

Mithila Jugulam

Professor

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Google Scholar: <https://scholar.google.com/citations?hl=en&user=RxUIdygAAAAJ>

I. Education

Ph.D. Agriculture - University of Guelph, Canada

M.S. Agriculture (Plant Breeding and Genetics)-Tamil Nadu Agricultural University, India

B.S. Agriculture- Andhra Pradesh Agricultural University, India

II. Employment and Professional Experience

July 2020 - Present

Professor

Department of Agronomy, Kansas State University

July 2016 – June 2020

Associate Professor

Department of Agronomy, Kansas State University

October 2011 - June 2016

Assistant Professor

Department of Agronomy, Kansas State University

January 2014 - Present

Adjunct Professor

Department of Agronomy and Horticulture

University of Nebraska, Lincoln, NE

March 2015 - Present

Adjunct Faculty

Department of Bioagricultural Sciences & Pest Management

Colorado State University, Fort Collins, CO

March 2017 - Present

Adjunct Faculty

Department of Biotechnology

Tamil Nadu Agricultural University, Coimbatore, India

Research Activities:

Understand the physiological, biochemical, genetic, and molecular basis of herbicide resistance in weeds; effects of abiotic stresses (e.g. temperature) on herbicide efficacy; and identify sources of herbicide tolerance. Supervise MS and PhD students as well as postdoctoral research associates in Weed Physiology; serve on graduate student advisory committees.

Teaching Activities:

Teaching responsibilities include teaching AGRON 822 (Herbicide Interactions), AGRON 732 (Plant Resistance to Pests), and AGRON 600 (Crop and Weed Resistance to Herbicides). Supervise undergraduate research projects.

2004 - 2011

Post-doctoral Research Associate, University of Guelph, ON, Canada

Research Activities:

Investigated mechanism of resistance to herbicides; studied genetic basis and inheritance of herbicide resistance, developed of herbicide-resistant crops; studied the physiological basis of decreased herbicide efficacy under nutrient stress in plants. Trained and guided graduate students in scientific leadership and research management.

Teaching Activities:

Taught undergraduate courses at Wilfrid Laurier University, Waterloo, Canada
 Taught a short course (Ecotoxicology) at the University of Guelph, Canada
 Assistant coordinator for the 'India Semester at the University of Guelph, Canada

1998-2004 Ph.D. Candidate /Teaching Assistant, University of Guelph, Canada

III. Awards and Honors

2022 Presidential Award of Merit, Western Society of Weed Science
 2021 Outstanding Researcher Award, Weed Science Society of America
 2020 Outstanding Scientist Award- Sigma Xi, the Scientific Research Society, KSU
 2019 Distinguished Achievement Award (Research) - NCWSS
 2019 Fulbright Specialist Award
 2019 Sigma-Xi Honorary Society Member
 2019 Outstanding Research Award-Gamma Sigma Delta (KSU-Chapter)
 2018 KSU-Civic Engagement Fellow (Office of the Provost)
 2018 KSU-Innovation and Economic Engagement Award Finalist
 2017 KSU-College of Agriculture Excellence in Graduate Teaching Award
 2015 Faculty Development Award-K-State
 2014 NSF ADVANCE-Distinguished lecture series award to host as a guest speaker
 2013 Academic Excellence Award-Kansas State University
 2013 NSF ADVANCE-Distinguished lecture series award to host as a guest speaker
 2012 Academic Excellence Award-Kansas State University
 2012 NSF ADVANCE-Distinguished lecture series award to host as a guest speaker
 2012 Gamma Sigma Delta- Honor Society Member
 2005 Cold Spring Harbor Laboratory, NY, USA – Fellowship
 2004-2006 Natural Sciences and Engineering Research Council of Canada (NSERC) - Canada–
 Postdoctoral Fellow
 2004 Graduate Student Award for the IV International Weed Science Congress
 2002 Syngenta Travel Award
 1999-2001 NSERC- Post Graduate Scholarship-B (Canada)
 1999 NSERC- Post Graduate Supplement Award (Canada)
 1999 Ontario Graduate Scholarship (Canada)
 1998 Mrs. Fred Ball Scholarship (University of Guelph, Canada)
 1987-1990 Indian Council of Agricultural Research Fellowship

