



# 4th International Conference Organic Rice Farming and Production Systems

The 21th International  
Symposium of the Integrated  
Field Science Center

Tohoku University Sendai - Japan  
September 4 th - 7 th , 2023



This conference will be held at the conference room and online at the same time.



Language: Japanese and English.  
Simultaneous or consecutive interpretation will be provided.



Participation fee: Free  
Field trip and lunch fee separately

## Time schedule

2023 March	Call for Abstracts for Oral and Poster Presentations
April	Start of Registration
May	Deadline of Abstract Submission
June	Notification of Abstract Status
July	Deadline of Paper Submission
September 4th (Mon.)	PM Session
5th (Tue.)	Field Trip
6th (Wed.)	AM/PM Session We will have a reception and we will enjoy dishes made with local organic ingredients from 18:00 on September 6th (3,000 yen per person)
7th (Thu.)	AM Session

The conference aims to stimulate and foster exchanges between scientists, rice growers and other stakeholders in the organic rice production and commercialization chain. These exchanges, focused on organic rice production in different regions throughout the world, will be organized to

- 1) collect and assess practical knowledge and functions of current organic rice production systems,
- 2) discover applied innovations and identify obstacles that hinder further development of the systems,
- 3) analyze the impact of different types of organic rice production on food quality, health, and the environment,
- 4) strengthen the international innovation network on sustainable rice production,
- 5) explore the issues, levels, and consequences of a scale shift toward the mainstreaming of organic agriculture throughout the agri-food chain.

Background of the International Symposium on Organic Rice Production Systems :

The 1st International Symposium on Organic Rice Production Systems was held in September 2012 by the Montpellier Center of the French National Agricultural Research Institute. Since 2000, the center has been conducting participatory research in collaboration with farmers, focusing on promoting organic rice in the Camargue region, which extends to the delta at the mouth of the Rhone River. With the shared recognition of its participants towards the importance of promoting and encouraging international comparisons of organic rice production systems based on collaborative research outputs, succeeding symposiums were held in various locations: 2nd International Symposium in Milan, Italy, in September 2015 in the framework of the International EXPO Feeding the Planet, Energy for Life; and 3rd International Symposium in Porto Alegre, Brazil, in March 2018.

The 4th International Symposium was initially scheduled for August-September 2021 but was eventually postponed due to the Covid 19 pandemic, and related travel restrictions for both local and international participants.

# CALL FOR ABSTRACTS

## Language

The 4th International Conference on Organic Rice Farming and Production Systems (ORP4) Scientific Committee welcomes abstract submissions for oral, poster and video presentations. All abstracts should be written in **English** or in **Japanese**.

## Oral/Poster/Video Presentations

The conference will have plenary sessions only. An oral presentation in the plenary session is scheduled for 15 minutes. A video presentation should be recorded in advance within 15 minutes.

## Reviewing and Acceptance

All submitted abstracts will be reviewed by the conference committee which will decide those that will be accepted, and of those, which will be for oral, poster or video presentation based on their overall quality, impact, and relevance to the conference.

## Abstract

An abstract should be written in English within 2 pages according to the attached template below. Please send the abstract to conference email (orp2023@grp.tohoku.ac.jp) on or before 31 May 2023. If you have any inquiries, please contact us.

## Publication

After the presentation, authors have the option to submit their extended abstract for publication in the Journal of Integrated Field Science of Tohoku University.

