The IRRI Experiment Station

Exploring the future of rice farming

As the original home of the Green Revolution in Asia, the IRRI experiment station (ES) was the site where some of the world's most productive and important rice varieties were developed and first tested. Some example of these varieties are IR42, IR36 and IR8 which dramatically increased rice's yield potential, ushering in an exciting new era in Asian food security and rural development.

Covering 209 ha, the ES has 943 fields, 33 greenhouses (totalling 9,300 m^2), 25 screenhouses (Totalling 19,600 m^2), and a phytotron with controlled environment facilities. These facilities are serviced and supported by 74 staff.

Most importantly, the ES is a showcase of some of the most advanced rice research in the world.

Fast facts:

- The ES welcomes an average of 33,418 visitors every year, among which 1,459 are VIPs.
- The ES is home to the longest-running continuous cropping experiment in Asia, where rice has been planted three times a year from 1963 up to the present.
- It is host to more than 100 successful experiments every season.
- Thirteen electric irrigation pumps and more than 22 km of pipes supply water to the whole experiment station.
- It provides highly controlled growth conditions, greenhouses, screenhouses, and fields relevant to real conditions in rice systems across the world: heat, controlled daylength, drought, salinity, deep water, aerobic conditions, etc.
- ES hosts the most prolific submergence-tolerance screening progam. This is set to increase as the need for submergence-tolerant varieties is fast growing.

One of the most technologically advanced rice farms in Asia, the ES uses a range of state-of-the-art technologies.

More than half of its fields are used for breeding research to improve rice yield, grain quality, resistance to pest and diseases, and tolerance for enrironmental stress and to lessen input requirements.

The ES hosts research on high nutrient rice that is seen significant in helping people get enough important micronutrients through rice consumption and address major public health issues today and in the future.

Our irrigation research looks at effectively managing either an abundance or lack of water in different environments. Through this research, efficient irrigation scheduling and drainage management is now practiced by more farmers in Asia.

The system of alternate wetting and drying was developed to enable farmers to cut their water use to as much as 30% without compromising their yields.

The nutrient use and uptake of rice is also one of the researches hosted in the ES to make best use of both organic and inorganic fertilizers.

Rural Development Administrator in Korea, Dr. Jae-Soo Kim, examines rice varieties developed in the ES.

The ES is committed to reducing environmental cost and maximizing environmental benefits from rice farming. It has an Environment Management System that focuses on reducing energy use, pesticide use, and emissions while improving air quality and waste management.

Pesticides are sparingly used. Our equipment and application methods ensure that the right pesticide is applied precisely on the target, minimizing exposure to the applicator and the surrounding environment. We choose pesticides that have short residual periods in the environment and minimal effect on other organisms.

One of the most technologically advanced rice farms in Asia, the ES uses a range of state-of-the- art technologies, including laser-levelling of fields, weather-based irrigation scheduling, modern recirculating dryers, and rice milling facilities.

It uses an auto-steer tractor, drive-on bunds for better field access, and a modern 26 meter spray boom for pesticide and liquid fertilizer application. The spray boom also provides a platform for a range of plant-sensing technologies to assist the breeding and agronomy programs.

Today, the ES has a program of reducing the time and energy required to conduct field, irrigation, and postharvest activities, the same challenge faced in many rice-growing areas of the world. These programs include reducing tillage for land preparation, recycling drainage water from fields, and grain drying using waste heat and geothermal energy.

The ES has a modern rice mill that uses a re-circulating dryer to immediately dry incoming paddy, both abrasion and mist polishing and color-sorting. These processes, when applied to timely harvested paddy rice, produce a high- quality milled product.

The president of the Socialist Republic of Vietnam, H.E. Truong Tan Sang, (center) is shown around the Long-Term Continuous Cropping Experiment field by IRRI Director General Robert Zeigler (second from right).

U.S. Secretary of Agriculture Thomas Vilsack harvests rice during his visit to the ES.

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