

Junming Sun

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Contributor: Junming Sun
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Basic Information



Name: Junming Sun
(Feb 1972–)

Birth Unknown
Location:
Title: Professor
Affiliation: Institute of Crop Sciences, CAAS
Honor: Unknown

1. Research Area and Contribution

Dr. Sun obtained his Ph.D. in Biochemistry and Molecular Biology from China Agriculture University, Beijing, China. Currently, Dr. Sun is a Professor at the Institute of Crop Sciences, CAAS. He mainly focuses on seed biochemistry quality analysis and molecular marker assisted selection for soybean breeding on yield, quality, and resistant characters, including protein and oil content, fatty acid, trypsin inhibitor, lipoxygenase, isoflavone, protein subunits, oligosaccharide, vitamin E, vitamin A, folate acid, resistance of *Sclerotinia sclerotiorum* and soybean cyst nematodes characters in soybean. He has published over 80 peered reviewed articles, 6 book chapters, and edited a book. He has released 35 soybean cultivars in China and won a National First Prize of Science and Technology Progress of China in 2012.

1.1. Education

Ph.D.	Biochemistry and Molecular Biology, June 2005
	College of Biology, China Agricultural University, Beijing, China
M.S.	Crop Genetics and Breeding, July 1997
	Graduate School of Chinese Academy of Agricultural Sciences, Beijing, China
B.S.	Fruit Tree, July 1994
	Department of Horticulture, Qing Dao Agricultural University, Shandong, China

1.2. Research Experience

2018-present	Director, Beijing National Soybean Improvement Sub-center, China
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2016- present	Associate Director, Center for Crop Genetics and Breeding, ICS, CAAS
2011-present	Professor, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences, Beijing, China
2001-2010	Associate Professor, Institute of Crop Sciences, Chinese Academy of Agricultural Sciences, Beijing, China
1998-2001	Assistant Professor, Institute of Crop Breeding and Cultivation, Chinese Academy of Agricultural Sciences, Beijing, China
1997-1998	Research Assistant, Institute of Crop Breeding and Cultivation, Chinese Academy of Agricultural Sciences, Beijing, China
July-August, 2005	Visiting Scholar, Department of Crop and Food Science, National Agricultural Research Center for Kyushu Okinawa Region, Kyushu, Japan
2002-2003	Visiting Scholar, Institute of Plant Genetics, Polish Academy of Sciences, Poznan, Poland
Aug-Sept, 1999	Visiting Scholar, Illinois State University at Urbana-Champaign, USA

1.3. Prizes and Awards

2012	The National First Prize of Science and Technology Progress, Chinese Government, China
2010	The First Prize of Science and Technology Progress, Beijing Municipal Government, China
2005	The Second Prize of Science and Technology Progress, Hebei Province Government, China
2019	The Third Prize of Science and Technology Progress, Liaoning Province Government, China
2015	The Third Prize of Science and Technology Progress, Dalian Municipal Government, China
2000	The Third Prize of Science and Technology Progress, Beijing Municipal Government, China
1998	The Prize of Zhuang Qiaosheng Medal, China
2019	The outstanding contribution as a reviewer of Journal of Food Science
2017	The outstanding contribution as a reviewer of Food Chemistry
2012	The outstanding contribution as a reviewer of Journal of Integrative Agriculture

1.4. Released Soybean Varieties

Variety Name	Quality Character and Released Time
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Zhonghuang 106	High yield and high oil content, 2023
Zhonghuang 102	High yield and high isoflavone content, 2021
Zhonghuang 78	High yield and Null lipoxygenase-3 genes, 2018, 2021
Zhonghuang 73	High yield, 2014, 2018, 2020
Zhonghuang 72	High yield and low off-flavor, 2013
Zhonghuang 212	High yield and low off-flavor, 2019
Zhonghuang 211	High yield, 2018
Zhonghuang 209	High yield and low off-flavor, 2019
Zhonghuang 205	High yield, 2022
Zhonghuang 204	High yield, 2018
Zhonghuang 203	High yield and high isoflavone content, 2018
Zhonghuang 68	High yield and high isoflavone content, 2013
Zhonghuang 67	High yield, 2012
Zhonghuang 65	High yield, 2013
Zhonghuang 64	High yield, 2012
Zhonghuang 63	High yield, 2012
Zhonghuang 61	High yield, 2012
Zhonghuang 60	High yield, 2011
Zhonghuang 58	High yield, 2011
Zhonghuang 55	High yield and high protein content, 2010
Zhonghuang 54	High yield, 2012
Zhonghuang 52	High yield, 2010
Zhonghuang 47	High yield, 2009
Zhonghuang 46	High yield, high oil content, null SKTI and lox-2.3, 2009, 2013
Zhonghuang 45	High yield, high oil content, 2009, 2014
Zhonghuang 37	High yield and large seed, 2006, 2007, 2010, 2011
Zhonghuang 35	High yield, high oil content, 2006, 2007, 2009

