

**International Symposium of Mycotoxicology in Kagawa 2003  
- New Horizon of Mycotoxicology for Assuring Food Safety -  
(ISMYSO Kagawa '03)**

**November 3-5, 2003  
Takamatsu City Life-Long Learning Center,  
Takamatsu, Kagawa, Japan**

**organized by Japanese Association of Mycotoxicology and  
Kagawa University**

**Contents**

**Symposia**

**Session 1: Overview**

Chairperson: Susumu Kumagai

Current situation on regulations for mycotoxins

Hans P. van Egmond

National Institute for Public Health and the Environment, the Netherlands

**Session 2: Toxicology and Health Risks of Mycotoxins**

Chairperson: Yoshiko Konishi, James J. Pestka

1. Molecular mechanisms of trichothecene toxicity

James J. Pestka: Michigan State University, USA

2. T-2 toxin-induced toxicity in pregnant rats - histopathology and gene expression profiles -

Shinya Sehata: The University of Tokyo, Japan

3. Fumonisin: toxicology, emerging issues, and prospects for detoxification

Kenneth A. Voss: Toxicology and Mycotoxin Research Unit, ARS-USDA, USA

4. Ochratoxin A - sources of exposure and risk assessment

Manfred Gareis: Institute for Microbiology and Toxicology, Germany

5. Carcinogenicity of kojic acid in rodents

Masao Hirose: National Institute of Health Sciences, Japan

### **Session 3: Mycotoxin Contamination and Control**

Chairperson: Shohei Sakuda, Gary A. Payne

1. Distribution, toxin production and control of *Fusarium* head blight pathogens in the UK  
Phillip Jennings: Central Science Laboratory, UK
2. Control of deoxynivalenol contamination of spring wheat in Hokkaido  
Jun Souma: Hokkaido Central Agricultural Experiment Station, Japan
3. Food contamination and evaluation of trichothecenes in Japan  
Toshitsugu Tanaka: Kobe Institute of Health, Japan
4. Genomic analysis of aflatoxin biosynthesis  
Gary A. Payne: North Carolina State University, USA
5. Mode of action of aflastatin A and blasticidin A, inhibitors of mycotoxin production  
Shohei Sakuda: The University of Tokyo, Japan

### **Session 4: Molecular Genetics and Ecology of Mycotoxigenic Fungi**

Chairperson: Kimiko Yabe, Yin-Won Lee

1. *Fusarium* mycotoxins biosynthesis and biodegradation  
Makoto Kimura: Plant Science Center RIKEN, Japan
2. Lineage composition and trichothecene production of *Gibberella zeae* population in Korea  
Yin-Won Lee: Seoul National University, Korea
3. Characterization and typing of aflatoxin-producing fungi in sugarcane field of the southernmost Japan by cytochrome b gene analysis  
Koji Yokoyama: Chiba University, Japan
4. Aflatoxin biosynthesis in *Aspergillus parasiticus*  
Kimiko Yabe: National Food Research Institute, Japan
5. *Aspergillus nidulans*: a model system to study secondary metabolism  
Nancy P. Keller and Richard Wilson: University of Wisconsin-Madison, USA

### **Session 5: Mycotoxin Contamination in Food and Feed in Asian Countries**

Chairperson: Masakatsu Ichinoe, Rose Arim

1. Aflatoxin B<sub>1</sub>, zearalenone and deoxynivalenol contamination in feedstuffs in Thailand  
Prapeuk Tangmunkhong: Kasetsart University, Thailand
2. Aflatoxin B<sub>1</sub> and ochratoxin A contamination in food products in some provinces in north of Vietnam  
Nguyen Thuy Chau: Post Harvest Technology Institute, Vietnam
3. Natural occurrence of fumonisin B<sub>1</sub> in maize and its risk in Iran

Hassan Yazdanpanah: Shaheed Beheshti University of Medical Sciences and Health Services, Iran

4. Mycotoxin contamination of food and feeds in the Philippines

Rose H. Arim: Food and Nutrition Research Institute, Philippines

5. Mycotoxin research in Malaysia

Norhayati Ali: Department of Chemistry Penang, Malaysia

6. Study on the production of citrinin by *Monascus* strains intended for food processing industry use

Fengqin Li: Chinese Center for Disease Control and Prevention, China

7. Current situation of patulin contamination in apple juice and its risk in Japan

Setsuko Tabata: Tokyo Metropolitan Institute of Public Health, Japan

8. Aflatoxin M<sub>1</sub> in milk and its risk in Japan

Masahiro Nakajima: Nagoya City Public Health Research Institute, Japan

## **Workshop: Recent Advance in Analytical Methods for Mycotoxins and Their Perspectives**

Chairperson: Toshitsugu Tanaka, Setsuko Tabata, Chris M. Maragos

### Part 1

1. Quality and reliability in mycotoxin measurement  
J. Marc Frèmy: French Agency for Food Safety (AFSSA), France
2. Recent advances in analytical methods for mycotoxins  
Chris M. Maragos: National Center for Agricultural Utilization Research, USA

