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Poster Abstract – D.21

AWN DEVELOPMENT IN BARLEY: DATA INTEGRATION FOR EFFECTIVE VIRTUAL CROP MODELLING

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Crop Systems Biology is a promising approach to fulfil challenges in improving complex traits. It combines modern functional genomics and traditional sciences approaches, such as crop physiology and biochemistry, to understand phenotype at the crop level (e.g. grain yield). Data integration thus plays a fundamental role in systems-based approaches and numerous studies are underway to deal with this issue.

Our study shows an example of such a working strategy for the analysis of awn development in barley. The role of awn photosynthetic activity, particularly during stress periods, on grain yield has been largely proven: as a consequence awn characteristics have received quite a lot of attention from the breeders.

Here, a mutant phenotype with a modified awn shape and increased awn area has been utilize as a black box in comparison with its wild type counterpart. System responses to both genotype and environment changes are being evaluated as a basis for application of virtual crop modelling.