Keynote/Invited Talks/Presentations and Workshops

1. **Jugulam M.** 2021. Insights into how warming temperatures can reduce herbicide efficacy and pose a challenge for weed control. In symposium on “implications of climate change for weed management in crops” at NCWSS Annual Meeting, Grand Rapids. December, 2021.
2. **Jugulam M.** 2021. Career Orientation talk on “Weed Science- Opportunities in International Agriculture”. For Weed Science Society of Philippines, October 28, 2021.
3. **Jugulam M.** 2021. Application of Genomics and Molecular Cytogenetics to Unravel Herbicide Resistance in Weedy and Invasive Species. 1st International weed genomics conference. Kansas City, September, 24 (**Keynote**).
4. **Jugulam M.** 2020 (virtual). Evolved resistance to herbicides: challenges and opportunities. Invited Seminar - Plant and Environmental Sciences Seminar Series, Clemson University, November 20, 2020.

5. **Jugulam M.** 2020 (virtual). Evolved resistance to glyphosate. In symposium on “Everything you ever wanted to know about glyphosate: A transparent look at the science. Virtual American Chemical Society meeting. AGRO Program, San Francisco, CA, USA.
6. **Jugulam M.** 2020 (virtual). Evolution of weed resistance to herbicides: investigation of knowledge gaps. Sigma Xi -Outstanding K-State Scientist talk, Manhattan, KS, USA.
7. **Jugulam M.** 2020 (virtual). Development of Herbicide-Resistant Crops: Implications for Sustainable Agriculture. For graduate students in the Center for Plant Molecular Biology Department, Tamil Nadu Agricultural University, Coimbatore, India
8. **Jugulam M.** 2020 (virtual). Application of molecular cytogenetics in weed science. For training the next generation of weed scientists. Federal University of Pelotas, Brazil.
9. **Jugulam M.** 2019. Rapid adaptive evolution of herbicide resistance via extrachromosomal DNA amplification. Resistance 2019- Rothamsted Research, UK (September 16-18).
10. **Jugulam M.** 2019. Omics as a tool to elucidate mechanisms of herbicide resistance. In symposium on herbicide-resistant weeds – a global perspective-International Plant Protection Congress. Hyderabad, India (November 10-14).
11. **Jugulam M-** 2019. Novel Mechanisms of Herbicide Resistance in Weeds: Implications for weed management. International conference on plant protection in horticulture: Advances and challenges. Bengaluru, India.
12. **Jugulam M-** 2019. Application of Molecular Cytogenetics in Weed Science. Invited Seminar at Stockbridge School of Agriculture, U of Massachusetts, Amherst, MA (April, 29, 2919).
13. **Jugulam M-** 2019. Novel mechanisms of glyphosate resistance in Amaranthus species and implication. Invited speaker, Symposium- Herbicide resistant weeds in turf, ornamental and nursery crops. WSSA, New Orleans, LA.
14. **Jugulam M.** 2019. Extrachromosomal DNA-mediated herbicide resistance. Plant and Animal Genome Conference- Weedy and Invasive Species workshop, San Diego, CA.
15. **Jugulam M-** 2018. Novel mechanisms of herbicide resistance in weeds: Opportunities for crop improvement. Golden Jubilee meetings of Indian Society of Weed Science, Jabalpur, India.
16. **Jugulam M-** 2018. Herbicide resistance in weeds and crops: Investigation of knowledge gaps in weed science. Departmental Seminar- Plant Pathology, KSU- Manhattan, KS.
17. **Jugulam M.** 2018. Metabolism-based resistance predisposes evolution of cross resistance to herbicides: Palmer amaranth-A classic example. Invited speaker, Symposium- Herbicide metabolism in crops and weeds: A revisit, current understanding and new insights. WSSA, Arlington, VA.
18. **Jugulam M.** 2018. Genome alterations in response to intense glyphosate selection in weedy and invasive species. Plant and Animal Genome Conference- Weedy and Invasive Species workshop, San Diego, CA.
19. **Jugulam M.** 2017. Genetic and molecular mechanisms of herbicide resistance in weeds. Indian Society of Plant Breeders and Center for Plant Breeding and Genetics, Tamil Nadu Agricultural University, Coimbatore, India.
20. **Jugulam M.** 2017. Application of molecular cytogenetics in agriculture. Workshop conducted at Tamil Nadu Agricultural University, Coimbatore, India.
21. **Jugulam M.** 2017. Herbicide-resistant weeds: challenges and opportunities. Department of Crop Physiology, University of Agricultural Sciences, Bangalore, India.

