

SUR 15 INTA Technology. Herbicide-Resistant Rices



Working group: Rice genetic improvement group. EEA Concepción del Uruguay.
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Statement of problem:

Weeds are one of the key agronomic factors that hinders rice production in Argentina. Weeds are capable of reducing crop yields by approximately 30%. Abuse and poor use of the Clearfield technology has led to the selection of resistant red rice weed (*Oryza* spp.) biotypes and different types of species of barnyard grass (*Echinochloa* spp.) that constitute a threat to production across the rice-growing area.

Technology Readiness Level:

Advanced. Presently, it features promising lines in comparative yield assays in which they are tested against commercial samples. The next step is the evaluation of the interaction with the environment in an assay network.

Technology proposal:

INTA is working on developing a sustainable production system to control resistant weeds with lower environmental impact.

INTA proposal is to use this technology, named SUR INTA, alternatively with existing herbicide resistance technologies. INTA developed the first one, named CLEARFIELD (trademark) and BASF developed the second one, named PROVISIA. Relying on three sources of genetic resistance grants farmers the tools required to better control weeds and minimize the appearance of resistant weeds.

The lines generated with this technology are also cold resistant in the germination stage and the seedling state. This agronomic attribute enables early crop planting, which guarantees better competition with the initial weed populations and protection from end-of-cycle crop diseases. This results in lower consumption of phytosanitary products.

This new technology is the second source of non-transgenic herbicide resistance developed by the Working Group on Genetic Improvement of Rice from EEA INTA Concepción del Uruguay. The first one was launched in 2005 and enabled to grow Imidazolinone-resistant cultivars. These varieties are the most widely spread in Latin America and other rice-producing countries. Only in Brazil, the greatest rice producer in Latin America, the varieties with IMI INTA technology make up 80% of the Irrigated Rice area.

Finally, all these attributes are aligned with the excellent industrial and culinary quality inherent in our genetics, known as one of the best in the world and with added value in local and international markets.

Development requirements (testing, scale-up production, investment, etc.):

INTA is in the process of intellectual property rights protection for the new development. Subsequently, it will seek partnerships with private sector companies interested in the implementation.