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 Plant Stress Science Network

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1. Preface

In my home county, we say that summer months are a "cucumber season" for news. What it means is that there are not so many news during summer, maybe because people try to relax and think more about holidays than politics. I think it is quite different for researchers, especially at the universities in Japan. Finally freed from lectures and duties, most scientists enjoy summer as their main research season. Not speaking of people working with rice like me! There is nothing more exciting than browsing paddy field in the middle of a hot-burning summer day in Japan! This statement has - of course ironical meaning. Not sure what "irony in language" means? Check my Postscript for explanation or look in Vol. 82, where I have, once, been touching this point already...

2. International Plant Web Forum 2021

The Institute of Plant Science and Resources (IPSR), Okayama University will hold an International Plant Web Forum 2021 on September 6-7, 2021.

The forum will consist of two sessions: the IPSR International Workshop by Early Career Researchers, which will feature presentations and discussions by early-career researchers, and presentations by distinguished researchers in various fields of plant science. We are calling for poster presentations from a wide range of research fields, which will provide an excellent opportunity to deepen scientific exchange among participants.

One of the main objectives of this forum is to support early-career researchers. There will be opportunities for interaction with invited speakers and possibility of active promotion to oral presentations for earlycareer researchers, and we therefore welcome the active participation of all early career researchers.

This is an international forum that you can enjoy without being bothered by the time difference. We look forward to seeing you in the forum!

Date: September 6-7, 2021 (Japan time: UTC+9) Venue: Online

Website & detailed program: https://www.rib.okayama-u.ac.jp/information/webforum2021/

Free registration: https://docs.google.com/forms/d/e/1FAIpQLSdf70j1 9zAaRE9JaC7jRtbSldfzhlEkaWoc lnY6JRFDf9iw/viewform

Abstract submission for poster: July 12 - August 9, 2021 Registration: July 12 - August 25, 2021

Invited Speakers: Regine Kahmann (Max Planck Institute for Terrestrial Microbiology) Takashi Akagi (Okayama University) Caitlin Byrt (Australian National University) Yen-Ping Hsueh (Academia Sinica) Keiji Nishida (Kobe University) Kenichi Tsuda (Huazhong Agricultural University) Ertao Wang (CAS Center for Excellence in Molecular Plant Sciences) Satoko Yoshida (Nara Institute of Science and Technology)

Contact: kyodo1247@adm.okayama-u.ac.jp

3. Recently released publications

Mujiono, K; Tohi, T; Sobhy, IS; Hojo, Y; Shinya, T; Galis, I Herbivore-induced and constitutive volatiles are controlled by different oxylipin-dependent mechanisms in rice. PLANT, CELL AND ENVIRONMENT: On line first (2021) https://doi.org/10.1111/pce.14126

Mori, I.C.; Arias-Barreiro, C.R.; Ooi, L.; Lee, N.H.; Sobahan, M.A.; Nakamura, Y.; Hirai, Y.; Murata, Y. Cadmium uptake via apoplastic bypass flow in Oryza sativa. Journal of Plant Research [Online first] (2021) https://doi.org/10.1007/s10265-021-01319-y

Ogasawara, M; Miyazaki, N; Monden, G; Taniko, K; Lim, S; Iwata, M; Ishii, T; Ma, JF; Ishikawa, R Role of qGZn9a in controlling grain zinc concentration in rice, Oryza sativa L. THEORETICAL AND APPLIED GENETICS: On line first (2021) https://doi.org/10.1007/s00122-021-03873-4

Wakamatsu, A., Mori, I.C., Matsuura, T., Taniwaki, Y., Ishii, R., Yoshida, R. Possible roles for phytohormones in controlling the stomatal behavior of Mesembryanthemum crystallinum during the salt-induced transition from C3 to crassulacean acid metabolism. Journal of Plant Physiology 262, 153448 (2021) https://doi.org/10.1016/j.jplph.2021.153448

Okamura, E., Ohtaka, K., Nishihama, R., Uchida, K., Kuwahara, A., Mochida, K., Hirai, M.Y. Diversified amino acid-mediated allosteric regulation of phosphoglycerate dehydrogenase for serine biosynthesis in land plants. Biochemical Journal 478, 2217-2232 (2021) https://doi.org/10.1042/BCJ20210191