22. **Jugulam M.** 2017. Gene amplification and pesticide resistance. Indian Institute of Horticultural research, Hessaraghatta, Bangalore, India.
23. **Jugulam M.** 2017. DNA markers for herbicide resistance diagnostics. Global Herbicide Resistance Challenge, Denver, CO.
24. **Jugulam M.** 2017. Evolution of resistance to auxinic herbicides: history, spread, and mechanisms of resistance. Global Herbicide Resistance Challenge, Denver, CO.
25. **Jugulam M.** 2017. Auxinic herbicide resistance research: kochia summit. 2017. Global Herbicide Resistance Challenge, Dow AgroSciences Inc., Denver, CO.
26. **Jugulam M,** Koo DH, Peterson DE, Friebe B, and Gill BS. 2016. Physical mapping of *EPSPS* copies on chromosomes of glyphosate-resistant *Amaranthus* species. International Weed Science Congress, Prague, CZ Republic.
27. **Jugulam M.** 2015. Investigating opportunities and addressing challenges to improve options for weed control in sorghum. Sorghum Improvement Conference of North America (SICNA) Annual Meetings, Manhattan, KS.
28. **Jugulam M** and AS. Godar. 2014. Improving options for weed control in sorghum: challenges and opportunities. Center for Sorghum Improvement, KSU, Manhattan, KS.
29. **Jugulam M.** 2012. Physiology and genetics of auxinic herbicide resistance: weeds group. Colorado State University, Ft. Collins, CO.
30. **Jugulam M** and Peterson DE. 2013. Mode of action of herbicides. Western District Directors Meeting, Garden City, KS.
31. **Jugulam M.** 2012. Mechanism of resistance in herbicide-resistant weeds: Agronomy in-depth training for Kansas State Extension Specialists, KSU, Manhattan, KS.
32. **Jugulam M.** 2012. Auxinic herbicides: Mechanism of action and weed resistance: Monsanto Inc., St. Louis, MO.
33. **Mithila J** and Hall JC. 2011. Herbicide Resistance Symposium: Auxinic herbicides- Development of resistance, mechanism of action (Wild mustard-A case study). CWSS, Niagara Falls, Ontario, Canada.
34. Riechers DE, **Mithila J,** Hall JC, and Johnson WG. 2010. Development of resistance to the auxinic herbicides: Historical perspectives, genetics, and mechanisms of weed resistance. NCWSS, Lexington, KY.
35. **Mithila J** and Hall JC. 2008. Identification of markers linked to auxinic herbicide resistance in wild mustard (*Sinapis arvensis* L.). IWSC- International Weed Science Congress, Vancouver, Canada.

