

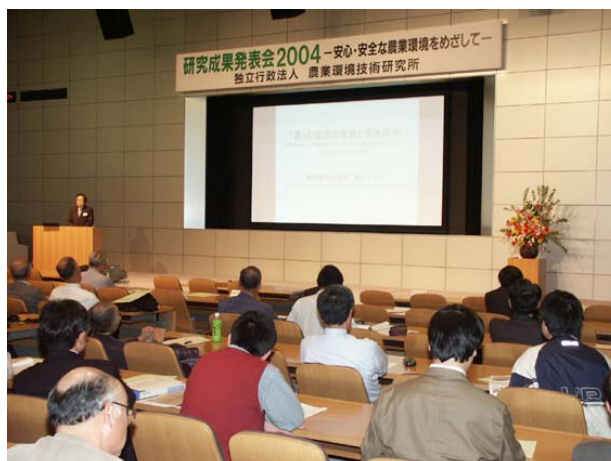
Major Symposia and Seminars

1. Second Meeting for the Presentation of NIAES Research Topics

The Second Meeting for the Presentation of Research Topics, “Aim for a safe and reliable agricultural environment,” was held on 12 April 2004 at the Tsukuba International Congress Center. NIAES became an Independent Administrative Institution (a semi-autonomous agency) on 1 April 2001. One year later, on 23 April 2002, the first official meeting to present our research topics to the general public was convened to commemorate the first anniversary of the reorganization of the Institute. The purpose of this year’s meeting—the second—was to introduce the results of research performed up until midway through the current Mid-term Plan. There were 175 attendees: 84 from outside NIAES and 91 from the Institute.

The opening address was given by Katsuyuki Minami, Director General of NIAES, and was followed by a special lecture, “Agricultural scenery: its significance, preservation, and practical use” by Isoya Shinji, President of the Tokyo University of Agriculture. After that, the following 5 recent NIAES research topics were presented: “Evaluation of habitats of living organisms in the agricultural environment” (D. Sprague, Chief of Ecological Management Unit), “Risk of invasion by exotic insects and evaluation of the influence of such invasions on the ecosystem” (M. Matsui, Head of Entomology Group), “Evaluation of methods of utilizing microbiological inventories” (S. Tsushima, Chief of Microbial Systematics Laboratory), “Analysis of the influence of agricultural activity on water quality” (M. Saito, Director of Department of Environmental Chemistry), and “Development of technology that remediates soils polluted with cadmium” (S. Ono, Head of Heavy Metal Group).

The last program, chaired by Mitsunori Oka, Director of Department of Biological Safety, covered questions and answers on such issues as the importance of using a multidirectional approach to solve agro-environmental problems and the duty of researchers to present their results proactively and thus improve the environmental consciousness of producers and consumers. This argument was summarized as follows: We need to develop a system whereby government officials, researchers, producers, and consumers can have a lively exchange of opinions. Fresh routes for solving Japan’s agro-environmental problems could flow from the arguments that might develop during the exchange of such opinions.



Presentation by Prof. I. Shinji, Tokyo University of Agriculture.

The questionnaire on this meeting gathered the impressions and opinions of 48 participants. The feedback was generally favorable: for example, “Very useful,” or “The special lecture in particular was interesting.” Other opinions, such as, “Please facilitate the use of useful data, such as the microbiology database,” “There is a need to increase opportunities for interaction with the general public,” and “NIAES should present proactive proposals to society,” suggest that the general public has major expectations of NIAES.

The next meeting will be held when the present Mid-term Plan has finished and NIAES is aiming at a new target. In taking the opinions that we obtained here into account, we must ensure that the next meeting serves as an opportunity to present our results to a large number of people. (I. Taniyama)

2. Third International Nitrogen Conference and Sino-Japan Workshop on Impacts of Nutrient Cycling in Rice-based Ecosystems and their Environmental Consequences

Nitrogen is an essential element for food production. However, N loading of the environment causes deterioration of water quality, atmospheric pollution such as acid rain, and increases in greenhouse gas emissions. The International Nitrogen Conference was initiated in The Netherlands in 1998 with the aim of achieving proper control of N loads at local, regional, and global scales. After the second conference, in the United States in 2001, the third conference, sponsored by the Chinese Academy of Sciences (CAS), was held in Nanjing, China, from 12 to 16 October 2004. NIAES was one of 10 co-sponsors. About 500 scientists and policymakers, including 150 foreigners (about 50 Japanese) participated. The main theme of the conference was “The impact of population