Inagaki, H; Miyamoto, K; Ando, N; Murakami, K; Sugisawa, K; Morita, S; Yumoto, E; Teruya, M; Uchida, K; Kato, N; Kaji, T; Takaoka, Y; Hojo, Y; Shinya, T; Galis, I; Nozawa, A; Sawasaki, T; Nojiri, H; Ueda, U; Okada, K Deciphering OPDA signaling components in the momilactone- producing moss Calohypnum plumiforme. FRONTIERS IN PLANT SCIENCE 12: 987 (2021). https://doi.org/10.3389/fpls.2021.688565

Rikiishi, K; Sugimoto, M; Maekawa, M Transcriptomic analysis of developing seeds in a wheat (Triticum aestivum L.) mutant RSD32 with reduced seed dormancy. BREEDING SCIENCE 71(2): 155-166 https://doi.org/10.1270/jsbbs.20016

Wari, D; Kuramitsu, K; Kavallieratos, NG Sap-Sucking Pests; They Do Matter. INSECTS 12(4): 363 (2021) https://doi.org/10.3390/insects12040363

4. International Joint Research introductions * 76-th series *

In July, we received a letter from Ethiopia written by Dr. Hewan Demissie. Hewan is a plant breeder working on barley. She visited Japan several times under the auspices of Prof. Sato from the Barley and Wild Plant Center. Hope you will enjoy a short story that is radiating her deep passion for Japanese people and culture!

The voyage to Wisdom and Understanding!

It was in 2018, I have got a request from Hawassa University to work on barley. I have been stressed at first because I have never been working on barley in my previous researches. My method of learning about different crop plants was using extensive literature reviews. Following my predecessor student at Tsukuba University, I started my literature review from studies in Japan. I asked my Master's and Ph.D. supervisor, Professor Tatsuhito Fujimura. For me the best person to describe me better is him. He knows my ups and downs. He guided me towards science with his caring and nurturing spirit and support. I called him from my mobile phone directly. And asked him how he can help me with my future research.

He directed me to Professor Kazuhiro Sato. As usual, I started browsing the website and downloading the research papers done by Professor Sato. My interest was especially on acid stress tolerance of barley. When I found his paper from Nature publication, I was delighted for two reasons. First, because the work is done in Japan, the country I admire and respect. Second, the work is so detailed and was easy to understand with good references for each step and activity. These helped me to learn about his laboratory. Then, I decided to write him an email. And from that first email exchange, I started learning about Okayama, Kurashiki, and IPSR. Through the email conversation, I got a chance to visit IPSR, Kurashiki campus. In the process, I have learned, the unique nature of Japan. When documents are sent, they contain all the necessary details with clear information. Finally, I got a

visa for Japan and I landed in Japan, after ten years of my departure. The airport's smell, bus ride to Haneda Airport, and my flight to Okayama all were filled with smiles and happiness. Eating onigiri and drinking my favorite tea (ulong cha), seeing all the things which I missed from Japan were my memorable parts of the trip. Even I visited the Lawson, 7-Eleven, and McDonald's found in the airport and train stations. Above all, seeing my former academic advisor Professor Fujimura and my seniors in my former laboratory was part of the delight I never forget. I felt like I was reincarnated, as in the Japanese saying 'umare kawari 生まれ変わり'. It was the moment that I realized how my life is connected to Japan. I never have had a single doubt about this country. I still have full confidence that I am part of Japan. It seems the God of Japan already welcomed me. That must be why I feel peace, ease, the most calmness, and gentleness in myself since I landed in this beautiful country.

I took the afternoon flight to Okayama and arrived at the airport station. From the airport, I took a bus. The well-organized station, the respectful driver made me think that there is a heaven on earth. To have the spirit of gratefulness and respect, service to the human beings in all the jobs we are doing are indeed signs of the ultimate mind development and synchronization to the heaven world. On the way to Kurashiki, I met a British Scientist who was also traveling for the same cause to the IPSR. We got introduced to each other and started talking about Japan. She was overwhelmed as everything was exciting for her. I could see that her curious eyes were enjoying the view and the beauty of the sights from the airport up to Kurashiki.

