

JAPAN BIOINDUSTRY

Vol.25 No.2
September 2008

LETTERS

JBA

The First Course on Advanced Bioindustry Group Training (2008)

1. Introduction

Biotechnology can be applied in a broad range of fields, from pharmaceuticals, foods, and chemicals to environmental conservation and the livestock and fishing industries. It contributes greatly to our quality of life and the improvement thereof, and has evolved into its own industry. Numerous developing nations that possess an abundance of biological resources, too, have included biotechnology in their economic development strategies and are focusing on the utilization of national biological resources and the development of bioindustries. Nevertheless, these nations still lack the ability to develop the technology and human resources required to apply biotechnology in various fields.

The purpose of the Bioindustry Group Training is to provide representatives from developing nations with a forum in which to study biotechnology fundamentals, applied technologies, bioindustrial promotion policies, and various other related topics from a broad perspective with the ultimate goal of enabling them to create and realize plans for establishing bioindustries in their own countries. The Japan Bioindustry Association (JBA)

operates this program on behalf of the Japan International Cooperation Agency (JICA) Chubu International Center, formerly known as the JICA Nagoya International Center. The course was first offered over a fourteen-year period from 1988 to 2002; then, in 2003, it was revamped in an effort to reach a broader participant base and offered under a new course name “Bioindustry Group Training II” for the next five years.

From 1988 to 2007, JBA has conducted training programs for a total of 178 representatives from thirty countries. Some course alumni are now active leaders who play important roles in the bioindustries of their respective countries.



TOPICS

■ The First Course on Advanced Bioindustry Group Training (2008)

KEIRIN



This work was subsidized by the Japan Keirin Association through its Promotion funds KEIRIN RACE.

<http://ringring-keirin.jp>



2. Advanced Bioindustry Group Training

The Advanced Bioindustry Group Training was launched in 2008 as a new, three-year JICA project. This can be attributed in part to the fact that Nagoya, Japan, will in 2010 host the Tenth Meeting of the Conference of the Parties (COP 10) to the Convention on Biological Diversity and the Fifth Meeting of the Conference of the Parties Serving as the Meeting of the Parties to the Cartagena Protocol (COP-MOP5). The need for such group training is stipulated in Article 12 of the Convention on Biological Diversity, which was ratified in 1993. The article states, in part:

“The Contracting Parties, taking into account the special needs of developing countries, shall:

(a) Establish and maintain programs for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components and provide support for such education and training for the specific needs of developing countries.”

Japan has faithfully implemented the Convention on Biological Diversity, and the group training programs reflect the nation’s stance toward the provisions of the convention. The new and improved Advanced Bioindustry Group Training offers a curriculum that is more sharply focused on 1) the preservation and sustainable use of biological and genetic resources and 2) the safety assessment of modern biotechnology techniques. Consequently, the three primary objectives of the course are:

1) Human Resource development and capacity building

Course participants will learn the basic technologies required to evaluate, preserve, and assess the safety of biological/genetic resources for the purpose of 1) utilizing each nation’s abundant biological/genetic resources and 2) promoting the development of each nation’s bioindustries. The course is also

aimed at helping participants to create bioindustrial development action plans to be implemented when they return home.

2) Implementation of the Convention on Biological Diversity

Participants will study 1) examples of the utilization of biological resources from the perspective of Japan’s bioindustries – history, current conditions, and future direction, 2) compliance with international rules required for the utilization of genetic resources, and 3) legislative system development in one’s own country.

3) Promotion of mutual development of bioindustries

The promotion of bioindustrial development based on the utilization of genetic resources in one’s own country contributes to economic and bioindustrial policy development not only in developing nations but also in Japan.

3. Lectures, Tours & Practical Training

Biotechnology is essential to all of the various bioindustry fields, and because it can be applied to every field ranging from microorganisms and viruses to animals, plants, and humans, such technology must incorporate scientific and social perspectives that are specific to each field. The Advanced Bioindustry Group Training curriculum incorporates these various perspectives, and that is what sets it apart from other training programs.

The course, which is comprised of lectures, tours,



practical training and discussion, covers the following:

1) Biotechnology fundamentals and applied technologies

Fermentation industry overview, microbial biotechnology, plant biotechnology, environmental biotechnology, marine biotechnology, pharmaceuticals, enzymes, vaccines, bioplastics

2) Convention on Biological Diversity (preservation, access, sustainable use, industrialization)

Biological/genetic resources, the Cartagena Protocol, isolation, classification, and preservation of microbial genetic resources

3) Important points concerning bioindustry strategies, planning, and implementation

Japanese bioindustry policies, bioclusters, bio-related intellectual property, bio-ventures, industrial-academic collaboration

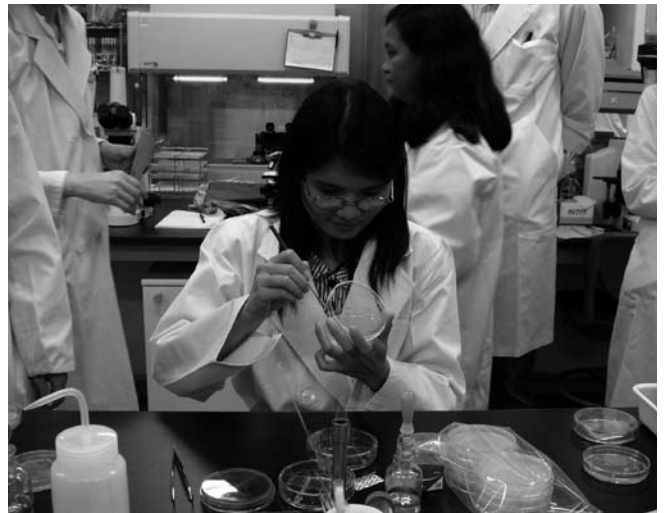
4) General understanding and safety of biotechnology