Representative members of the organizing committee of the Third International Nitrogen Conference and the Nanjing Declaration.

growth and economic development on the nitrogen cycle: consequences and mitigation at local, regional, and global scales". Continued increases in population and economic growth, particularly in developing countries, will require commensurate increases in food production and energy demand. Hence, consumption of synthetic N fertilizers and energy will further increase and thus impose even greater pressure on the environment. The main issue of the 2004 conference was whether this increased use of N and energy can be achieved while protecting environmental quality and natural resources for future generations. Because China is the world's biggest consumer of N fertilizers, many papers dealing with the N load derived from agricultural activities, and technologies for its mitigation, were presented.

On the final day, the "Nanjing Declaration on Nitrogen Management" was adopted by all participants as the conference's conclusion. The Nanjing Declaration is an action plan for facilitating environmental protection and the optimization of N management in food and energy production. It urges participants to call upon their national governments to optimize N management on local, regional, and global scales. The Declaration was signed by Zhoaliang Zhu (Co-chair of the conference, Institute of Soil Science, CAS), Katsu Minami (Co-chair of the

conference, NIAES), and James Galloway (Chairperson of the International Nitrogen Initiative (INI), University of Virginia) and handed over to the United Nations Environment Program. The declaration document is available on INI's website at <http://www.initrogen.org/>. The Fourth International Nitrogen Conference will be held in Brazil in 2007.

The conference was followed by a Sino-Japan Workshop on "Impacts of Nutrient Cycling in Rice-based Ecosystems and Their Environmental Consequences" (16 and 17 October 2004, Institute of Soil Science (ISS), CAS, Nanjing). The workshop was co-organized by ISS and NIAES on the basis of a research cooperation agreement (Memorandum of Understanding) made between ISS and NIAES in July 2002. There were about 30 participants from China, 1 from Taiwan, and 18 from Japan (11 from NIAES). In the first part of the workshop, current research topics (7 from Japan and 5 from China) were presented and discussed. In the second part, to explore future research cooperation between the two institutes, group discussions were held on 3 themes: (1) Strategies for raising N utilization efficiency and thus mitigating non-point agricultural N pollution; (2) Nitrogenous gas emissions from agricultural

ecosystems; and (3) Assessment of N cycles in Asia as a result of anthropogenic influences and cooperation. Finally, a wrap-up discussion was held, and the participants concluded that they would facilitate further research cooperation. (M. Saito)

3. Word Rice Research Conference 2004

The Word Rice Research Conference 2004, “Rice is Life”, was organized by NIAES in collaboration with such organizations as the Ministry of Agriculture, Forestry and Fishery (MAFF), the Japan International Research Center for Agricultural Sciences (JIRCAS), and the International Rice Research Institute (IRRI) and was held from 5 to 7 November 2004 at the Tsukuba International Congress Center. This conference was the most important scientific event of the International Year of Rice, which had been declared by the United Nations. The objective of the conference was to provide the latest research information on a wide range of rice-related issues, such as international food security, poverty alleviation, and the environment. Forty-two countries and areas took part, and Japanese and foreign participants numbered 1235, including those from research institutions, universities, and the private sector.

Following opening addresses given by Mr. K. Nishikawa (MAFF), Dr. N.V. Nguyen (FAO), and Dr. K. Otsuka (IRRI), 3 keynote lectures were presented, by Prof. V. Smil from the University of Manitoba (“Feeding the world: How much more rice do we need?”), Prof. R. Nakamura from Nihon University (“Development of sustainable agriculture based on rice, water, and the living environment”), and Dr. R. Cantrell of IRRI (“Research strategy for rice in the 21st Century”). Two of the 20 sessions of the conference—“Conservation of soil,

water, and the environment in rice culture” and “Climate change and rice production”—were organized by NIAES. M. Saito (Department of Environmental Chemistry), T. Imagawa, and Dr. T. Hasegawa (Department of Global Resources) were the chairs of these sessions.