At Kurashiki station, Professor Sato was waiting for us. The humble and kind professor took us for a lunch. I was served my favorite dish the delicious noodle. And then, we began our voyage to Kurashiki's IPSR campus. I started my research from the first day I landed at Kurashiki; every day I was learning, improving, and advancing. I was exposed to a completely different world of science. I aimed to find the gene controlling acid tolerance, but now I am looking to the domestication process of the Ethiopian barely. I have never expected to be overwhelmed by barley research, but the research at Kurashiki campus gave me wings to explore more. Every day I am thankful for the great efforts they make for the development of science and research on barely. The training on genomics of Triticeae gave me tools to search more to the genome of barley. The experience from the laboratory enabled me to design and develop mini projects in my home country. After returning home from Japan, I was able to work with several multiple students on screening acidtolerant barley from Ethiopia, the ethnobotanical aspect of barley use, and the diversity. From this research project, I could advise six master's students of whom three of them graduated with an excellent grade for their theses. This created research interest on the Ph.D. students whom I and Professor Sato were supervising, particularly on the barley genome structure variant from Ethiopia.

The presence of an advanced laboratory, dedicated and highly professional laboratory members are the reasons for my success. I like to thank Professor Sato, his collaborative laboratory members, the Ohara foundation for making my travel to Japan, and the IPSR for the valuable contribution to my life. From the big light I got from IPSR, I could shine this knowledge of wisdom to the Ethiopian young students, who are eager to learn and gain wisdom. Currently, I managed to collect more than 1000 barley accessions from Ethiopia. I could adopt the protocol developed at IPSR to screen acid tolerance. Even the thematic research from Hawassa University was influence by the good knowledge of IPSR through their publication. Now, I am advancing the barley lines breed from Murasakimochi (acid-tolerant) and Ethiopian barley accessions, now the lines are at F3 stage, which needs to be planted this year too, to get the F4. I have two acid-tolerant barley accessions, which need to be tested using transcriptome and proteomic analysis. I am now organizing my research with the knowledge I gained from IPSR. Currently, there is a collaborative effort started between the IPSR and Hawassa University.

Once again, I like to thank Professor Sato for giving me such an opportunity to involve in this research, and to the Ohara foundation for their financial support; for the International IPSR Joint Usage/Research Center Research for their financial and logistic support for genotyping the 30 Ethiopian barley landraces collected from Gumer, Gurage, Ethiopia; without them, I could not have done this much research on the barley of Ethiopia.

Let me, finally, express my thanks to all members of the IPSR laboratory for their kindness and hospitality. I am also deeply grateful for the inspiring culture of Japan, which took my heart away since the day I landed in Japan in March 2002. Since that day, I never able to stop thinking about Japan. This all happened because of the hard work of the Japanese people for making life possible, enjoyable, and beautiful through their wisdom, innovation, hard work, persistence, and patience.

THANK YOU SO MUCH. 心より感謝申し上げます。

5. 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 subscribers 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.

6. Postscript from the issue Editor

Irony in language - do not get misled!

"Irony in its broadest sense, is a rhetorical device, literary technique, or event in which what on the surface appears to be the case or to be expected differs radically from what is actually the case" (as Quoted from Wikipedia (https://en.wikipedia.org/wiki/Irony))

Even after reading the Wikipedia quote, I think you are not much closer to the idea what it really means... But in many cases, irony can present a cultural problem for some Japanese people who are not aware of its existence. I think, it is not imaginable in Japan that someone would be loudly saying something but thinking (feeling) in completely opposite way. Yet, it is very common in western culture. For example, something looks ugly but - if one would look and say "It is really beautiful", putting a particular emphasize on the word "really" - the bell in my head would start ringing. This person does not like it at all...

So when I say "There is nothing more exciting than browsing paddy field in the middle of a hot-burning summer day in Japan!" in my Preface, I actually mean that I hate going out in the summer, sweating in the rice field. But, it

is my job and I will go again this summer to collect my data, hoping for the Nature paper next year. But "I really hate Nature". What do you think? Irony or truth? Some Westerners can be complicated. Aren't they? [Plant Stress Science Network Mail Magazine] ■ Date of issue 9-July-2021 ■ Edited by Ivan Galis Publisher Okayama University Institute of Plant Science and Resources/Plant Stress Science Research Network (PSSNet) Committee ■ WEB http://www.rib.okayama-u.ac.jp/pssnet/ How to change/cancel email magazine registration: http://www.rib.okayama-u.ac.jp/pssnet/Registermember.htm Please refer to instructions on website (This email is delivered by Okayama University staff) _____ pssnetml mailing list pssnetml@okayama-u.ac.jp