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1. Second issue of PSSNet magazine in English

In this issue, we continue with our English series of PSSNet magazine. Although this issue will be released on Friday-13th, which is considered an unlucky day in Western superstition, I hope the magazine brings only good news to all of our subscribers. Especially, please check the important announcements about collaboration opportunities that have just opened for the next year, and new paper releases in the field of plant (stress) science.

2. Information about MEXT Joint Research program at IPSR in 2021

Applications for the next year's Joint research at IPSR are now possible from the IPSR website in three categories A (Priority research), B (Young research), and C (General research). Details about each category, application procedures (in Japanese), and application forms can be downloaded from the IPSR website:

<http://www.rib.okayama-u.ac.jp/collaboration/collaboration1.html>

Deadlines for applications:

A (Priority research) & B (Young research):

11-December, 2020

C (General research):

12-January, 2021

For additional information please contact IPSR office

directly by E-mail : kyodo1247@adm.okayama-u.ac.jp

3. Student recruitment - Online Graduate School Briefings

The Institute of Plant Science and Resources is an excellent place for graduate students to engage in various aspects of plant research. The Institute will be holding two online briefing sessions via Zoom on the following dates:

17-December 2020 (Thursday) 13:00~16:00

21-December 2020 (Monday) 13:00~16:00

Registration page (Japanese):

<https://www.rib.okayama-u.ac.jp/nucleus/Daigakuin/setsumeikai2020Sep.html>

Information page (English):

<https://www.rib.okayama-u.ac.jp/Education2020/setsumeikaiOL.html>

[Q&A] (English - Japanese)

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4. Joint research introductions * 68-th series *

In this column, we invite foreign researchers who participated in the Joint Research Center International Program and ask them to share with us their personal experiences. In November, we received a letter from Philippines, which was contributed by Dr. Ana Cope from IRRI. Ana is a biologist working on fungal viruses. As also mentioned in her letter, she earlier received her PhD degree from IPSR.

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Personal Institute of Plant Science and Resources (IPSR)
experience

It feels good to be back at IPSR. That was the exact phrase I uttered when I visited the institute in May 2017 after returning to the Philippines for good in January 2015. That visit was followed by another one in 2018 and in 2019.

When I returned to the Plant-Microbe Interactions (PMI) Laboratory, after working in a completely different role in a project in my country that requires more supervisory skills rather than knowledge in biological sciences, I had to brush-up on my laboratory skills necessary to conduct a one-month research. But for me, it was like "what the mind forgets, the hands remember"-type of experience. Everything came back to me easily. I devoted my every waking hour performing what I love doing the most, experiments!

Looking back at my 11 years at IPSR, I started there as a graduate research student in a PhD program. Eventually, I landed a postdoctoral position in the same laboratory under the auspices of Prof. Nobuhiro Suzuki, my adviser and mentor on mycovirus research. The purpose of my first visit to the institute was to conclude some of the experiments that I initiated in the past such as the mitochondrially replicating mycovirus of *Cryphonectria parasitica* and artificial introduction of mycoviruses in *Neurospora crassa*.

My two successive visits were part of the International Rice Research Institute (IRRI) Seed Grant in 2018 awarded to me

for my research proposal on mycoviruses of phytopathogenic fungi affecting rice. I selected two students to work with me on the mycoviruses in *Magnaporthe oryzae* (rice blast pathogen) and *Rhizoctonia solani* (sheath blight pathogen), as these promoted the science of mycological virology in our national university for the first time. One of them, Michael Louise Urzo, an MS student from the University of the Philippines Los Banos joined me during my visit to the institute in 2019 through a research grant of Prof. Suzuki. He conducted his research on the screening and molecular characterization of mycoviruses infecting *M. oryzae* at PMI for three months. Michael was so impressed with the staff and students of PMI for devoting so much of their time in the lab making mycovirus research their "day" and "night" life. Michael described it as "the lab that never sleeps."

However, he added that, though all are serious workers, there was always time for fun stuff like the hanami (Cherry blossom viewing) that members of the lab, teaching and office staff, and students enjoyed together. "This is how one should live his life, giving attention to work-life balance," he said.

Prof. Suzuki and the rest of the PMI staff graciously hosted both of us in our work on characterizing the fungal viruses infecting fungi pathogenic to rice. Despite the lack of facility to conduct such research in our place, Prof. Suzuki gave us a head start in staging mycovirus research not only in our institute and university but also in our country with his support.

My visits to IPSR would not have been possible without the assistance of the IPSR Joint Research Center International Program, led by Prof. Ivan Galis, and the other project research grants of Prof. Suzuki.