Exhibitions were also held by 35 organizations, and the close communication between presenters and participants added a good atmosphere to the conference. NIAES showed a video program introducing NIAES activities. We also presented posters on research topics, books, and proceedings of international conferences held by NIAES, and M. Matsui (Department of Biological Safety) demonstrated the Asian-Pacific Alien Species Database (APASD) system on a personal computer. This demonstration attracted many participants. (I. Taniyama)

4. Second International Symposium on Japan–Korea Research Cooperation: Assessment of the Impact of Farm Chemical Runoff from Paddy Fields on Biodiversity Conservation

Rice farming has supplied the staple food for several thousand years to many peoples in the countries of the Asian monsoon region. We can see the great influence that rice farming has had on the culture of each country. These countries are characterized by a humid landscape in which the rural areas are composed mainly of paddy fields. Because some of the components of this landscape, such as the channels and reservoirs used for paddy irrigation, are used as habitats by various aquatic organisms, we are quite familiar with the diversity of species living there.

Most countries of the Asian monsoon region need to improve rice yield to sustain their increasing populations. Therefore, farm chemicals have been utilized continuously for rice farming in these countries, and they will continue to be used in future. The OECD has warned our governments to use farm chemicals more carefully, particularly if we are to reduce and manage their impacts on the environment and on human health. However, in our countries, the environmental safety of the chemicals used in rice farming has been judged only from the results of toxicity tests on the fish and crustaceans that make up commercial fisheries, so we have accumulated little knowledge of methods of assessing the ecological impacts of these chemicals on biodiversity, regardless of the urgent demand for effective assessment.

Therefore, an international workshop on impact assessment of farm chemicals, co-sponsored by NIAES and NIAST (National Institute of Agricultural Science and Technology, Korea), was held on 16 March 2005 in the Tsukuba International Conference Hall. The keynote



APASD system demonstration by Dr. M. Matsui, NIAES (right).

Highlights in 2004

speech was given by Dr. Kevin Costello (Environmental Protection Agency, USA). He spoke on “Aquatic ecological risk assessments for pesticides: state of the science and future directions”. Four speakers gave presentations in the first session, titled Biodiversity and Endangered Species in Paddy Ecosystems of East Asia. The presentations were 1) “Assessment of overall pesticide effects on river ecosystems on the basis of bioassays, biomonitorings, and/or field experiments” (S. Hatakeyama, National Institute for Environmental Studies, Japan); 2) “Biodiversity assessment of freshwater invertebrate fauna with pesticide application in paddy eco-system (M. Han, NIAST); 3) “Impact assessment of sulfonylurea herbicides on the diversity of aquatic plants in paddy farming systems of Korea” (T. Park, NIAST); and 4) “Effects of herbicides on biodiversity of rice fields in China; a rational herbicide application strategy” (J. Shen, Shanghai Jiao Tong University, China).

The second session, Methodology of Toxicity/Exposure Experiments using Aquatic Organisms, was composed of the following four presentations: 1) “Monitoring and modeling of pesticide fate and transport in paddy fields: challenges for reducing environmental risk” (H. Watanabe, Tokyo University of Agriculture and Technology, Japan); 2) “Hazard assessment of rice herbicides in freshwater algae in Japan” (S. Ishihara, NIAES); 3) “Impact assessment of herbicide runoff from paddy fields on threatened aquatic plants in Japan” (H. Ikeda, NIAES); and 4) “Evaluation of ecological effect of farm chemicals” (F. Heimbach, Bayer Crop Science GmbH, Germany). More than 150 people participated in the seminar.



Second International Symposium on Japan–Korea Research Cooperation, held in the Tsukuba International Conference Hall.

We confirmed the impact of recent rice farming on the biodiversity in paddy ecosystems and discussed methods for assessing the ecological impacts of farm chemicals from the following standpoints: 1) deterioration of biodiversity in paddy ecosystems in Asian countries; 2) decrement of aquatic species as a result of exposure to farm chemicals in runoff from paddy fields; and 3) the use of indicator species (e.g. algae, plants, and small fish) to evaluate the ecological impacts of chemical runoff from paddy fields. We recognized the need to promote research on methodologies for assessing the risks posed by farm chemicals to biodiversity conservation. (Y. Ogawa)