



## Curriculum vitae

Name: Muhammad Asyraf Md Hatta  
Date of birth: 5 November 1986  
Nationality: Malaysian  
Address: Department of Agriculture Technology, Faculty of Agriculture, Universiti Putra Malaysia, 43400, UPM Serdang, Selangor, Malaysia  
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## Career and education:

2017-present Senior Lecturer  
Universiti Putra Malaysia  
2010-2017 Tutor  
Universiti Putra Malaysia  
2013-2017 University of East Anglia (John Innes Centre)  
PhD in Biological Sciences  
**Supervisor:** Dr. Brande B. H. Wulff  
**Thesis title:** Host range expansion of wheat stem rust resistance genes into barley  
2011-2013 Wageningen University and Research Centre  
MSc in Plant Biotechnology  
**Supervisor:** Dr. Jack H. Vossen  
**Thesis title:** Functional validation of late blight resistance genes and their complementarity in stacks  
2006-2010 International Islamic University of Malaysia  
BSc in Biotechnology  
CGPA: 3.62

## Publications:

### Journal Publications

- Sanu Arora, Burkhard Steuernagel, Kumar Gaurav, Sutha Chandramohan, Yunming Long, Oadi Matny, Ryan Johnson, Jacob Enk, Sambasivam Periyannan, Narinder Singh, **M. Asyraf Md Hatta**, Naveenkumar Athiyannan, Jitender Cheema, Guotai Yu, Ngondzashe Kangara, Sreya Ghosh, Les J Szabo, Jesse Poland, Harbans Bariana, Jonathan DG Jones, Alison R Bentley, Mick Ayliffe, Eric Olson, Steven S Xu, Brian J Steffenson, Evans Lagudah, Brande BH Wulff.

Resistance gene cloning from a wild crop relative by sequence capture and association genetics  
*Nature Biotechnology* 2019 Feb; 37: 139-143.

- Amy Watson, Sreya Ghosh, Matthew Williams, William S Cuddy, James Simmonds, Maria-Dolores Rey, **M. Asyraf Md Hatta**, Alison Hinchliffe, Andrew Steed, Daniel Reynolds, Nikolai Adamski, Andy Breakspear, Andrey Korolev, Tracey Rayner, Laura E Dixon, Adnan Riaz, William Martin, Merrill Ryan, David Edwards, Jacqueline Batley, Harsh Raman, Christian Rogers, Claire Domoney, Graham Moore, Wendy Harwood, Paul Nicholson, Mark J Dieters, Ian H DeLacy, Ji Zhou, Cristobal Uauy, Scott A Boden, Robert F Park, Brande B H Wulff, Lee T Hickey.

Speed breeding: a powerful tool to accelerate crop research and breeding  
*Nature Plants* 2018 Jan 1;4: 23-29.

- Burkhard Steuernagel, Sambasivam K Periyannan, Inmaculada Hernández-Pinzón, Kamil Witek, Matthew N Rouse, Guotai Yu, **Asyraf Hatta**, Mick Ayliffe, Harbans Bariana, Jonathan D G Jones, Evans S Lagudah, Brande B H Wulff.  
Rapid cloning of disease-resistance genes in plants using mutagenesis and sequence capture  
*Nature Biotechnology* 2016 Apr 25;34: 652-655.

#### Book Chapters

- **M. Asyraf Md Hatta**, Burkhard Steuernagel, Brande B H Wulff.  
Rapid gene cloning in wheat  
*Applications of genetic and genomic research in cereals* 2019 Jan 1; 65-95.
- Guotai Yu, **Asyraf Hatta**, Sambasivam K Periyannan, Evans S Lagudah, Brande B H Wulff.  
Isolation of wheat genomic DNA for gene mapping and cloning  
*Methods Molecular Biology* 2016 Aug 31;1659.

#### **Invited talks:**

- **M. Asyraf Md Hatta**  
Engineering stem rust resistance in wheat and barley with cloned resistance genes  
*Colloquium in Plant Protection* 2019.
- **M. Asyraf Md Hatta**, Ryan Johnson, Oadi Matny, Mark A Smedley, Guotai Yu, Soma Chakraborty, Dhara Bhatt, Xiaodi Xia, Sanu Arora, Burkhard Steuernagel, Teresa Richardson, Rohit Mago, Evans S Lagudah, Nicola Patron, Mick Ayliffe, Matthew N Rouse, Wendy A Harwood, Sambasivam K Periyannan, Brian J Steffenson, Brande B H Wulff.  
Host range expansion of wheat stem rust resistance genes into barley  
*Joint Symposium of the 8th International Agricultural Congress* 2018.

