *Phaseolus vulgaris* from Venezuela

\*Artigas R.M.D.<sup>1</sup>, España M.<sup>2</sup>, Nishizawa T.<sup>3</sup>, Okazaki S.<sup>4</sup>, Ohkama-Ohtsu N.<sup>1,5</sup>, Yokoyama T.<sup>5,6</sup>

<sup>1</sup>Institute of Global Innovation Research, Tokyo University of Agriculture and Technology, <sup>2</sup>Institute for Advanced Studies, Venezuela, <sup>3</sup>Department of Food and Life Sciences, Ibaraki Univ., <sup>4</sup>United Graduated School of Agriculture, Tokyo University of Agriculture and Technology, <sup>5</sup>Institute of Agriculture, Tokyo University of Agriculture and Technology, <sup>6</sup>Faculty of Food and Agricultural Science, Fukushima Univ.

P13 Symbiotic nitrogen fixation in soybean inoculated with rhizobia isolated from *Clitoria ternatea*

\*Supriadi<sup>1</sup>, Natsuki Shiomura<sup>1</sup>, Shin Okasaki<sup>2</sup>, Shigeyuki Tajima<sup>1</sup>, Mika Nomura<sup>1</sup>

<sup>1</sup>Faculty of Agriculture, Kagawa University, <sup>2</sup>Tokyo University of Agriculture and Technology

P14 Interaction of *Bradyrhizobium diazoefficiens* USDA110 and *Bacillus velezensis* S141 promoting soybean growth and symbiotic nitrogen fixation.

\*Takahiko KONDO<sup>1</sup>, Surachat Sibponkrung<sup>2</sup>, Panlada Tittabutr<sup>2</sup>, Nantakorn Boonkerd<sup>2</sup>, Neung Teamroong<sup>2</sup>, Ken-ichi YOSHIDA<sup>1</sup>

<sup>1</sup>Kobe Univ., <sup>2</sup>Suranaree University of Tech.

P15 Analysis of the root nodule symbiosis depending on wild accessions of *Lotus japonicus* inoculated with *Bradyrhizobium* sp.

\*Makoto Taniuchi<sup>1</sup>, Stig U. Andersen<sup>2</sup>, Tomomi Wakabayashi<sup>3</sup>, Yasuyuki Kawaharada<sup>1,4</sup>

<sup>1</sup>Iwate Univ. Grad. Sch., <sup>2</sup>Aarhus Univ. Dept. MBG, <sup>3</sup>Nara Women's Univ. CORE of STEM, <sup>4</sup>Iwate Univ. Dept. Agr.

P16 Investigation of mutagenesis techniques by ion beam irradiation of different chemical elements in *Lotus japonicus*

\*Tomomi Hamaguchi<sup>1</sup>, Yahata Masaki<sup>1</sup>, Shimokawa Takashi<sup>2</sup>, Hashiguchi Masatsugu<sup>3</sup>, Akashi Ryo<sup>3</sup>, Tominaga Akiyoshi<sup>1</sup>

<sup>1</sup>Shizuoka Univ., <sup>2</sup>NIRS., <sup>3</sup>Miyazaki Univ.

P17 Progress in single-cell RNAseq analysis of *Lotus japonicus* roots at the early stages of nodule organogenesis

\*Kai Battenberg<sup>1</sup>, S. Thomas Kelly<sup>2</sup>, Nicola Hetherington<sup>2</sup>, Aki Minoda<sup>2</sup>, Makoto Hayashi<sup>1</sup>

<sup>1</sup>RIKEN Center for Sustainable Resource Science, <sup>2</sup>RIKEN Center for Integrative Medical Sciences

P18 Isolation of epidermis-specific symbiotic genes by transcriptome analysis of root hairs in *Lotus japonicus*

\*Mayu Kawasaki<sup>1</sup>, Akira Akamatsu<sup>1</sup>, Madoka Yonekura<sup>2</sup>, Satoshi Kondo<sup>2</sup>, Naoya Takeda<sup>1</sup>

<sup>1</sup>Kwansei-Gakuin Univ., <sup>2</sup>Agri. & Biotech. Busi. Div., Toyota Motor Corp.

