

INGER@40

The International Network for Genetic Evaluation of Rice (www.inger.irri.org), formerly known as the International Rice Testing Program (IRTP), is a 40-year old partnership of national agricultural research and extension systems (NARES) and international agricultural research centers (IARCs) to facilitate multilateral germplasm exchange and promote global evaluation and use of elite breeding lines.

How INGER works

Member institutions contribute advanced lines to INGER. Seeds are multiplied at IRRI, assembled into nurseries, and sent to NARES partners. Cooperators test nurseries for ecosystem adaptation and stress tolerance. NARES use the best lines for direct varietal release or as parents in hybridization.

To date, 55,548 breeding lines have been evaluated by hundreds of rice scientists at over 600 research stations in 85 countries. Trial data received at IRRI are analyzed and annual reports are posted at the INGER website (www.inger.irri.org/resources/master-fieldbooks).

Global impact

Overall, 1,119 INGER-tested lines have been released as varieties in 74 countries. Cooperators in 51 countries made more than 20,000 crosses using genetic donors from 68 countries. Some 1,129 breeding lines extracted from these crosses were released as varieties in 21 countries. Economists from the University of Yale, Evenson and Gollin (1997), estimated that each released variety contributes US\$2.5 M annually to the global economy.



In India, 43% of varietal releases were introduced by INGER. Some 252 varieties with INGER-derived parents have been released in 24 Indian states.

In China, 246 inbreds and 34 hybrids have been developed using INGER materials directly or indirectly. From 1981–2012, 16.6 M hectares planted to INGER-derived materials produced 6.2 M tons valued at US\$53 M.

INGER's impact is even more pronounced in smaller and newer breeding programs. Percentages of varietal releases directly or indirectly traceable to INGER were 73% for Nepal, 72% for Myanmar, 61% for Indonesia, and 51% for Cambodia.

INGER has helped IRRI generate impact even in countries not covered by major projects such as STRASA. To date, 507 IRRI breeding lines have been released as 914 varieties in 78 countries in 5 continents.

Recent initiatives

- Streamlined nurseries and created new ones to address current issues like climate change
- Fingerprinted NARES materials to alleviate their IP-related concerns
- Developed a new INGER website from which users can download reports, submit trial data, access procedures for requesting nurseries/breeding lines, and retrieve relevant forms
- Generated the fifth edition of the Standard Evaluation System and varietal release database for rice

The way forward

INGER has to evolve into a system that highly promotes active participation of NARES and international research centers. Specifically, it should work to enhance two-way germplasm exchange and increase data return. Access to the most advanced and well-characterized multi-environment (MET) germplasm and a system of rewards and benefits can be incentives to raise the level of NARES' contribution to INGER.

International Rice Research Institute (IRRI)

IRRI is the world's premiere research organization dedicated to reducing poverty and hunger through rice science; improving the health and welfare of rice farmers and consumers; and protecting the rice-growing environment for future generations. Headquartered in the Philippines and with offices in 16 countries, IRRI is a global, independent, nonprofit research and training institute supported by public and private donors.

IRRI breeds and introduces advanced rice varieties that yield more grain and better withstand pests, disease, as well as flooding, drought, and other negative effects of climate change. The rice institute develops new and improved methods and technologies that enable farmers to manage their farms profitably and sustainably. IRRI recommends rice varieties and agricultural practices suitable to particular farm conditions as well as consumer preferences. Finally, IRRI assists national agriculture research and extension systems (NARES) in formulating and implementing national rice sector strategies and programs.

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