Tingting Wu

Biography

Tingting has a Bachelor's degree in “Agronomy” from China Agriculture University (CAU) and a Master's degree in “Agriculture Science” specialized in “Genetics and Breeding” from The University and Western Australia (UWA). She joined the Batley Lab and started her PhD from August 2019.

Research Interests

Genomics, Plant-pathogen interaction, Resistance Genes, Gene expression,

Current Projects

**Genome-wide identification of disease novel resistance gene in *Brassica napus* and wild relatives**

Summary: *Brassica napus* (canola) plays a significant role in the agriculture industry in Australia; it is the third export income source among the agriculture products in the nation. However, blackleg disease, caused by the fungus *Leptosphaeria maculans*, threatens Australia’s canola industry productivity severely. Former studies have disclosed the gene-for-gene interaction mechanism between the host and pathogen where *B. napus* containing a particular resistance *(R)* gene will interact with the corresponding effector *(Avr)* gene in *L. maculans* to trigger a resistance response. Although a number of *R* genes have been found in *Brassica*, a limited number of genes have been identified and applied into blackleg resistant cultivars. This limited number increases the chance of resistance break down. Therefore, in this study, we aim to identify and characterize a less known novel *R gene - RlmS*. Initially, phenotypic screening of different *B. napus* lines and wild relatives with *AvrLmS* and *avrLmS L. maculans* isolates will be performed. Next, whole-genome resequencing and SNP genotyping will be conducted on resistant and susceptible *B. napus* lines. The results will be used in a genome-wide association study (GWAS) to discover association between the causative SNPs and *RlmS* resistance. Then, the *RlmS* candidate genes will be validated via cloning sequence anaylsis. These methods to identify and characterize *RlmS* gene in *Brassica* cultivars and wild species would contribute to a more diverse and durable blackleg resistance gene resource for canola breeding.

Publications

**Journal Articles**

Qiu, L., Wu, T., Dong, H. et al. High-Level Expression of Sporamin in Transgenic Chinese Cabbage Enhances Resistance Against Diamondback Moth. Plant Mol Biol Rep 31, 657–664 (2013). <https://doi.org/10.1007/s11105-012-0536-1>

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