Biotechnology-applied products, genetically-modified foods, risk analysis, assessment and communication, public engagements

The curriculum includes these newly-added lecture topics: “The Cartagena Protocol,” “animal vaccine development,” “biomass plastics,” “rapid identification of microorganism,” “NITE Patent Microorganisms Depositary (NPMD) operations,” and “industrialization of microbial resources.”

Course participants also visited eight universities (thirteen total departments), thirteen national research institutes, and eleven private corporations. These tours are designed to help participants acquire an understanding of biotechnology and bioindustries.

Biotechnology-related practical training, which was added to the curriculum several years ago, is a popular aspect of the group training course. Participants



conducted microbial separation, observation, preservation, classification by genome sequencing and genome analysis at the National Institute of Technology & Evaluation (NITE) Biological Resource Center and learned how to conduct searches using the Biomedical Information Research Center database. They also learn the basic techniques of plant transformation and monitoring transferred genes at the RIKEN Plant Science Center in Yokohama.

4. Training Status

Starting in 2008, JICA’s group training project will focus on 1) strengthening collaborative efforts between its domestic organizations and overseas offices, 2) fostering an improved sense of purpose in developing nations and, in particular, 3) responding to training needs required for an organization rather than an individual. JICA had originally planned to recruit representatives from thirteen nations – Indonesia, Vietnam, Myanmar, Laos, Mongolia, the Philippines, Sri Lanka, Bhutan, Thailand, India, Malaysia, Brazil, and Peru – and assemble a ten-member group. However, based on the results of a survey conducted by the Ministry of Foreign Affairs, JICA decided to narrow its focus on Thailand, the Philippines, Myanmar, India, Peru, Colombia, Tunisia, and South Africa, and to expand group size to eleven members.

The past success of this program is largely attributable to the group training advisory committee, which continues to play a major role. Its membership includes

representatives from Kyowa Hakko Kogyo, Ajinomoto, Astellas Pharma, Suntory, NITE, DuPont, Meiji Seika, and RIKEN.

The advisory committee held a candidate screening meeting on April 23, 2008. Since South Africa responded that it had no suitable candidates and, in compliance with MOFA policy, applications from Myanmar were put on hold due to continuing government instability in that nation, the committee approved seven candidates from Colombia, India, Peru, the Philippines, Thailand (2), and Tunisia; the group comprised one man and six women. Unfortunately, however, the Peruvian and Indian candidates were unable to attend due to personal circumstances and inadequate documentation in the government respectively. Consequently, a total of five representatives participated in the course.

After arriving in Japan on May 26, the group attended an orientation and Japanese language classes at JICA Chubu. The actual two-month training course was kicked off on June 3 in Tokyo with an orientation held by the JBA. Each week, participants created reports covering what they had learned through the week's lectures, tours, and training exercises and how the lessons they learned related to their own individual jobs. These reports were submitted to JBA staff and forwarded to JICA advisory committee members.

Participants were also required to develop detailed action plans illustrating their understanding of training course content and how they intend to utilize training results in the workplace after returning home. To prepare for this, they gave initial presentations on their individual career backgrounds (June 4), mid-term presentations describing what they had learned thus far (July 10), and final

presentations describing their action plans concerning biotechnology implementation (July 29). JICA advisory committee members also attended and offered advice to participants on how to give effective presentations in addition to accurate feedback on presentation content. This advice, feedback, and discussion enabled participants to acquire a deeper understanding of the subjects covered and to develop detailed and realistic action plans.

Action plans also included predictions of what can be implemented soon after returning home and what other developments can be expected in five and ten years, making it possible to follow the future progress of course alumni. In addition to short-term monitoring – alumni must submit progress reports by October 31 – the JBA will also conduct long-term monitoring of alumni progress.

5. Conclusion

Group members returned home on July 31 after completing the two-month training course, which turned out to be a great success. Although this year's group was small in comparison to past groups, the participants benefited by being able to spend more one-on-one time with instructors during practical training; at the same time, however, discussions were not as vigorous as they could have been. Granted, two participants suddenly cancelled; nevertheless, the small group size is being attributed to recruiting process changes. Further changes will be made to the recruiting process in order to ensure broader participation and more active training in 2009. JICA Chubu is scheduled to relocate its office to a new site near the Nagoya Station next year.

© **JBA** 2008 URL:<http://www.jba.or.jp>

Japan Bioindustry Association (JBA)

Chairman: Dr. Hiroshi Harada

Office: Grande Bldg. 8th Floor, 26-9 Hatchobori 2-chome, Chuo-ku, Tokyo 104-0032, Japan

Tel: +81-3-5541-2731 Fax: +81-3-5541-2737 E-mail: JBL@jba.or.jp

Printed in Japan