

Knowledge and information management to combat invasive alien species

Development of database (APASD) for biological invasion

To cope with the growing concern on IAS, the APASD system must be made more functional and user-friendly, and must have a good interface and working link with the various projects and databases on invasive alien species worldwide.

THE INCIDENCE OF INTRODUCTION OF BIOLOGICAL invasive alien species worldwide has recently increased along with increases in global trade and human travel, causing great economic damage and ecological impacts. Hence, invasive alien species (IAS) have become an important global concern, and the need to exchange research and monitoring information among countries in order to prevent the spread and damage they cause has become vital and more urgent than ever.

Toward this end, the Asian-Pacific Alien Species Database (APASD) was introduced by the National Institute for Agro-Environmental Sciences (NIAES), Japan at an international seminar held in 2003, as a means to facilitate accumulation and sharing of recent information on IAS among countries in the Asian region. This database seeks to enable the sharing of recent information on invasive alien species among countries in the Asian and Pacific region, and serves as a valuable regional network in conjunction with existing international databases on IAS.

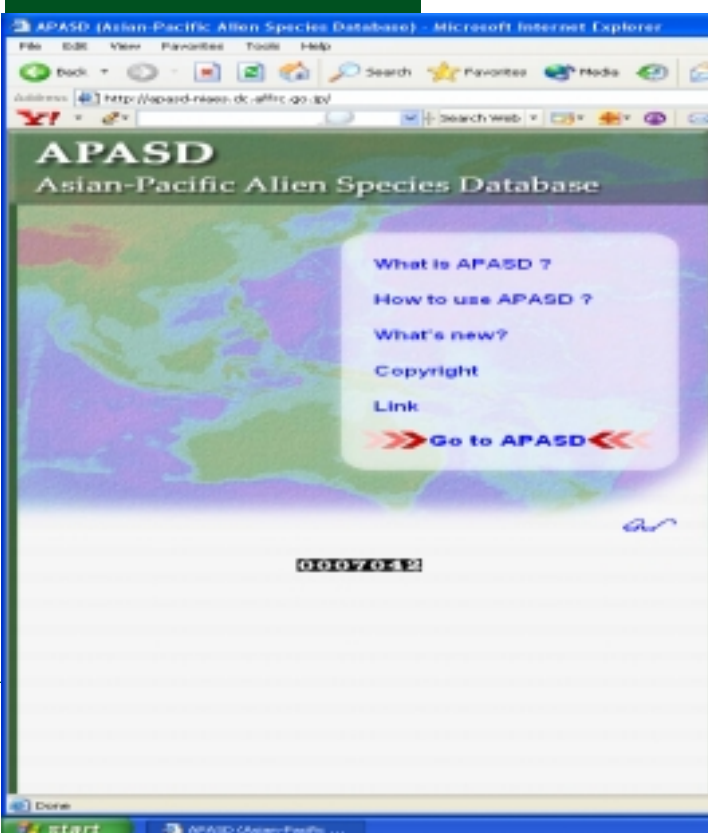
Since its introduction, aspects of the APASD system have been improved, such as the addition of function to convert the English language APASD to other languages, and data input has continued. A follow-up workshop was held in 2004 aimed to establish a constructive cooperation mechanism among countries in the ASPAC to further build up the database.

This 2006 workshop was a follow-up activity of the past two seminars, with the intention of updating the APASD system to make it more functional and user-friendly.

This is in line with FFTC's commitment, in collaboration with NIAES, Japan, to continue to support the development of the APASD and to organize related programs such as training workshops and seminars in order to improve the functionality of the system for a wider use among countries in the region. During the workshop, participants from eight countries in the ASPAC region shared and exchanged information, knowledge and experiences on the status of the development of the APASD, and critical issues concerning alien invasive species in each country. Specifically the activity aimed to:

- Determine the status of the development of the APASD toward enhancing the sharing of recent information on invasive alien species (AIS) among countries in the region;
- Deliberate on the critical issues concerning alien invasive species, with regional scientists providing data and confirming species to be inputted into the database;

<http://apasd-niaes.dc.affrc.go.jp/>



- Establish a cooperation mechanism to further solidify building up the database; and
- Discuss and exchange research and monitoring information on invasive alien species and update the APASD system to make it more functional and user-friendly.

The APASD (www.apasd-niaes.dc.affrc.go.jp)

The APASD (www.apasd-niaes.dc.affrc.go.jp) is an Internet database that enables the sharing of recent information on invasive alien species among ASPAC countries. Website administration is provided by the National Institute for Agro-Environmental Sciences (NIAES) of Japan.

The APASD can store large amounts of information on diverse invasive alien species in many countries. Contributors can input data items, and can modify, add, or delete them easily and rapidly. Users can easily search for and read much information on specific species and items. Because contributors can renew their data anytime, it is easy to obtain updated information on invasive alien species.