### Part 2

1. LC-MS/LC-UV analysis of type-A and B trichothecenes after multifunctional MycoSep® clean up  
Eva M. Binder: Romer Laboratories Pte. Ltd., Singapore
2. A practical method for measuring deoxynivalenol, nivalenol and T-2 + HT-2 toxin in foods by an enzyme-linked immunosorbent assay using monoclonal antibodies  
Kazuyuki Ikeda: Research Laboratories, Kyowa Medex Co., Ltd., Japan
3. Immunoaffinity column clean up for the analysis of mycotoxins  
Danrey Toth: VICAM, USA
4. Immunoaffinity column for mycotoxins, its problems and solution  
Masahiro Nakajima: Nagoya City Public Health Research Institute, Japan
5. Panel discussion

## **Poster Session**

Chairperson: Susumu Kumagai, Masahiro Nakajima

- P1. Caspase cascade of apoptosis induced by satratoxin G in HL-60 cells: possible involvement of caspase-2 in direct activation of caspase-3  
NAGASE, M., KIMURA, J., YOSHIKAWA, T. AND SAKATO, N.  
Kagawa University, Japan
- P2. Nivalenol-induced changes in apoptosis-related genes expression and lymphocyte subsets in lymphoid tissues and mouse thymocyte primary cultures  
POAPOLATHEP, A., KUMAGAI, S. AND DOI, K.  
Kasetsart University, Thailand, and University of Tokyo, Japan
- P3. Xanthoascin, a hepato- and cardio-toxic metabolite of *Aspergillus candidus*, is a potent inhibitor to mitochondrial respiratory chain at coupling site I  
KITAGAWA, A., ITO, Y. AND KAWAI, K.  
Chukyo Women's University, Japan, and Aichi Medical University, Japan

- P4. Glutathione S-transferase activity toward aflatoxin B<sub>1</sub> epoxide in livers of mastomys and other rodents  
 ESAKI, E. AND KUMAGAI, S.  
 National Veterinary Assay Laboratory, Japan and University of Tokyo, Japan
- P5. Susceptibility of the Nagase-analbuminaemia rats intragastrically inoculated with aflatoxin B<sub>1</sub>  
 ADACHI, Y., HIRANO, K., UENO, I. AND NAGASE, S.  
 Ibaraki University, Japan, National Institute of Animal Health, Japan, University of Tokyo, Japan, and Sasaki Institute, Japan
- P6. Detection of alkaline protease in peanuts infected with *Aspergillus flavus* or *Aspergillus parasiticus* by stamp method using enzyme immunoassay  
 HENMI, Y., SUZUKI, A., WATANABE, I. AND ADACHI, Y.  
 Ibaraki University, Japan
- P7. Development of enzyme sorbent immunoassay for rubratoxin B  
 GOTO, T., SHARMA, K.D. AND NAGASHIMA, H.  
 National Food Research Institute, Japan
- P8. Validation of a new Agraquant<sup>®</sup> deoxynivalenol (0.25-5.0 ppm) ELISA test kit  
 ZHENG, Z.M., HOUCHINS, D., UNG, J., KING, R.S. AND RICHARD, J.L.  
 Romer Labs Asia, Singapore, and Romer Labs, Inc.<sup>®</sup>, USA
- P9. Analysis of trichothecenes in beer and barley tea by LC/MS/MS  
 SUGA, K., MOCHIZUKI, N., HARAYAMA, K. AND YAMASHITA, H.  
 Asahi Breweries, Ltd., Japan
- P10. Evaluation of methodology for cyclopiazonic acid analysis in corn and peanuts  
 HAYASHI, Y. AND YOSHIZAWA, T.  
 Kagawa University, Japan
- P11. New rapid clean up device for ochratoxin A  
 BUTTINGER, G., KRŠKA, R., KNAPP, H., FUCHS, E. AND BINDER, E.M.  
 Christian Doppler Laboratory for Mycotoxin Research, Austria, and Romer Labs Diagnostic GmbH, Austria
- P12. Interlaboratory comparison of potential rapid methods for aflatoxin detection in corn  
 ARIM, R.H., ESTEVES, L.A., FEROLIN, C.A. AND LUMBA, V.M.  
 Food and Nutrition Research Institute (FNRI), Philippines, and Bureau of Postharvest Research Extension (BPRES), Philippines
- P13. Progress in mycotoxin analysis  
 HONMA, Y., NAITO, S., EARNSHAW, A., NAGASHIMA, H. AND GOTO, T.  
 National Food Research Institute, Japan, and Central Science Laboratory, UK