## Scientific Committee

Jean-Marc Barbier (Agronomy, French National Institute for Agriculture, Food and Environment, Montpellier, France)  
Stefano Bocchi (Agroecology, University of Milan, Italy)  
Raymond Epp (Farmer, Menno Village, Japan)  
Kazumasa Hidaka (Agroecology, Ehime University, Japan)  
Koki Honma (Crop Science, Tohoku University, Japan)  
Keiichi Ishii (Rural Economics, Tohoku University, Japan)  
Nobuhiro Kaneko (Soil science, Fukushima University, Japan)  
Masakazu Komatsuzaki (Agronomy, Ibaraki University, Japan)  
Naoya Matsudaira (Rural economics, Kyoto University, Japan)  
Takuya Mineta (Agronomy, National Agriculture and Food Research Organization, Japan)  
Shigenori Miura (Agronomy, National Agriculture and Food Research Organization, Japan)  
Joji Muramoto (Agroecology, University of California, Santa Cruz, USA)  
Jean-Claude Mouret (Agronomy, French National Institute for Agriculture, Food and Environment, Montpellier, France)  
Yoshiaki Nishikawa (Rural Economics, Ryukoku University, Japan)  
Mizuhiko Nishida (Soil Science, Tohoku University, Japan)  
Sanae Sawanobori (Agroecology, Keisen University, Japan)  
Yudhvir Singh (Agronomy, Indian Agricultural Research Institute, India)  
Nina N. Shimoguchi (Rural Economics, Tokyo University of Agriculture, Japan)  
Tanaka Atsushi (Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries.)  
Hiroyuki Yasue (Rural Economics, National Agriculture and Food Research Organization, Japan)  
Douglas George De Oliveira (Agronomy, Santa Catarina State Institution for Agricultural Research and Rural Extension, Brazil)

## Organizational Committee

Atsuko Shigihara (Tohoku University)  
 Kunpei Hayashi (Fukushima University)  
 Koki Honma (Tohoku University)  
 Tomoko Imoto (Tohoku University)  
 Keiichi Ishii (Tohoku University)  
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 Takuya Mineta (National Agriculture and Food Research Organization)  
 Mizuhiko Nishida (Tohoku University)  
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## Program

<b>4th SEP.</b>	<b>Opening</b>	13:00	13:10	<b>Keiichi Ishii</b> (Organizer of ORP4)	
		13:10	13:15	<b>Shinichiro Ogura</b> (Director of Integrated Terrestrial Field Station, Tohoku University)	
		13:15	13:20	<b>Yoshimitsu Taniguchi</b> (President of the Japanese Society of Organic Agriculture Science)	
				Presenters	Original titles
	<b>Session 1</b>	13:20	13:25	Chair: <b>Atsushi Tanaka</b> (Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries, Japan)	
	<b>Trends in organic rice production - Japan, South Korea, Thailand and France</b>	13:25	13:40	Takeru Kusudo (Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries, Japan), Atsushi Tanaka	The Prevalence of Organic Rice Production in Japan: An Overview from the Census of Agriculture and Forestry
