

The 5th

Yamaoka Memorial Foundation

Science & Technology Lecture

Food and Agriculture for a Sustainable Society



Fermentation and Food Culture

Rudolf Diesel
1858-1913

Mogokichi Yamaoka
1888-1962

A SUSTAINABLE FUTURE

Free
to attend

Advance applications
are required

English and Japanese
Simultaneous
Interpretation



Food as Preventative Medicine

~Regulation of Immune System by fermented food and nutrition~

Ayaka Ito, Ph.D.

Associate Professor / Lecturer,
Research Institute of Environmental Medicine,
Institute for Advanced Research, Nagoya University



Impact of yeasts on wine fermentation and quality

Prof. Dr. Doris Rauhut

Senior Researcher and Academic Director
Hochschule Geisenheim University
Department of Microbiology and Biochemistry
Geisenheim

March 24th, 2022

16:00-19:00

Capacity

Venue: Limited to the first 100 people

Online: Limited to the first 500 people

● International Science Innovation Building, Kyoto University Yoshida Campus

Online lecture (ZOOM) will be held at the same time.

Registration

Please entry at website below.

<https://yamaoka-memorial.or.jp/en/event/2022/0324-01.html>

Entry deadline: 12:00 on March 23rd, 2022



Sponsored by Yamaoka Memorial Foundation

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Purpose of the Lecture Meeting

This Science and Technology Lecture focused on “Renewable Energy”, a theme closely related to prevention of global warming, one of the 17 Sustainable Development Goals (SDGs) adopted by the United Nations in September 2015. Under the theme of, we invited lecturers from Japan and Germany three times.

Since last fiscal year, lectures have been given three times in series on “Food” and “Agriculture”, which are also important issues as SDGs. The theme of this year as the 2nd time will be “Fermentation and Food Culture”. After keynote speeches held by experts from Japan and Germany, we expect active exchange of opinions will be made on a global theme of sustainable food and agriculture through panel discussions and exchange meetings mainly among young people who will lead the next generation.

Speaker Introduction



Ayaka Ito, Ph. D.

Associate Professor/Lecturer, Research Institute of Environmental Medicine, Institute for Advanced Research, Nagoya University

- 2008** Received Ph. D. in medical science from Tokyo Medical and Dental University
Adjunct Assistant Professor, Medical Research Institute, Tokyo Medical and Dental University
- 2009** Postdoctoral Researcher, Department of Pathology and Lab Medicine, HHMI, University of California, Los Angeles
- 2011** Postdoctoral Fellow, American Heart Association (-2013)
- 2013** Project Scientist, Department of Pathology and Lab Medicine, HHMI, University of California, Los Angeles
- 2016** Researcher, Research Institute of Environmental Medicine, Nagoya University
- 2017** Adjunct Assistant Professor, Research Institute of Environmental Medicine, Nagoya University
- 2018** Assistant Professor, Research Institute of Environmental Medicine, Nagoya University
- 2020** Assistant Professor, Institute for Advanced Research, Nagoya University
- 2021** Associate Professor, Research Institute of Environmental Medicine, Institute for Advanced Research, Nagoya University

〈Awards received〉

- 2007 Young Investigator Award, Japan Society for the Study of Obesity
- 2014 Young Investigator Award, The Japan Endocrine Society
- 2018 Research Award, Japanese Society of Molecular Medicine

〈Abstract〉

Food as Preventative Medicine

~Regulation of Immune System by fermented food and nutrition~

The development of medical care has contributed to the extension of healthy life expectancy. However, the financial burden due to the increase of medical expenses has become an issue and it became even more apparent after COVID19. In order to achieve the sustainable society, it is important to reconsider food, fundamentals for our lives, to prevent diseases and maintain our health. In this lecture, I will introduce the latest information regarding the effect of food, especially fermented food, and nutrition on our immune system.



Prof. Dr. Doris Rauhut

(Senior Researcher and Academic Director)
Hochschule Geisenheim University
Department of Microbiology and Biochemistry
Geisenheim

- 1983** Diploma Beverage Technology, University of Applied Sciences Wiesbaden, Germany
- 1985** Diploma Oenology, Justus-Liebig-University Giessen, Germany
- 1996** doctorate (Doctor of Agricultural Sciences, Dr. agr.), Justus-Liebig University Giessen Germany
- 1988 - 2012** research scientist at Forschungsanstalt Geisenheim (Geisenheim Research Center), Department of Microbiology and Biochemistry, Germany
- 2002** Honorary Professor at Hochschule RheinMain, University of Applied Sciences Wiesbaden Rüsselsheim Geisenheim, Germany
- Since 2013** Senior Scientist and Honorary Professor at Hochschule Geisenheim University, Germany (2014 Nomination as Academic Director)

〈Awards received〉

1996 Award of the Rudolf Hermanns Foundation:
Contributions on sulfur metabolism of yeasts (*Saccharomyces cerevisiae*) and the occurrence of volatile compounds in wine. Geisenheim, Germany

1997 Giuseppe Morsiani Award, Premio Internazionale di Enologia e Viticoltura:
Research studies on 'Wine Aroma Defects Caused by Sulfur Containing Metabolites of Yeasts'. Verona, Italy

Impact of yeasts on wine fermentation and quality

Wine production from grapes is known for thousands of years in various cultures. Yeasts convert the grape must into wine through alcoholic fermentation, a biological process that leads to an abundance of volatile components that contribute decisively to the flavour of wines, depending on the environmental conditions and the grape quality. Consequently, the choice of the fermenting yeast and the monitoring of the fermentation is very important to avoid undesired yeasts and other microorganisms, which can cause sluggish or stuck fermentations and/or off-flavours and unwanted by-products. For this reason, the selection and breeding of yeasts (mainly of the *Saccharomyces cerevisiae* species) has been used for about 125 years with the intention of applying yeast strains to optimize wine quality and for certain wine styles and the typicity of wines.

In this lecture, examples will be presented that show how the use of certain yeast strains and an adequate supply of nutrients can promote a pleasant fermentation bouquet and the typical flavour of wines of certain grape varieties. In addition, fermentation strategies, also with non-conventional yeasts, are demonstrated in order to meet the challenges of climate change (certain years with high sugar contents, low natural nutrient supply, higher pH values and low acid contents in the musts) and to constantly optimize the wine quality.

About the Sponsor "Yamaoka Memorial Foundation"

Magokichi Yamaoka, founder of Yanmar Group, succeeded in developing world's first compact diesel engine, which originates from ones invented by Dr. Rudolph Diesel in Germany, and hence spread this type of engines all over the world. With this background, the Yanmar Group has always been grateful for German technology and culture since it was founded. With such feelings of gratitude, Yamaoka Memorial Foundation was established to promote cultural exchanges between Germany and Japan in order to contribute to the sustainable development of our society.

Access

City Bus: About 30 min (No.206)
JR Kyoto Station → Get off at "Kyodai Seimon-mae" → Yoshida Campus
Taxi: About 20 min.
Bound for Kitaoji Bus Terminal via Hihashiya Street