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5. Recent publications

Lau, ET; Tani, A; Khew, CY; Chua, YQ, Hwang, SS
Plant growth-promoting bacteria as potential
bio-inoculants and biocontrol agents to promote black
pepper plant cultivation
MICROBIOLOGICAL RESEARCH 240: 126549 (2020)
<https://doi.org/10.1016/j.micres.2020.126549>

Raviv, B; Khadka, J; Swetha, B; Singiri, JR; Grandhi, R;
Shapira, E; Novoplansky, N; Gutterman, Y; Galis, I;
Sternberg, M; Grafi, G
Extreme drought alters progeny dispersal unit properties
of winter wild oat (*Avena sterilis* L.)
PLANTA 252 (5): 77 (2020)
<https://doi.org/10.1007/s00425-020-03491-2>

Chang, JD; Huang, S; Konishi, N; Wang, P; Chen, J; Huang,
XY; Ma, JF; Zhao, FJ

Overexpression of the manganese/cadmium transporter
OsNRAMP5 reduces cadmium accumulation in rice grain
JOURNAL OF EXPERIMENTAL BOTANY:71 (18): 5705-5715 (2020)
<https://doi.org/10.1093/jxb/eraa287>

Ye, W; Munemasa, S; Shinya, T; Wu, W; Ma, T; Lu, J;
Kinoshita, T; Kaku, H; Shibuya, N; Murata Y
Stomatal immunity against fungal invasion comprises not
only chitin-induced stomatal closure but also
chitosan-induced guard cell death
PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE
UNITED STATES OF AMERICA: 117(34): 20932-20942 (2020)
<https://doi.org/10.1073/pnas.1922319117>

Kouzai, Y; Shimizu, M; Inoue, K; Uehara-Yamaguchi, Y;
Takahagi, K; Nakayama, R; Matsuura, T; Mori, IC; Hirayama,
T; Abdelsalam, SSH; Noutoshi, Y; Mochida, K
BdWRKY38 is required for the incompatible interaction of
Brachypodium distachyon with the necrotrophic fungus
Rhizoctonia solani
PLANT JOURNAL (Online ahead of print)
<https://doi.org/10.1111/tpj.14976>

Chikoti, YF; Supriadi; Duangkhet, M; Chungopast, S;
Tajima, S; Ma, JF; Nomura, M
Effect of ferritin on nitrogen fixation in Lotus japonicus
nodules under various iron concentrations
JOURNAL OF PLANT PHYSIOLOGY: 252:153247
<https://doi.org/10.1016/j.jplph.2020.153247>

Tamada, T; Uchino, H; Kusume, T; Iketani-Saito, M; Chiba,
S; Andika, IB; Kondo, H
Pathogenetic roles of beet necrotic yellow vein virus RNA5
in the exacerbation of symptoms and yield reduction,
development of scab-like symptoms, and Rz1-resistance
breaking in sugar beet
PLANT PATHOLOGY (Online ahead of print)
<https://doi.org/10.1111/ppa.13266>

Kiba, A; Fukui, K; Mitani, M; Galis, I; Hojo, Y; Shinya,
T; Ohnishi, K; Hikichi, Y
Silencing of phosphoinositide dependent protein kinase
orthologs reduces hypersensitive cell death in Nicotiana
benthamiana
PLANT BIOTECHNOLOGY 37 (3) 363-367 (2020)
<https://doi.org/10.5511/plantbiotechnology.20.0511b>

6. Posting request

In the PSSNet E-mail magazine and website, we aim to share
various information about research in plant (stress)
science. We cordially invite all PSSNet members to
contribute information about their latest publications,
meetings and seminars, staff, postdoc, and student
recruitments, etc. Please send your information directly
to [pssnet-admin@okayama-u.ac.jp] E-mail address.

7. Column from the issue Editor

As an Editor of this issue, in the midst of the COVID-19 crisis, it is very hard for me to divert to another theme for my closing remark. While second massive wave of pandemics is gaining its powers in Europe, and elsewhere, we can only hope that similar situation will not occur here in Japan. Emphasizing the importance of science, world researchers are struggling to develop efficient vaccines but necessary testing and safety approvals take much time, while SARS-CoV-2 is devastating virtually all continents, taking its high toll. Physical, moral, and economical.

As a scientist, I keep asking if we could have been better prepared for this crisis. Spanish flu pandemic of 1918, more recent SARS outbreak, and other dramatic events in human history should have given us sufficient warnings. Keep us more alert and braced for the next possible pandemics.

As a plant biologist, I was always intrigued by the idea of "edible" vaccines. I think that it is not an easy task but it would be readily applicable and cheap solution in case of crises like COVID-19. Interestingly, attempts to develop such vaccines against corona viruses have already been made, suggesting that in the future, even plant biologists may be able to put their hands together for making this world a safer place to live.

www.pnas.org/cgi/doi/10.1073/pnas.0503760102)

As an ordinary human, I can only wear mask and keep social distancing to protect myself and others from infection. Honestly, I feel like it makes this world a smileless place.

Nevertheless, we should keep our spirits high and hope for brighter future to return in the sight very soon!

[Plant Stress Science Network Mail Magazine]
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■ WEB <http://www.rib.okayama-u.ac.jp/pssnet/>

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