P19 Study on the causative gene involved in trichome formation in *Lotus japonicus*

\*Ikuko Kusaba<sup>1</sup>, Satomi Kawano<sup>1</sup>, Yukina Yamaguchi<sup>1</sup>, Akiyoshi Tominaga<sup>1</sup>, Aiko Ide<sup>1</sup>, Shusei Sato<sup>2</sup>, Susumu Arima<sup>1</sup>, Akihiro Suzuki<sup>1</sup>

<sup>1</sup>Saga Univ., <sup>2</sup>Tohoku Univ.

P20 Identification of *Arabidopsis* LysM-type receptors involved in immune response induced by polymeric chitin

\*Keigo Naito<sup>1</sup>, Sumire Matsukawa<sup>1</sup>, Mai Yoshioka<sup>2</sup>, Roxana Y. Parada<sup>2</sup>, Mayumi Egusa<sup>2</sup>, Shinsuke Ifuku<sup>3</sup>, Hironori Kaminaka<sup>2</sup>

<sup>1</sup>Grad Sch. Agr., Tottori Univ., <sup>2</sup>Fac. Agr., Tottori Univ., <sup>3</sup>Grad Sch. Eng., Tottori Univ.

P21 Search for chitin receptors and isolation of Ca spiking induced genes in *Lotus japonicus*

\*Mayu Higashi<sup>1</sup>, Miwa Nagae<sup>2</sup>, Akira Akamatsu<sup>1</sup>, Naoya Takeda<sup>1</sup>

<sup>1</sup>Kwansei Gakuin Univ., <sup>2</sup>NIBB

P22 The functional analysis of *Serpin* in root nodule symbiosis

\*Ami Shindo<sup>1</sup>, Miwa Nagae<sup>2</sup>, Akira Akamatsu<sup>1</sup>, Naoya Takeda<sup>1</sup>

<sup>1</sup>Kwansei Gakuin Univ., <sup>2</sup>NIBB

P23 Functional analysis of Dof3 transcription factor in *Lotus japonicus* nodule

\*Yasuhiro Ueta, Kana Natsume, Shigeyuki Tajima, Mika Nomura

Laboratory of Plant Nutrition, Faculty of Agriculture, Kagawa Univ.

P24 Isolation and characterization of Dof1 transcription factor in *Lotus japonicas* nodule

\*Kana Natsume, Masahiro Miyaji, Yasuhiro Ueta, Supriadi, Shigeyuki Tajima, Mika Nomura  
Kagawa Univ

P25 Functional analysis of *L. japonicus* Qa-SNARE gene *LjSYP132*

\*Aoi Sogawa, Issei Takahashi, Hiroki Yamasaki, Shigeyuki Tajima, Mika Nomura

Kagawa Univ

P26 Effect of far-red (FR) light transmitted from the aerial part of the plant to the root on arbuscular mycorrhizal symbiosis

\*Kyoko Teshima, Hatsuki Yamashita, Kie Saito, Susumu Arima, Akihiro Suzuki,

Saga Univ.

P27 Functional analysis of small secreted protein SIS1 isolated from arbuscular mycorrhizal fungi

\*Yasunori Maeda<sup>1</sup>, Miwa Nagae<sup>2</sup>, Akira Akamatsu<sup>1</sup>, Naoya Takeda<sup>1</sup>

<sup>1</sup>Kwansei Gakuin Univ., <sup>2</sup>NIBB

P28 Role of polyphosphate metabolism in P transfer of arbuscular mycorrhiza

Nguyen Thi Cuc, \*Katsuharu Saito

Shinshu Univ.

**P29** Investigation on promoting substances for spore maturation of AM fungi in pure culture  
\*Shiori Marui, Hiromu Kameoka, Kohki Akiyama  
Osaka Pref. Univ.