Zhonghuang 31	Null SKTI and lipoxygenase-2 genes, 2005
Zhonghuang 29	High protein content, 2005
Zhonghuang 28	Null SKTI and lipoxygenase-3 genes, 2004
Zhonghuang 18	Null lipoxygenase 2 genes, 2001
Zhonghuang 16	Null SKTI and lipoxygenase-2.3 genes, high protein content, 2002
Zhonghuang 13	High yield and high protein content, 2001, 2002, 2003, 2011
Zhongdou 28	Null SKTI gene, 2000
Zhongdou 27	High isoflavone content, 2001

1.5. Professional Societies

2018- Present	Director, Beijing National Soybean Improvement Sub-center, China
2018-Present	Director, Soybean Special Association, China Rural Special Technology Association
2010-Present	As a reviewer of professional and international journals, such as Plant Biotechnology Journal, Journal of Experimental Botany, Food Chemistry, Food Research International, Theoretical and Applied Genetics, Industrial Crops and Products, Journal of Agricultural and Food Chemistry, The Crop Journal, Journal of Food Composition and Analysis, BMC Genomics, BMC Plant Biology, Journal of Integrative Agriculture, Heredity, PLoS ONE, Journal of Plant Nutrition and Soil Science, Crop Science, Journal of Food Science, Journal of the Science of Food and Agriculture, Journal of Genetics, and CyTA-Journal of Food etc.

1.6. Selected Publications

(#co-first author, *corresponding author)

1. Agyenim-Boateng KG, Zhang S, Shohag MJ, Shaibu AS, Li J, Li B, **Sun J***. Folate biofortification in soybean: challenges and prospects. *Agronomy*, 2023, 13(1):241. <https://doi.org/10.3390/agronomy13010241>.
2. Agyenim-Boateng G K[#], Zhang S[#], Khattak A N, Shaibu A S, Abdelghany AM, Qi J, Azam M, Ma C, Feng Y, Liu Y, Li J, Li B*, **Sun J***. The nutritional composition of the vegetable soybean (Maodou) and its potential in combating malnutrition. *Frontiers in Nutrition*, 2023, 9:1034115. doi: 10.3389/fnut.2022.1034115.
3. Feng Y[#], Zhang S[#], Li J[#], Pei R, Tian L, Qi J, Azam M, Agyenim-Boateng K G, Abdulwahab S S, Liu Y, Zhu Z, Li B*, **Sun J***. Dual-function C2H2-type Zinc-finger transcription factor GmZFP7 contributes to isoflavone accumulation in soybean. *New Phytologist*, 2022, 18610. DOI: [1111/nph.18610](https://doi.org/10.1111/nph.18610).
4. Gebregziabher B S[#], Zhang S[#], Azam M, Qi J, Agyenim-Boateng K G, Feng Y, Liu Y, Li J, Li B*, **Sun J***. Natural variations and geographical distribution of seed carotenoids and chlorophylls in 1167 Chinese soybean accessions. *Journal of Integrative Agriculture*, 2022, <https://doi.org/10.1016/j.jia.2022.10.011>.
5. Shaibu S A[#], Zhang S[#], Ma J, Feng Y, Huai Y, Qi J, Li J, Abdelghany M A, Azam M, Htway T P H, **Sun J***, Li B*. The GmSNAP11 contributes to resistance to soybean cyst nematode race 4 in *Glycine max*. *Frontiers in Plant Science*, 2022. DOI: 10.3389/fpls.2022.939763.
6. Qi J[#], Zhang S[#], Azam M[#], Shaibu A S, Abdelghany A M, Feng Y, Huai Y, Feng H, Liu Y, Ma C, Gebregziabher B S, Ghosh S, Li J, Li B*, **Sun J***. Profiling seed soluble sugar compositions in 1164 Chinese soybean accessions from major growing ecoregions. *The Crop Journal*, 2022, 2022, 10: 1825-1831. <https://doi.org/10.1016/j.cj.2022.04.015>.
7. Gebregziabher BS[#], Zhang S[#], Ghosh S, Shaibu AS, Azam M, Abdelghany AM, Qi J, Agyenim-Boateng KG, Htway HTP, Feng Y, Ma C, Li Y, Li J, Li B*, Qiu L*, **Sun J***. Origin, maturity group and seed coat color influence carotenoid and

