

# Curriculum Vitae

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Name: Caixia Lan

Gender: Female

Birth date: 1983.5

E-mail: cxlan@mail.hzau.edu.cn

**Research Area: Genetic analysis of multiple fungal disease resistance in wheat and molecular breeding**



## Education Background

Sep. 2007—June 2010: PhD student in Crop Genetics and Breeding, Institute of Crop Science, Chinese Academy of Agricultural Sciences/CIMMYT China Office. The title of dissertation for PhD was ‘QTL mapping for adult-plant resistance to stripe rust and powdery mildew in common wheat’

Sep. 2004—June 2007: MS student in Crop Genetics and Breeding, College of Agronomy, Shenyang Agricultural University. Subject of thesis was ‘The research on lodging-resistance properties in japonica hybrid’

Sep. 2000—June 2004, BS in Agronomy, Inner Mongolia University for the Nationalities  
Working Experience

## Working Experience

May 2018 to present: I am a full professor in College of Plant Science & Technology of Huazhong Agricultural University in Wuhan, China

Feb. 2011 to May 2018: I was a scientist in Wheat Breeding Group in Global Wheat Program in CIMMY and leading rusts research group to control wheat rusts through complex resistance.

July 2010 — Feb. 2011, I was a lecturer in Huazhong Agricultural University in Wuhan, China and focused on teaching & wheat molecular breeding.

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## Honors and Awards

1. Nominated as an ‘Chutian scholarship’ of Hubei Province in 2019
  2. Winner of 2011 Jeanie Borlaug Women in Triticum Award, 2011, Borlaug Global Rust Initiative, Cornell University, Ithaca, USA
  3. Candidate of the 100 excellent PhD dissertation, 2010, Chinese Academy of Agricultural Sciences, Beijing
  4. Outstanding postgraduate student award, 2010, Chinese Academy of Agricultural Sciences, Beijing
  5. Outstanding presentation award of young scientist, 2010, The 6 th National Symposium on Wheat Genetics and Breeding, Yangzhou
  6. Outstanding postgraduate student award, 2006, Shenyang Agricultural University, Shenyang
- Published articles (# means equally contribution, \* means corresponding author)

## Managed research projects:

1. 2011-2013, Chair of a Doctoral Program Fund for Young Scientist (RMB 40,000), completed
2. 2012-2015, Chair of an International Foundation of Science (12,000 USD), completed
3. 2014-2016, Chair of a National Science Foundation of China (RMB 270,000), completed
4. 2012-2017, Participant of Grains Research and Development Corporation (500,000 USD / year), complete
5. 2019-2023, Chair of a National Science Foundation of China (RMB 1.58 million), on going
6. 2019-2022, Chair of a Huazhong Agricultural University Scientific & Technological Self-innovation Foundation (RMB 240,000), on going

## Publications in last 5 years (# means equally contribution, \* means corresponding author )

1. Yuan C, Singh P. R, Liu DM, Randhawa S. M, Huerta-Espino J, Lan CX\* (2020) Genome-wide Mapping of Adult Plant Resistance to Leaf Rust and Stripe Rust in CIMMYT Wheat Line ‘Arableu#1’. Plant Disease, 2019, <https://doi.org/10.1094/PDIS-10-19-2198-RE>
2. Li ZK #, Yuan C#, Herrera-Foessel A. S, Randhawa S. M, Huerta-Espino J, Liu DM, Dreisigacker S, Singh P. R, Lan CX\* (2020) Four consistent loci confer adult plant resistance

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- to leaf rust in the durum wheat lines Heller#1 and Dunkler. *Phytopathology*, <https://doi.org/10.1094/PHYTO-09-19-0348-R>
3. Lan CX #\*, Li ZK #, Herrera-Foessel A. S, Huerta-Espino J, Basnet R. B, Dreisigacker S, Ren Y, Lagudah E, Singh P. R\* (2019) Identification and mapping of two adult plant leaf rust resistance genes in durum wheat. *Molecular Breeding*, 39: 118-129.
  4. 赵春杰, 李慧慧, 刘德梅, 兰彩霞\*. 基于GBS、DArT-array和SSR标记构建普通小麦高密度遗传图谱. *华中农业大学学报 (自然科学版)*, 2019, 38 (6) : 56-61. (in Chinese)
  5. Zhang RQ, Singh PR, Lillemo M, He XY, Randhawa SM, Huerta-Espino J, Singh KP, Li ZK, Lan CX\* (2019) Two main stripe rust resistance genes identified in synthetic-derived wheat line Soru#1. *Phytopathology*, 109: 120-126
  6. Kong LN, Song XY, Xiao J, Sun HJ, Dai KL, Lan CX, Singh P, Yuan CX, Zhang SZ, Singh R, Wang HY, Wang X\* (2018) Development and characterization of a complete set of *Triticum aestivum*-*Roegneria ciliaris* disomic addition lines. *Theoretical & Applied Genetics*, 131(8), 1793-1806.
  7. Ponce-Molina LJ, Huerta-Espino J, Singh RP, Basnet BR, Lagudah E, Aguilar-Rincón VH, Alvarado G, Lobato-Ortiz R, García-Zavala J, Lan CX\* (2018) Characterization of adult plant resistance to leaf rust and stripe rust in Indian wheat cultivar New Pusa 876. *Crop Science*, 58(2): 630-638
  8. Ponce-Molina LJ, Huerta-Espino J, Singh RP, Basnet BR, Aguilar-Rincón VH, Alvarado G, Lobato-Ortiz R, García-Zavala JJ, Randhawa MS, Lan CX\* (2018) Characterization of leaf rust and stripe rust resistance in spring wheat ‘Chilero’. *Plant Disease*, 102(2): 421-427
  9. Lan CX, Hale IL, Herrera-Foessel SA, Basnet BR, Randhawa MS, Huerta-Espino J, Dubcovsky J, Singh RP\* (2017) Characterization and mapping of leaf rust and stripe rust resistance loci in hexaploid wheat lines UC1110 and PI610750 under Mexican Environments. *Frontiers in Plant Science*, doi:10.3389/fpls.2017.01450
  10. Juliana P, Singh RP, Singh KP, Crossa J, Huerta-Espino J, Lan CX, Bhavani S, Rutkoski JE, Poland JA, Bergstrom GC, Sorrells ME\* (2017) Genomic and pedigree based prediction for leaf, stem and stripe rust resistance in wheat. *Theoretical and Applied Genetics*, 130: 1415-1430.
  11. Ren Y, Singh RP, Basnet BR, Huerta-Espino J, Lagudah ES, Ponce-Molina LJ, Lan CX\* (2017) Identification and mapping of adult plant resistance loci to leaf rust and stripe rust in common