13:40		13:55	Jongin Kim KREI (Korea Rural Economic Institute) (online)	Environment-friendly rice production and consumption in Korea and future challenges	
13:55		14:10	Nalun Panpluem (SukhothaiThammathirat Open University), Changbin Yin	The Evaluation Management of Organic Rice Production by Farmers in Yasothon Province, Thailand	
14:10		14:25	Jean-Marc Barbier (French National Institute for Agriculture, Food and Environment), Jean Claude Mouret, Fanny Balma, Isabelle Michel, Laure Hossard, Sylvestre Delmotte, Santiago Lopez-Ridaura	Organic Rice Production in Camargue, France. A resilience glimpse in turbulent times	
14:25		14:50	Discussion Break		
	<b>Session 2-1</b>	15:10	15:15	Chair: <b>Masakazu Komatsuzaki</b> (Ibaraki University, Japan)	
	<b>Organic rice production: cropping and farming system</b>	15:15	15:30	Hiroyuki Tateno (Tateno kaeru farm, Japan)	Organic production practice by using weeds
15:30		15:45	Isabelle Michel (French National Institute for Agriculture, Food and Environment), Jean Claude Mouret, Laure Hossard, Marie-Jeanne Valony, Fanny Balma, Jean-Marc Barbier, Santiago Lopez-Ridaura, Charles-Henri Moulin	The role of alfalfa in the transition to organic rice production on farms in Camargue, France	
15:45		16:00	Terufumi Tada, Masayuki Kobayashi, Makoto Mori, Koki Homma, Tatsuhiko Shiraiwa	Variation in yield and harvest index in long-term non-fertilized and pesticide-free rice	
16:00		16:15	Luis Espino, Anders Lundberg, Bruce Linquist, Whitney Brim-DeForest (Video)	The Organic Rice Production System in California	
16:15		16:30	João Batista Amadeo Volkmann (Alimentos Volkmann, Brazil) (Video)	Perception of living forces in rice crops	
16:30		16:45	Yashbir Singh Shivay (Indian Agricultural Research Institute), Dinesh Kumar, K.S. Reddy	Effect of nutrient management options on productivity and nutritional quality of organically-grown Basmati rice under the long-term experiment (20 years) of basmati rice-wheat cropping system	
16:45		17:15	Discussion		
<b>6th SEP.</b>	<b>Session 2-2</b>	9:00	9:05	Chair: <b>Koki Honma</b> (Tohoku University, Japan)	
	<b>Organic rice production: cropping and farming system</b>	9:05	9:20	Takao Furuno (Aigamo duck Family Furuno Farm)	Weeding with duck and hawking in organic dry direct seeding field
9:20		9:35	Mizuhiko Nishida (Tohoku University), Ayako Sasaki, Yoshiki Tokonami	Effects of introducing AigamoRobo to an organic paddy field	
9:35		9:50	Margi Asih Maimunah (Iwate University), Valensi Kautsar, Samuel M. Kimani, Nanami Sekishita, Yuka Hosogoe, Shinkichi Takami, Keitaro Tawaraya, Hideki Murayama, Weiguo Cheng	Improving rice competitive to weeds by frequencies of weeding in Japanese organic farming	

