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P284 : Wheat, Barley, Rye, Oat, and related

The WheatCAP Project: Creating Public Long-Term Tools And Capabilities For Wheat Improvement

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The public sector is responsible for most of the commercial wheat cultivars released in the US. Since 2005 USDA-CREES funded a consortium of breeders, USDA's high-throughput genotyping labs and GrainGenes. The project aimed to develop mid and longer term resources in those areas that would have the greatest impact in wheat breeding: education, public awareness, marker-assisted breeding and genetic mapping studies in relevant populations. During its 4-year duration 60 papers were published in peer-reviewed journals and around 100 presentations, posters and lectures were delivered in technical, extension, educational and scientific meetings. Students from high-school and undergraduate levels participated in introductory courses and activities on molecular breeding, and graduate students and postdoctoral fellows received training or were involved in relevant research projects. Participating breeders incorporated Marker Assisted Selection strategies in their breeding programs in collaboration with the genotyping labs. Half a million datapoints were generated during the project and more than 90 germplasm and cultivars were released. Participants developed 17 mapping populations that were deposited at the National Small Grains Collection to make them publicly available. Maps have been developed and breeding programs are adding QTLs addressing their specific regional and market needs. Maps and QTL data for six of these populations have already been deposited in GrainGenes. In addition, the project web site (<http://maswheat.ucdavis.edu>) hosts a large array of molecular markers protocols, project information and educational resources. The WheatCAP project has facilitated the communication and interaction among the US public and private wheat breeders and researchers.