chlorophyll concentrations in soybean seeds. *Plants*, 2022; 11(7):848. <https://doi.org/10.3390/plants11070848>.

8. Agyenim-Boateng G K[#], Zhang S[#], Islam S[#], Gu Y[#], Li B[#], Azam M, Abdelghany AM, Qi J, Ghosh S, Shaibu AS, Gebregziabher B, Feng Y, Li J, Li Y, Zhang C, Qiu L, Liu Z^{*}, Liang Q^{*}, **Sun J^{*}**. Profiling of naturally occurring folates in a diverse soybean germplasm by HPLC-MS/MS. *Food Chemistry*, 2022, 384: 132520. <https://doi.org/10.1016/j.foodchem.2022.132520>.
9. Li J, Luo G, Shaibu AS, Li B, Zhang S, **Sun J^{*}**. Optimal fertilization level for yield, biological and quality traits of soybean under drip irrigation system in the arid region of Northwest China. *Agronomy*, 2022; 12(2):291. <https://doi.org/10.3390/agronomy12020291>.
10. Ghosh S[#], Zhang S[#], Azam M[#], Gebregziabher B S, Abdelghany A M, Shaibu A S, Qi J, Feng Y, Agyenim-Boateng K, Liu Y, Feng H, Li Y, Li J, Li B^{*}, **Sun J^{*}**. Natural variation of seed tocopherol composition in diverse world soybean accessions from maturity group 0 to VI grown in China. *Plants*, 2022, 11, 206. <https://doi.org/10.3390/plants11020206>.
11. Azam M[#], Zhang S[#], Qi J[#], Abdelghany M A[#], Shaibu S A, Ghosh S, Feng Y, Huai Y, Gebregziabher S B, Li J, Li B^{*}, **Sun, J^{*}**. Profiling and associations of seed nutritional characteristics in Chinese and USA soybean cultivars. *Journal of Food Composition and Analysis*, 2021, 98:103803. <https://doi.org/10.1016/j.jfca.2021.103803>
12. Abdelghany A.M[#], Zhang S[#], Azam M, Shaibu AS, Feng Y, Qi J, Li J, Li Y, Tian Y, Hong H, Lamlo SF, Li B^{*}, **Sun J^{*}**. Exploring the phenotypic stability of soybean seed compositions using multi-trait stability index approach. *Agronomy*, 2021, 11, <https://doi.org/10.3390/agronomy11112200>.
13. Ghosh S[#], Zhang S[#], Azam M[#], Qi J, Abdelghany A M, Shaibu A S, Gebregziabher B S, Feng Y, Huai Y, Htway H, Agyenim-Boateng K, Liu Y, Feng H, Li J, Li B^{*}, **Sun J^{*}** Seed tocopherol assessment and geographical distribution of 1151 Chinese soybean accessions from diverse ecoregions. *Journal of Food Composition and Analysis*, 2021, 100:103932. <https://doi.org/10.1016/j.jfca.2021.103932>.
14. Gebregziabher BS[#], Zhang S[#], Qi J, Azam M, Ghosh S, Feng Y, Huai Y, Li J, Li B^{*}, **Sun J^{*}**. Simultaneous determination of carotenoids and chlorophylls by the HPLC-UV-VIS method in soybean seeds. *Agronomy*. 2021; 11(4):758. <https://doi.org/10.3390/agronomy11040758>.
15. Azam M[#], Zhang S[#], Qi J[#], Abdelghany A M[#], Shaibu A S, Ghosh S, Feng Y, Huai Y, Gebregziabher B S, Li J, Li B^{*}, **Sun J^{*}** Profiling and associations of seed nutritional characteristics in Chinese and USA soybean cultivars. *Journal of Food Composition and Analysis*, 2021, 98:103803. <https://doi.org/10.1016/j.jfca.2021.103803>.
16. Shaibu A S, Li B^{*}, Zhang S, **Sun J^{*}**. Soybean cyst nematode resistance: Gene identification and breeding strategies. *The Crop Journal*, 2020, 8(6):892-904. <https://doi.org/10.1016/j.cj.2020.03.001>.
17. Zhang S[#]; Li B[#]; Chen Y; Shaibu A.S; Zheng H; **Sun J^{*}**. Molecular-assisted distinctness and uniformity testing using SLAF-sequencing approach in soybean. *Genes*, 2020, 11(2), 175. [doi:10.3390/genes11020175](https://doi.org/10.3390/genes11020175).
18. Azam M[#], Zhang S[#], Abdelghany M A[#], Shaibu S A, Feng, Y, Li Y, Tian Y, Hong H, Li B^{*}, **Sun J^{*}**. Seed isoflavone profiling of 1168 soybean accessions from major growing ecoregions in China. *Food Research International*, 2020, 2020, 130, 108957. [doi:10.1016/j.foodres.2019.108957](https://doi.org/10.1016/j.foodres.2019.108957).
19. Abdelghany A M[#]; Zhang S[#]; Azam M; Shaibu A S; Feng Y; Qi J; Li Y; Tian Y; Hong H; Li B^{*}; **Sun J^{*}**. Natural variation in fatty acid composition of diverse world soybean germplasms grown in *Agronomy*, 2020, 10, 24. [doi:10.3390/agronomy10010024](https://doi.org/10.3390/agronomy10010024).
20. Abdelghany M A[#], Zhang S[#], Azam M[#], Shaibu S A, Feng, Y, Li Y, Tian Y, Hong H, Li B^{*}, **Sun J^{*}**. Profiling of seed fatty acid composition in 1,025 Chinese soybean accessions from different ecoregions. *The Crop Journal*, 2020, 8(4): 635-644. [doi:10.1016/j.cj.2019.11.002](https://doi.org/10.1016/j.cj.2019.11.002).
21. Pei R, Zhang J, Tian L, Zhang S, Han F, Yan S, Wang L, Li B^{*}, **Sun J^{*}**. Identification of novel QTL associated with soybean isoflavone content. *The Crop Journal*, 2018, 6: 244-252.
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28. **Sun J***, Irzykowski W, Jedryczka M and Han F. Analysis of the genetic structure of *Sclerotinia sclerotiorum* populations from different regions and host plants by random amplified polymorphic DNA markers, **Journal of Integrative Plant Biology**, 2005, 47: 385-