	9:50	10:05	Kazuma Katahira (Katahira Farm)	Proposal for Organic Rice Cultivation Using the Fertilizing Effect of White Clover Green Manure and Irrigating According to the Growth Rate of Seedlings in Early Dry Fields
	10:05	10:20	Munif Ghulamahdi (IPB University)	The Application of Organic Rice Farming in Tidal Swamp
	10:20	10:45	Discussion	
			Break	
<b>Session 2-3</b>	11:05	11:10	Chair: <b>Koichi Shoji</b> (Kobe University, Japan)	
<b>Organic rice production: cropping and farming system</b>	11:10	11:25	Zhiduo Zhou (Hokkaido University), Yan Zhu, Munehide Ishiguro, Junichi Kashiwagi, Araki Hajime	The effect of inter-tillage weeding on rice yield, growth and nutrient dynamics without agricultural chemicals and fertilizers
	11:25	11:40	Hiroimi Imasu (Tohoku Agricultural Research Center, NARO), Yoshiaki Kawana, Takuo Kokuryu, Kazuya Sasahara, Takahiro Inumaki, Yuichi Yamada	Organic rice cropping system combining wide square pattern rice transplantation and Inter-/Intra-row weeding
	11:40	11:55	Natsuko Tanaka, Kohei Okamura, Ami Hashimoto, Hiroshi Nogami	Automatic Steering System Challenges Multiple Times Tilling Weeding
	11:55	12:20	Discussion	
			Lunch	
<b>Poster session</b>	12:30	14:50	Break	
<b>Special Topic</b>	15:00	15:05	Chair: <b>Sanae Sawanobori</b> (Keisen University, Japan)	
	15:05	15:25	Denis Lairon (Aix Marseille University), Julia Baudry, Emmanuelle Kesse-Guyot (online)	Key findings of the French BioNutriNet project on organic food-based diets and sustainability (diet, nutrition, health and environment)
	15:25	15:40	Discussion	
<b>Session 3</b>	15:40	15:45	Chair: <b>Hiroyuki Yasue</b> (NARO, Japan), Nocon-Shimoguchi Nina (Tokyo University of Agriculture, Japan)	
<b>Practices and Participative research for development</b>	15:45	16:00	Y.V. Singh (Indian Agricultural Research Institute)	Farmers' participatory on-farm testing (FP-OFT) of organic and conventional systems on productivity, soil and grain quality of aromatic rice in India
	16:00	16:15	Matteo Petitti (Rete Semi Rurali), Giuseppe De Santis, Salvatore Ceccarelli, Rachele Stentella, Michele Salvan, Bettina Bussi, Riccardo Bocci, Daniela Ponzini	Rice Diversity from Seed to Fork: a Living Lab for Organic Rice in Northern Italy
	16:15	16:30	Stefano Bocchi (University of Milan), Farmers group	Evolution of principles and practices of research on rice during the last 10 years - University of Milan as a Case Study
	16:30	16:45	Valentina Vaglia (University of Milan), Jacopo Bacenetti, Francesca Orlando, Sumer Alali, Elena Pagliarino, Stefano Bocchi	Participatory approach for developing knowledge on organic rice farming in Italy
	16:45	17:15	Discussion	
<b>7th SEP.</b>				
<b>Session 4</b>	9:00	9:05	Chair: <b>Takuya Mineta</b> (NARO, Japan)	
<b>Agro-ecosystem, biodiversity, landscape</b>	9:05	9:35	Kazumasa Hidaka	Agrodiversity and biodiversity of rice cultivation - Agroecological design for sustainable food and agriculture
	9:35	9:55	Naoki Iiyama (Research Center for Management of Disaster and Environment, Tokushima Univ.)	Citizen participation in paddy field biodiversity survey - A case study in Tokushima prefecture-
	9:55	10:15	Weontai Jeon (National Institute of Crop Science, Rural Development Administration, Suwon, Gyeonggi, Republic of Korea)	Current status and prospects of weed management technology using green manure crops Hairy vetch and Golden Apple Snail in paddy soil in Korea
	10:15	10:20	Chairperson's Comment	
			Break	
<b>Session 5</b>	10:40	10:45	Chair: <b>Joji Muramoto</b> (University of California Santa Cruz, USA)	
<b>Scale shift towards mainstream organic production</b>	10:45	11:00	Stéphane Bellon (French National Institute for Agriculture, Food and Environment), Dominique Desclaux, Cécile Detang-Dessendre, Françoise Medale, Servane Penvern	Scalability of organic agriculture (OA): insights from Europe
	11:00	11:15	Shinji Iwaishi (International Nature Farming Research Center)	Challenges when spreading and expanding organic rice cultivation

