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Brachypodium: the Small Plant Making a Big Impact on Root Research

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Brachypodium distachyon. Dr Michelle Watt, CSIRO

Brachypodium distachyon may be a tiny plant but it is having a big impact on cereal productivity research at Australia's CSIRO and around the world. With the recent unravelling of the genome sequence of this wild grass species the Brachypodium genome can now be used as a template for analysis of crops such as wheat due to its similar gene content and gene family structure.

CSIRO's Dr Michelle Watt and Dr Bob Furbank are leading a growing research team using Brachypodium to increase the understanding of genes responsible for growth and yield in food crops and to speed up wheat improvement.

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Improving cereal productivity using genomics has been limited in the past by the genetic complexity and long lifecycle of

Brachypodium will accelerate the functional and genetic understanding of wheat roots because it can be grown to maturity in much smaller volumes and has a very similar root system to wheat.

In water limited environments like Australia the ability to study mature root system genes is very important for improving water use efficiency and yield in wheat, and allows for the rapid advance of research into increasing yield and stress tolerance in food crops.

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