- **M. Asyraf Md Hatta**, Ryan Johnson, Oadi Matny, Mark A Smedley, Guotai Yu, Nicola Patron, Mick Ayliffe, Matthew N Rouse, Wendy A Harwood, Sambasivam K Periyannan, Brian J Steffenson, Brande B H Wulff.  
The wheat *Sr22* and *Sr33* genes confer disease resistance against stem rust in barley  
*Crop Genetics Departmental Seminar, John Innes Centre 2017.*
- **M. Asyraf Md Hatta**  
Targeting the wheat stem rust resistance gene *Sr44* for cloning by mutational genomics and transgene pyramiding by CRISPR/Cas9-mediated gene-addition  
*RenSeq Workshop, John Innes Centre 2015.*
- **M. Asyraf Md Hatta**, Mark A Smedley, Ryan Johnson, Brian J Steffenson, Ian Dundas, Nicola J Patron, Wendy A Harwood, Brande B H Wulff.  
Targeting the wheat stem rust resistance gene *Sr44* for cloning and transgene pyramiding of multiple *R* genes  
*Crop Genetics Departmental Seminar, John Innes Centre 2015.*
- **M. Asyraf Md Hatta**, Mark A Smedley, Ryan Johnson, Brian J Steffenson, Ian Dundas, Nicola J Patron, Wendy A Harwood, Brande B H Wulff.  
Cloning the *Sr44* resistance gene by mutational genomics and transgene pyramiding by CRISPR/Cas9-mediated gene-addition  
*The Sainsbury Laboratory Students Annual Science Meeting, The Sainsbury Lab 2015.*

#### Poster presentations:

- **M. Asyraf Md Hatta**, Mark A Smedley, Ryan Johnson, Brian J Steffenson, Ian Dundas, Nicola J Patron, Wendy A Harwood, Brande B H Wulff.  
Targeting the wheat stem rust resistance gene *Sr44* for cloning by mutational genomics and transgene pyramiding by CRISPR/Cas9-mediated gene-addition  
*Monogram Network Meeting, Cambridge 2016.*
- **M. Asyraf Md Hatta**, Mark A Smedley, Ryan Johnson, Brian J Steffenson, Ian Dundas, Nicola J Patron, Wendy A Harwood, Brande B H Wulff.  
Targeting the wheat stem rust resistance gene *Sr44* for cloning by mutational genomics and transgene pyramiding by CRISPR/Cas9-mediated gene-addition  
*Norwich-Cambridge Student Symposium for Plant and Microbial Sciences, John Innes Centre 2015.*
- **M. Asyraf Md Hatta**, Mark A Smedley, Brian J Steffenson, Ian Dundas, Nicola J Patron, Wendy A Harwood, Brande B H Wulff.  
Targeting the wheat stem rust resistance gene *Sr44* for cloning by mutational genomics and transgene pyramiding by CRISPR/Cas9-mediated gene-addition  
*Annual Science Meeting, Norwich Bioscience Institute 2015.*

- **M. Asyraf Md Hatta**, Mark A Smedley, Jamie Kaufman, Brian J Steffenson, Nicola J Patron, Wendy A Harwood, Brande B H Wulff.  
Wheat stem rust resistance gene cloning and transgene pyramiding by mutational genomics and CRISPR/Cas9-mediated gene-addition  
*Annual Science Meeting, Norwich Bioscience Institute 2014.*

### **Teaching courses:**

- Agricultural Biotechnology (TKP3104)  
Universiti Putra Malaysia, Semester 2 2017/2018, Semester 1 2018/2019,  
Semester 1 2019/2020  
Theoretical and practical courses (3 credits)
- Agricultural Chemistry and Biochemistry (PRT3403)  
Universiti Putra Malaysia, Semester 2 2017/2018  
Theoretical and practical courses (4 credits)
- Agricultural Biochemistry (PRT3402)  
Universiti Putra Malaysia, Semester 2 2018/2019  
Theoretical and practical courses (3 credits)
- Agriculture and Man (PRT2008)  
Universiti Putra Malaysia, Semester 1 2018/2019, Semester 1 2019/2020  
Theoretical courses (2 credits)

### **Personal affiliations and services:**

#### Professional Society Memberships

- Member, British Society for Plant Pathology, United Kingdom, 2013 - 2017
- Member, Genetics Society, United Kingdom, 2013 - 2017

#### Editorial Board

- Editorial Board, Biotech Studies Journal, Turkey, 2020 - present

### **Scholarships:**

- PhD Scholarship from Ministry of Higher Education of Malaysia, 2013 - 2017
- MSc Scholarship from Universiti Putra Malaysia, 2011 - 2013
- BSc Scholarship from Public Service Department of Malaysia, 2006 - 2010

### **Skills:**

#### Laboratory skills

- CRISPR/Cas9 gene editing
- Golden Gate cloning
- Protoplast isolation and transfection

- Barley and potato transformation
- EMS mutagenesis of plant
- Cross pollination of wheat
- Library preparation for Next Generation Sequencing
- Targeted enrichment of structural class of genes
- Bacterial transformation
- PCR
- Bacterial and plant DNA extraction
- Confocal microscopy
- Light microscopy

#### Technical skills

- Microsoft Office (Power Point, Excel, Outlook)
- Adobe Photoshop
- Adobe Illustrator
- Vector NTI
- Galaxy
- EndNote
- SPSS

#### References

1. Dr Brande B. H. Wulff,  
Project Leader,  
Crop Genetics Department,  
John Innes Centre,  
Colney Lane, Norwich,  
NR4 7UH, United Kingdom  
Brande.Wulff@jic.ac.uk
2. Dr Norsida Binti Man,  
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