11:15	11:30	Madonna Casimero (International Rice Research Institute), Rizal G. Corales, Myrna Malabayabas, Johannes Mendoza	Palayamanan: a holistic approach for sustainable intensification and diversification of organic rice-based farming systems for smallholders in the Philippines
11:30	12:10	Discussion	

### Closing

### Workshop "How far can organic rice develop?"

13:30	14:30	Coordinators: Servane Penvern, Stéphane Belon, Jean-Marc Barbier
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### Poster Sessions

Chair: **Mizuhiko Nishida** (Tohoku University)

	Presenters	Original titles
1	Yoshihiro Kobayashi, Hiroshi Tsuyuzaki, Yoshinobu Usumoto, Jung Ishwor Kunwar, Koji Nishikawa, Hidehiro Inagaki	The effects of multiple inter-tillage weeding on rice growth and yield
2	Nanami Sekishita (Yamagata University), Shinkichi Takami, Samuel M. Kimani, Yuka Hosogoe, Keitaro Tawaraya, Weiguo Cheng	Effect of surface soil disturbance by hand weeding on organic rice cultivation in a new constructed rice paddy during three consecutive growing seasons
3	Monrawee Fukuda (NARO), Rio Takama, Toshiyuki Imaizumi, Akira Koarai	Mechanical Inter-/Intra-Row Weeding Effect in Rice Transplanted in Wide Square Pattern
4	Manami Yabe, Misaki Kaneko, Hikaru Nakamura, Miki Hunada, Kazuma Kaneko, Nanami Sekisita, Yuka Hosogoe, Keitaro Tawaraya, Weiguo Cheng	Adaptability to Organic Cultivation and Weed Competitiveness among Rice Varieties Grown in the Shonai Region since the Meiji Era
5	Jean Yves Dukuzumuremyi (Yamagata University), Christian Nkurunziza, Margi Asih Maimunah, Yuka Sasaki, Murayama Hedeki, Weiguo Cheng	High-yielding cultivar "Takanari" shown over competition to "Koshihikari" on nitrogen absorption and biomass production under natural rice farming
6	Guglielmo Savoini (University of Milan), Valentina Vaglia, Fosco Vesely, Stefano Bocchi	Innovative and sustainable products for the organic rice production focusing on the use of biostimulants and allelopathic rice varieties
7	Geeta Singh (Indian Agricultural Research Institute), Manoj Menapadi	Microbiological basis of soil carbon sequestration in Organic rice production in India
8	Yoshinori Watanabe (Faculty of Food and Agricultural Sciences, Fukushima University), Nobuhiro Kaneko	Nitrogen nutrients and carbon accumulation in no-tillage grass-grown rice fields
9	Takumi Hasegawa (Tohoku University), Ryosuke Tajima, Mizuhiko Nishida	Root Dynamics in organic rice farming in comparison with conventional farming
10	Dinesh Kumar (Indian Agricultural Research Institute) and Y.S. Shivay	Long-term effects (20 years) of cropping systems and nutrient management practices on grain yield of organically-grown basmati rice and soil fertility
11	A.Haitami (Bogor Agriculture University), Munif Ghulamahdi, Anas Dinurrohman Susila, Dedy Sopandie, Yulin Lestari	Cropping Pattern Rice-Red Onion-Soybean under Saturated Soil Culture in Tidal Swamp
12	Francesca Saitta (University of Milan), Andrea Bresciani, Valentina Vaglia, Francesca Saitta, Dimitrios Fessas, Maria Cristina Casiraghi, Daniela Erba, Maria Ambrogina Pagani, Stefano Bocchi, Alessandra Marti	Evaluation of differences in physical properties, cooking behaviour and starch digestibility of different rice varieties associated also to management strategies
13	Minyu Sun (Tohoku University), Hidetoshi Asai, Aung Zaw Oo, Toshiyuki Takai, Koki Homma	Effects of Salinity on Yield and Grain Antioxidant Contents of Black Rice
14	Sumer Alali (University of Brescia), Valentina Vaglia, Gianni Gilioli, Stefano Bocchi	How organic rice farming impacts the biodiversity: a case study of the rice paddies in north ITALY
15	Michele Salvan (University of Turin), Giuseppe Desantis, Matteo Petitti, Daniela Ponzini, Rachele Stentella, Riccardo Bocci, Irene Piccini, Simona Bonelli	Natural Biodiversity Promotion in Diversified Organic Rice Farming Systems in Northern Italy
16	Naomi Naomi, Takatoki Kaku, Koki Muto, Jun Sugai, Naoya Takashima, Masakazu Komatsuzaki	Organic rice cultivation technology utilizing paddy ecosystem benefits
17	Ryosuke Tajima (Tohoku University), Takumi Hasegawa, Naoto Nemoto, Fumihiko Sakurada, Kazunori Akita, Toru Uno, Kazumi Suzuki, Ito Toyoaki, Masanori Saito, Mizuhiko Nishida	Field experiment of organic rice farming in Field Science Center, Tohoku University over ten years
18	Jean-Marc Barbier (Reunion Rice Association)	The revival of sustainable (upland) rice cultivation in Reunion Island (France, Indian Ocean)
19	Vanaja Taliyil (Kerala Agricultural University)	Success story of equipping stake holders of naturally organic saline prone sea coastal wetland ecosystem of Kerala through research and development interventions