**P30** Development of photoaffinity probe for the identification of hetero-chitooligosaccharides receptor protein  
\*Kentarō Hirooka, Koyo Nojima, Koki Akiyama  
Osaka Pref. Univ

**P31** Promotion of arbuscular mycorrhizal symbiosis in plants treated with chitins  
\*Hinako Kawakami<sup>1</sup>, Takaya Tominaga<sup>1</sup>, Shinsuke Ifuku<sup>2</sup>, Hironori Kaminaka<sup>3</sup>  
<sup>1</sup>Grad Sch. Agr., Tottori Univ., <sup>2</sup>Grad Sch. Eng., Tottori Univ., <sup>3</sup>Fac. Agr., Tottori Univ.

**P32** Analysis of mycorrhiza morphology in the endangered species *Vaccinium sieboldii* and *Pinus densiflora*.  
\*Yuna Uchiyama<sup>1</sup>, Sota Yamazaki<sup>1</sup>, Masaki Yahata<sup>1</sup>, Yuuki Kobayashi<sup>2</sup>, Masayoshi Kawaguchi<sup>2</sup>, Akiyoshi Tominaga<sup>1</sup>  
<sup>1</sup>Shizuoka Univ., <sup>2</sup>NIBB.

**P33** Changes in soybean root-associated bacterial community under nitrogen deficient condition  
\*Wataru Yazaki, Tomohisa Shimasaki, Kazufumi Yazaki, Akifumi Sugiyama  
Kyoto Univ.

**P34** Expression of *Acs* gene from sweet potato T-DNA and root microbiome in tobacco  
\*Aiko Tanaka<sup>1</sup>, Daigo Takemoto<sup>1</sup>, Takamasa Suzuki<sup>2</sup>, Kazuma Uesaka<sup>1</sup>, Nobuo Yamaguchi<sup>3</sup>, Motoyasu Otani<sup>4</sup>, Osamu Nakayachi<sup>4</sup>, and Nobukazu Tanaka<sup>3</sup>  
<sup>1</sup>Nagoya Univ., <sup>2</sup>Chubu Univ., <sup>3</sup>Hiroshima Univ., <sup>4</sup>Ishikawa Pref. Univ.

**P35** Variation of plant-associated microbiota with induction of heterophylly in *Rorippa aquatica*  
\*Manabu Itakura, Yuki Ishizuka, Seisuke Kimura, Kaori Kaminoyama, Takakazu Kaneko  
Kyoto Sangyo Univ.

**P36** Arbuscular mycorrhizal fungi in *Sceptridium* with myco-heterotroph-to-autotroph life cycle  
\*Kazuki Kato<sup>1</sup>, Atsushi Ebihara<sup>2</sup>, Masaru Bamba<sup>1</sup>, Yasuyuki Watano<sup>3</sup>  
<sup>1</sup>Grad. Chiba Univ., <sup>2</sup>Natl. Mus. Nat. Sci., <sup>3</sup>Chiba Univ.

**P37** Effects of Biochar and Biofertilizer on Plant Growth, Root and Rhizosphere Microbial Community of Rice  
\*Yoshinari Ohwaki<sup>1</sup>, Khin Thuzar Win<sup>1</sup>, Keiki Okazaki<sup>1</sup>, Naoko Ohkama-Ohtsu<sup>2</sup>, Tadashi Yokoyama<sup>2</sup>  
<sup>1</sup>NARO Central Region Agricultural Research Center, <sup>2</sup>Tokyo University of Agriculture and Technology

**P38** Field dynamics and bacterial isolation of rice-associated microbiome on nutrient-deficient soil  
Yukiko Shimizu, Yuniar Devi Utami, Masako Fuji, Yusuke Saijo  
Div. Bio. Sci., NAIST

**P39** Comparison of rhizosphere microbiomes between wild and cultivated strawberry species.  
\*Tatsuya Yoshimoto<sup>1</sup>, Turgut Yigit Akyol<sup>2</sup>, Shusei Sato<sup>2</sup>, Hideki Hirakawa<sup>3</sup>, Erika Asamizu<sup>1</sup>  
<sup>1</sup>Ryukoku Univ., <sup>2</sup>Tohoku Univ Graduate School of Life Sciences., <sup>3</sup>Kazusa DNA Res. Inst.