Shu Mohd Saad

Biography

Shu first joined the Batley Lab as a summer research student under the supervision of Dr Jessica Dalton-Morgan while completing her third-year study in Biotechnology (majoring in Molecular Biotechnology) at the University of Queensland, Brisbane. She continued on the following semester as an Honours student under Prof Jacqueline Batley’s supervision. Upon completing her studies she returned to Malaysia and joined the Genetic Screening Services at the Malaysian Genomics Resource Centre, Kuala Lumpur for a year before pursuing a Master’s degree in Science (Biotechnology) at Universiti Teknologi Malaysia, Johor. She received the International Research Training Program Fees Offset Scholarship and Research Training Program Stipend from the University of Western Australia and started her PhD in March 2018.

Research Interests

Plant genetics, Blackleg resistance, R gene, nanopore sequencing, plant breeding

Current Projects

**Identifying and characterising Resistance to *Leptospaheria maculans* (*Rlm*) candidate genes in Brassica species**

Blackleg or stem canker, caused by the fungus *Leptosphaeria maculans*, has remained one of the fundamentally damaging diseases affecting canola cultivation. A more feasible long-term management is critical to improve canola production, such as the development of disease-resistant canola cultivars. Only three (*Rlm2, LepR3* and *Rlm9*) of the fifteen major resistance genes to blackleg have been cloned, to date. My research aims to focus on two *Rlm*genes (*Rlm1* and *Rlm6*) originating from two different *Brassica* species, using sequencing and phenotyping approach. The isolation and subsequent characterisation of more resistance genes in *Brassica* species will hopefully provide a better insight into the *Brassica - L. maculans* pathosystem. This will also contribute to future breeding efforts for sustainably resistant canola varieties.

Additionally, we look into screening for the cloned resistance gene composition in Australian cultivars. Phenotyping could not distinguish between the two genes interacting with the *AvrLm1* gene. Hence, we specifically look at the presence or absence of *LepR3* in cultivars interacting with the *AvrLm1* gene.

Publications

**Mohd Saad NS**, Severn-Ellis AA, Pradhan A, Edwards D and Batley J (2021) Genomics Armed With Diversity Leads the Way in *Brassica* Improvement in a Changing Global Environment. Front. Genet. 12:600789. doi: 10.3389/fgene.2021.600789

Cantila AY, **Saad NSM**, Amas JC, Edwards D, Batley J. Recent Findings Unravel Genes and Genetic Factors Underlying *Leptosphaeria maculans* Resistance in *Brassica napus* and Its Relatives. International Journal of Molecular Sciences. 2021; 22(1):313. <https://doi.org/10.3390/ijms22010313>

Severn-Ellis, AA, Scheben, A, Neik, TX, **Saad, NSM,** Pradhan, A & Batley, J 2020, 'Genotyping for Species Identification and Diversity Assessment Using Double-Digest Restriction Site-Associated DNA Sequencing (ddRAD-Seq)', in M Jain & R Garg, (eds), Legume Genomics: Methods and Protocols, pp. 159-187. Springer US, New York, NY.

**Mohd Saad, NS** 2017, ‘Identifying Candidate Putative Genes for Blackleg Resistance *Rlm2* in *Brassica napus*’, in FZ Huyop & MF Edbeib, (eds), The Discovery of Potential Products from Plants, pp. 37-46. Penerbit UTM Press, Johor, Malaysia.

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