### Session 1

#### **Trends in organic rice production - Japan, South Korea, Thailand and France**

Organic production is expanding worldwide. However, only a few countries experience the same growth and development due to differences in regional market size and national governments' set targets. In recent years, organic rice production has been growing in Europe, the U.S., and some Asian countries. For further promotion and expansion, it is necessary to determine and evaluate the growth and development triggers and disrupters in organic rice production and consumption and clarify reasons for the similarities and differences among countries and regions. In this session, we expect a wide range of reports and discussions on the international situation, national and local government policies and regulations, and the issues for further promotion of organic rice production and consumption. For the future of organic rice, we encourage networking and proactive discussions from the socio-economic and political perspectives.



### Session 2

#### **Organic rice production: cropping and farming system**

Organic rice farming has been continuously growing in the last three decades and has discovered much scientific evidence and innovations regarding organic rice farming practices to improve the yield responses, material inputs, labor requirements, and environmental sustainability. This session will be discussing the recent cutting-edge of the development of organic rice production systems from the viewpoint of field scale approaches to maximize the agroecological intensifications and to create a smart organic system. This session also encourages the sharing of knowledge and experience between farmers and scientists.



### Session 3

#### **Practices and participative research for development**

Organic rice does not use chemical fertilizers or pesticides; it is produced by preparing the soil and making good use of the roles of various ecosystems. What are the quality characteristics of organically-grown rice produced regarding nutritional content, safety, palatability, and other various functionalities? Furthermore, how can such quality characteristics be obtained? Moreover, what kind of processed products can be produced from organic rice by taking advantage of these quality characteristics?

This session aims to bring together various knowledge related to the quality of organic rice and leverage it for future practice and research.



## Session 4

### **Agro-ecosystem, biodiversity, landscape**

In rural areas, organic rice farming is gaining attention for improving biodiversity through conserving and regenerating rare species and controlling pests and diseases in rice cultivation.

Traditional rice farming in Japan strongly connects with satoyama, such as obtaining organic resources from surrounding grasslands and forests. Organic rice farming utilizes local resources that use the blessings (ecosystem services) from these satoyama areas, the regeneration of the accompanying rural culture, and the formation of traditional satoyama landscapes. Furthermore, resource-recycling and low-input organic rice farming on a regional basis are expected to reduce greenhouse gas emissions and contribute to the mitigation of climate change. In this session, we encourage presentations and discussions about exemplary organic rice-based rural ecosystems, the latest findings on invasive alien species that have become a threat in recent years, and participatory research by farmers and citizens. We expect that farmers, citizens, and other stakeholders will have a more profound and mutual understanding of the functions and impacts of organic rice farming on ecosystem conservation at the regional level.



## Session 5

### **Scale shift towards mainstream organic production**

Facing the demand for an agroecological transition and more healthy products in agriculture, the prospect that organic farming could become the major agricultural production system in the near future has been the subject of large discussions among various scientific communities and groups of stakeholders. Strong debates have emerged about the many consequences of such a possible situation, mainly with the concern of the capacity of such farming systems to really feed the worldwide population. To assess if such a future is even desirable, two main set of questions arise: (i) is it technically, economically and socially feasible? To which conditions? (ii) if yes, what would be the consequences? Are all the impacts compatible with a more sustainable agriculture?

Even if the recent international crisis (pandemic, war) has changed the pre-existing dynamics in terms of extension of the organic agricultural sector, it is still relevant, with the aim to anticipate plausible futures, to study, from a scientific point of view, what are the issues, the levers and the consequences of a change of scale of organic production throughout the whole agri-food chain.