

Competitive Allele Specific Polymerase chain reaction markers identified for important contributor to dietary fibre in wheat

Project Title: P1376 - Evaluate end use and nutrition characteristics of bread and durum wheat

Description of the innovation: Arabinoxylans (AX) are the major components of dietary fibers (DF) in wheat grain and their consumption has been associated with multiple health benefits. In silico analysis of the genomic region delimited by the most significant 1BL markers (~8 Mb) identified a predicted gene encoding which is likely a candidate gene associated with the observed AX variation. Results of this study constitute an important contribution for the improvement of grain DF in wheat breeding programs.

New Innovation: Yes

Stage of innovation: Stage 3: available/ ready for uptake (AV)

Innovation type: Biophysical Research

Geographic Scope: Global

Number of individual improved lines/varieties: <Not Applicable>

Description of Stage reached: A predicted gene encoding for a glycosyl transferase (GT) of the GT61 family was identified. This information is now ready to use for wheat breeders.

Name of lead organization/entity to take innovation to this stage: CIMMYT - Centro Internacional de Mejoramiento de Maíz y Trigo / International Maize and Wheat Improvement Center

Names of top five contributing organizations/entities to this stage: <Not Defined>

Milestones:

- At least 600 new elite lines generated by the CRP Wheat breeding programs made available to NARS partners through international trials and nurseries.

Sub-IDOs:

- 14 - Increased availability of diverse nutrient-rich foods

Contributing Centers/PPA partners:

- CIMMYT - Centro Internacional de Mejoramiento de Maíz y Trigo / International Maize and Wheat Improvement Center

Evidence link:

- <https://doi.org/10.1016/j.jcs.2021.103166>

Deliverables associated:

- D26385 - Better quality and more nutritious wheat available to cooperators and for release (<https://doi.org/10.1093/g3journal/jkab270>)
- D10400 - Wheat lines characterized for processing, end-use and nutritional quality (**Not disseminated**)
- D26384 - Wheat lines characterized for quality traits (<https://doi.org/10.1016/j.jcs.2021.103166>)

Contributing CRPs/Platforms:

- Wheat - Wheat