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wheat Kundan. *Plant Disease*, 101: 456-463

12. Lan CX, Basnet BR, Herrera-Foessel SA, Huerta-Espino J, Ren Y, Calvo-Salazar V, Singh RP\* (2017) Genetic analysis and mapping of adult plant resistance loci to leaf rust in durum wheat cultivar Bairds. *Theoretical and Applied Genetics*, 130: 609-619
13. Ren Y, Hou WX, Lan CX, Basnet BR, Singh RP, Zhu W, Cheng XY, Cui DQ, Chen F\* (2017) QTL analysis and nested association mapping for adult plant resistance to powdery mildew in two bread wheat populations. *Frontiers in Plant Science*, 8: 1212. doi:10.3389/fpls.2017.01212
14. Pretorius ZA\*, Lan CX, Prins R, Knight V, McLaren NW, Singh RP, Bender CM, Kloppers FJ (2017) Application of remote sensing to identify adult plant resistance loci to stripe rust in two bread wheat mapping population. *Precision Agriculture*, 18: 411-428
15. Manickavelu A\*, Joukhadar R, Jigly A, Lan CX, Huerta-Espino J, Stanikzai AS, Kilian A, Singh RP, Ban T (2016) Genome wide association mapping of stripe rust resistance in Afghan wheat landraces. *Plant Science*, 252: 222-229
16. Mondal S\*, Rutkoski JE, Velu G, Singh PK, Crespo-herrera LA, Guzman CG, Bhavani S, Lan CX, He XY and Singh RP (2016) Harnessing diversity in wheat to enhance grain yield, climate resilience, disease and insect pest resistance and nutrition through conventional and modern breeding approaches. *Frontiers in Plant Science*, 7:991. doi:10.3389/fpls.2016.00991
17. Zhang RQ\*, Sun BX, Chen J, Cao AZ, Xing LP, Feng YG, Lan CX, Chen PD (2016) *Pm55*, a developmental-stage and tissue-specific powdery mildew resistance gene introgressed from *Dasypyrum villosum* into common wheat. *Theoretical and Applied Genetics*, 129: 1975-1984
18. Moore JW, Herrera-Foessel S, Lan CX, Schnippenkoetter W, Ayliffe M, Huerta-Espino J, Lillemo M, Viccars L, Milne R, Periyannan S, Kong XY, Spielmeier W, Talbot M, Bariana H, Patrick JW, Dodds P, Singh R, Lagudah E\* (2015) A recently evolved hexose transporter variant confers resistance to multiple pathogens in wheat. *Nature Genetics*, 47: 1494-1498
19. Lan CX, Zhang YL, Herrera-Foessel SA, Basnet BR, Huerta-Espino J, Lagudah ES, Singh RP\* (2015) Identification and characterization of pleiotropic and co-located resistance loci to leaf rust and stripe rust in bread wheat cultivar Sujata. *Theoretical and Applied Genetics*, 128:549-561
20. Calvo-Salazar V, Singh RP, Huerta-Espino J, Cruz-Izquierdo S, Lobato-Ortiz R, Sandoval-Islas S, Vargas-Hernández M, German S, Silva P, Basnet BR, Lan CX\*, Herrera-Foessel SA\* (2015) Genetic analysis of resistance to leaf rust and yellow rust in spring wheat cultivar Kenya

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Kongoni. *Plant Disease*, 99:1153-1160

21. Herrera-Foessel SA\*, Singh RP, Lan CX, Huerta-Espino J, Calvo-Salazar V, Bansal U, Bariana H, Lagudah ES (2015) *Yr60*, a gene conferring moderate resistance to stripe rust in wheat. *Plant Disease*, 99:508-511
22. Singh RP\*, Hodson DP, Jin Y, Lagudah ES, Ayliffe MA, Bhavani S, Rouse MN, Pretorius ZA, Szabo LJ, Huerta-Espino J, Basnet BR, Lan CX, Hovmoller MS (2015) Emergence and spread of new races of wheat stem rust fungus: Continued threat to food security and prospects of genetic control. *Phytopathology*, 105(7):872-884
23. Zhang PP, Zhou HX, Lan CX, Li ZF\*, Liu DQ\* (2015) An AFLP marker linked to the leaf rust resistance gene *LrBi16* and test of allelism with *Lr14a* on chromosome arm 7BL. *The Crop Journal*. 3: 152-256