- P14. Evaluation of *Aspergillus* section *flavi* populations, natural and *in vitro* aflatoxin production in dried cavendish banana (*Musa cavendishii*) chips from southern Philippines  
SALES, A.C., AZANZA, P.V. AND YOSHIZAWA, T.  
Kagawa University, Japan, and University of the Philippines, Philippines
- P15. Nivalenol and deoxynivalenol occurrence and bio-conversion in damaged wheat and barley spikes  
LIMAY-RIOS, V. AND YOSHIZAWA, T.  
Kagawa University, Japan
- P16. Contamination of deoxynivalenol and nivalenol in wheat and its flour  
ITOH, Y. AND KUMAGAI, S.  
National Institute of Health Sciences, Japan, and University of Tokyo, Japan
- P17. Sorting and detoxification of DON- and NIV-contaminated wheat lots by a new modeled machine using near infrared rays  
TAKAHASHI, H., TOMITA, T., OKANO, K. AND ICHINOE, M.  
Public Health Laboratory of Chiba Prefecture, Japan, Mycotoxin Research Association, Japan, and Tokyo Kasei University, Japan
- P18. Decontamination of deoxynivalenol and nivalenol by heat treatment in combination with food additives  
YOSHIZAWA, T., YUMBE-GUEVARA, B.E., OGAWA, M., SHIROMA, K. AND SHONO, K.  
Kagawa University, Japan
- P19. Heat induced isomers of acetylated derivatives of deoxynivalenol and nivalenol  
YUMBE-GUEVARA, B.E. AND YOSHIZAWA, T.  
Kagawa University, Japan
- P20. Aflatoxin B<sub>1</sub> degradation by horseradish peroxidase  
NAKAGAWA, H., NAKAJIMA, H. AND YABE, K.  
National Food Research Institute, Japan, and Tottori University, Japan
- P21. Characterization and purification of bacterial bioactive compounds against aflatoxin production  
YAN, P.-S., SAKUNO, E., NAKAJIMA, H. AND YABE, K.  
National Food Research Institute, Japan, and Tottori University, Japan
- P22. Evaluation of aflatoxin binders in relation to the growth performance of broiler chicken  
BEGINO, E.T.  
Philippine Animal Health Center, Department of Agriculture, Bureau of Animal Industry, Philippines

- P23. Efficacy of yeast-derived glucomannan polymer in preventing combined toxicity of *Fusarium* mycotoxins in poultry  
SWAMY, H.V.L.N., SMITH, T.K. AND CHOWDHURY, S.R.  
Alltech India, India, and University of Guelph, Canada
- P24. Genetic diversity of *Fusarium graminearum* from rice in Korea  
CHANG, I.-Y., YUN, S.-H. AND LEE, Y.-W.  
Seoul National University, Korea, and Soonchunhyang University, Korea
- P25. Insertional mutagenesis of *Fusarium graminearum* for characterization of genes involved in disease development and mycotoxin production  
HAN, Y.-K., LEE, H.-J., YUN, S.-H. AND LEE, Y.-W.  
Seoul National University, Korea, and Soonchunhyang University, Korea
- P26. Shifting reproductive mode of a mycotoxin producing-fungus by manipulation of mating-type genes  
LEE, J., LEE, T., LEE, Y.-W., YUN, S.-H. AND TURGEON, B.G.  
Seoul National University, Korea, Soonchunhyang University, Korea, and Cornell University, USA
- P27. Molecular breeding of transgenic cereals expressing the zearalenone detoxifying gene  
HIGA-NISHIYAMA, A., MIMORI, K., OCHIAI-FUKUDA, T., TAKAHASHI-ANDO, N., USAMI, R., YAMAGUCHI, I. AND KIMURA, M.  
RIKEN Plant Science Center, Japan, and Toyo University, Japan
- P28. Analysis of aflatoxin biosynthetic pathway genes cluster of *Aspergillus oryzae* rib strains  
TOMINAGA, M., LEE, Y.H., HAYASHI, R., YAMADA, O., SAKAMOTO, K. AND AKITA, O.  
National Research Institute of Brewing, Japan
- P29. Characterization of the *VBS* gene function from *Aspergillus parasiticus* by gene disruption  
WEN, Y., SAKUNO, E., NAKAJIMA, H., ARAI, H., HATABAYASHI, H. AND YABE, K.  
National Food Research Institute, Japan, and Tottori University, Japan
- P30. Involvement of two cytosolic enzymes and a novel intermediate, 5'-oxoaverantin, in the pathway from 5'-hydroxyaverantin to averufin in aflatoxin biosynthesis  
SAKUNO, E., NAKAJIMA, H. AND YABE, K.  
Tottori University, Japan, and National Food Research Institute, Japan
- P31. Rapid identification of *Neosartorya* species by heteroduplex panel analysis  
KUMEDA, Y., ASAO, T., TAKAHASHI, H., YOKOYAMA, K. AND ICHINOE, M.  
Osaka Prefectural Institute of Public Health, Japan, Public Health Laboratory of Chiba Prefecture, Japan, Chiba University, Japan, and Tokyo Kasei University, Japan

- P32. Some immunosuppressive metabolites recently isolated from two ascomycetes belonging to *Chaetomium* and *Zopfiella*  
FUJIMOTO, H., SUMINO, M., NAKAMURA, E., OKUYAMA, E. AND ISHIBASHI, M.  
Chiba University, Japan
- P33. Production of verruculogen by a strain of *Aspergillus fumigatus* isolated from a patient with pulmonary aspergillosis  
SUGIURA, Y., ONJI, Y. AND TANAKA, T.  
Kobe Institute of Health, Japan, and Nara Prefectural Institute for Hygiene and Environment, Japan