The target of the database is the Asian and Pacific region, with emphasis on Asia. The region is very wide and includes different biogeographical areas, but there are some common characteristics: for example, the countries exist in neighboring zones and are being seriously invaded by invasive alien species from other, relatively distant biogeographical regions such as north and south America.

The purpose of the APASD is to help prevent the invasion and spread of alien species and to

decrease the economic and environmental damage caused by them. Therefore, information that is useful for early detection, emergency control, integrated pest management (IPM), and risk assessment must be inputted. Data on invasive alien species such as plants, insects, nematodes, mammals, other animals, fungi, bacteria, and viruses are accumulated based on taxonomy, establishment, distribution, environmental impact, economic damage, reproduction, growth, countermeasure, habitat, photographs of alien species and damage, and reference literature. If a very important species has invaded certain countries, contributors in those countries can input updated data and inform clients in countries where the species is already present or where there is a threat of invasion.

Toward continuously improving the APASD

There is clearly a great concern among countries in the ASPAC region on the increasing rate of introduction of invasive alien species (IAS). The economic damage and ecological impacts caused by these IAS have also been increasing, such that different countries have established their own system/mechanism for early detection, emergency control, integrated pest management (IPM), and risk assessment to prevent spread and potential damages and losses.

To cope with this growing concern on IAS, the APASD system must be made more functional and user-friendly, and must have a good interface and working link with the various projects and databases on invasive alien species worldwide. Toward the development, refinement, improvement,



**Demonstration/
workshop on data
input/build-up and
other technical
components of APASD.**

and more efficient exchange of information among countries, an APASD network mechanism in the region must be established, aimed at increasing the amount of data inputted into the database. An efficient network of institutions among participating countries, each with a focal person/coordinator, is envisioned to translate into a better/more efficient database operation.

The continuous build-up of APASD is important for the database to benefit every nation in the region in terms of safeguarding their agricultural environment from invasive alien species. However, the success of the APASD will very much depend on the institutional commitment and support of each participating country, primarily in setting up the operational network mechanism for data input and buildup.

International Workshop on Development of Database (APASD) for Biological Invasion

Held in TACTRI, Taichung, Taiwan ROC on September 18-22

No. of countries participating: 8 (Cambodia, Japan, Malaysia, Philippines, Taiwan ROC, Thailand, and Vietnam)

No. of papers presented: 14

No. of participants: 60

Co-sponsors: National Institute for Agro-Environmental Sciences (NIAES), Japan; Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ), COA, Taiwan ROC; Taiwan Agricultural Chemicals and Toxic Substances Research Institute (TACTRI), COA, Taiwan ROC

List of papers

Keynote papers

1. Current status of the database (APASD) and its international network
 - Atsushi Mochizuki, NIAES, Japan
2. Current status and development of plant pest information management system in Taiwan
 - Ying Yeh, BAPHIQ, COA, Taiwan ROC

Resource papers

3. Invasion of the coconut hispine beetle, *Brontispa longissima*: current situations and control measures in southeast Asia
 - Satoshi Nakamura, JIRCAS, Japan
4. Introduction of Taiwan agricultural pest database
 - Hsien-Tzung Shih, Agricultural Research Institute (ARI), COA, Taiwan ROC

5. Global invasive plants in Thailand and its status and a case study of *Hydrocotyle umbellata* L.
 - Siriporn Zungsontiporn, Department of Agriculture, Thailand
6. Application of the APASD and practical exercise for data inputting
 - Ikuko Okabe and Akihiro Konuma, NIAES, Japan

Country papers

7. Managing alien invasive species in Malaysia
 - Yahaya bin Hussain, MARDI, Malaysia
8. Monitoring of two exotic spider mites in Taiwan
 - Chyi-Chen Ho, ARI, COA, Taiwan ROC
9. Crop improvement and biotechnology in Cambodia
 - Ty Channa, Agricultural Research and Development Institute (CARDI), Cambodia
10. Invasive alien species (IAS): concerns and status in the Philippines
 - R.C.Joshi, PhilRice, Philippines
11. Naturalized alien plants in Taiwan: information based on publications
 - Mou-Yen Chiang, TACTRI, COA, Taiwan ROC
12. Application of molecular technologies for quick identification of invasion pathogens
 - Le Dinh Don, Nong Lam University, Vietnam

Institutional reports

13. SEARCA: responding to challenges in agriculture and natural resource management in southeast Asia
 - Carmen Nyhria G. Rogel, SEARCA, Philippines
14. Harnessing information and technology transfer for sustainable agricultural development in the ASPAC region: the FFTC report
 - Cristina Bejosano-Gloria, FFTC, Taiwan ROC

For further information, contact:

Dr. Te-Yeh Ku, FFTC Technical Consultant