1.7. Patents

1. **Junming Sun**, Shengrui Zhang, Bin Li, Abdelghany A.M, Yitian Liu, Jing Li. A molecular marker, Oil-4-3776551, kit, and method to identify oil content in soybean. Patent number: X, 2022.09, China.
2. **Junming Sun**, Shengrui Zhang, Bin Li, Abdelghany A.M, Yitian Liu, Jing Li. A molecular marker, Oil-11-6708663, kit, and method to identify oil content in soybean. Patent number:2, 2022.06, China.
3. **Junming Sun**, Bin Li, Shengxu Fan, Fenxia Han, Shurong Yan, Lianzheng Wang. A molecular marker of Indel associated with unsaturated fatty acids in soybean. Patent number: ZL201510368770.6, 2018, China.
4. **Junming Sun**, Bin Li, Shengxu Fan, Fenxia Han, Shurong Yan, Lianzheng Wang. A GC method for the determination of fatty acid components in soybean seeds. Patent number: ZL201510369719.7, 2017, China.
5. Anlin Ding and **Junming Sun**. Method of breeding and cultivation of soybean variety with higher or lower isoflavone content. Patent number: ZL98120604.2, 2002, China.

1.8. References

Web of Science ResearcherID : [AAC-7857-2019](#)

ORCID iD : <https://orcid.org/0000-0002-5585-0016>

[Scopus Author ID: 56072822200](#)

Websites & Social Links : [\[1\]](#)

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