

Imidazolinone (IMI) – Resistant Common Wheat Plants

Working group: Group on Induced Mutations in Cultivated Plants. Ewald A. Favret Genetics Institute (IGEAF -CICVyA).

Statement of problem:

Emergence of weeds in the wheat crop and, potentially, Fusarium damage.



Technology Readiness Level:

Medium. The inheritance of high IMI tolerance has been determined by stacking genes that grant IMI tolerance through different mechanisms. This reduces the negative effect produced by carrying more than one tolerance gene with similar function.

To date, we rely on advanced families with such traits, and some feature improved Fusarium tolerance.

A selection methodology is under study, which could be improving both traits simultaneously.

Technology proposal:

We are working to obtain IMI-resistant wheat plants that carry more than one tolerance gene but do not suffer yield reductions. Several selected families develop great vigor and yield, in addition to tolerance. Concurrently, a number of the selected families displayed differential behavior in the face of different Fusarium species and considerable reduction of fungal damages, aside from IMI tolerance.

Necesidades para su desarrollo (realización de pruebas, producción a escala, inversión, etc.):

Estudio de los genes involucrados en mecanismos de la tolerancia a IMI y a Fusarium; secuenciación de genes y experimentos dirigidos a la determinación de la base genética de los caracteres.