Professional Training:

- Selected and participated in James R. Coffman Leadership Institute
- Trained in Advanced Techniques in Plant Molecular Biology at Cold Spring Harbor Laboratory, NY, USA
- Trained in Agricultural Research Management at National Academy of Agricultural Research Management, India

IV. Professional Membership and Service

International level:

- Executive Committee Member, International Weed Genomics Consortium
- Member, Weed Science Society of America (WSSA)
- Member, American Chemical Society (ACS)

- Member, American Association for the Advancement of Science (AAAS)
- Member, Executive Committee of North American Kochia Action Committee
- Member, Weed Genomics Consortium
- Member, Scientific Committee, Global Herbicide Resistance Challenge (GHRC)- 2017
- Member, North American Colleges and Teachers Association (NACTA)
- Chair, Organizing Committee of Symposium “Genomics of Weedy and Invasive Species: 2025 and Beyond”- WSSA annual meeting, 2020
- Chair, WSSA- Subcommittee- Undergraduate Research Awards
- Chair, Physiology Section, WSSA annual meeting-2017
- Member, Organizing Committee of Symposium “Navigating New Landscape Federal Funding for Weed Science Research”- WSSA annual meeting 2017
- Member, WSSA- Herbicide Handbook Committee; Research and Competitive Grants Committee.
- Member, Organizing Committee of symposium “Weed Control in 2050”- WSSA- Annual Meeting 2016
- Chair, Graduate Student Poster Competition- Sorghum Improvement Conference of North America (SICNA)-2016
- Member, Organizing Committee, Graduate Student Scholarship Committee, SICNA-2015, 2016
- Chair, Organizing Committee, Outstanding Graduate Student Award Committee, SICNA, 2016

National level:

- Board Member, Research Chair, and member Western Society of Weed Science (WSWS)
- Member, North Central Weed Science Society (NCWSS)
- Member, NCWSS- Distinguished Achievement Award Committee and Strategic Planning Committee (2013-2017).
- Member, WSWS- Adhoc Committee “Weeds of West-What’s next?”
- Chair, Herbicide Physiology section, NCWSS Annual meeting-2015
- Judge, Oral and poster presentations at WSSA, NCWSS, and WSWS

KSU- University, College of Agriculture and Department of Agronomy:

University:

- Civic Engagement Fellow-Office of the Provost, KSU (2018-2021)
- Moderator- Art of Empathy section of the Art of Democracy Symposium- KSU (2019)
- Member, KSU-Graduate Council
- Member- Committee on Planning of Graduate Council (2018-2021)
- Member, Search Committee, Interim Head, Department of Agronomy (2018)
- Panel Member, KAWSE discussion on “Tips for Navigating the Tenure Process” (2016)
- KAWSE Postdoc Travel Award Screening Committee (2016 - continuing)

College of Agriculture:

- Member- Search Committee. Extension Weed Scientist, Department of Agronomy (2019)
- Member, Search Committee- Weed Scientist (WKARC, Hays) (2017)

Department of Agronomy:

- Chair, Ad-Hoc Committee to develop criteria and procedures for hiring non-tenure track Assistant Professors (2020)
- Member Safety Committee (2018-continuing)
- Member Undergraduate Student Research (2017-continuing)
- Member Graduate Committee (2016 - continuing)
- Member of Ad-Hoc Committee for P and T Document Revision (2016-‘17)
- Mentoring Committee Chair (Dr. Rhodes) and Member (Dr. Patigani), Department of Agronomy, KSU (2016 - continuing)
- Member, Agronomy Department Committee on Planning (DECOP) (2013-2016)
- Member, Search Committee: Administrative Assistant, Department of Agronomy (2016)

- Member, Research Committee for K-State 2025 Planning Process, Department of Agronomy, KSU (2015-1017)
- Member, Search Committee: South Central Field Agronomist, Department of Agronomy (2014)
- Member, Search Committee: Assistant Scientist (Soybean Breeding), Department of Agronomy (2013)

V. Editorial Board/Reviewer of International Journals and External Grant Proposals (reviewed >70 manuscripts)

- Editorial Board, *Frontiers in Agronomy*.
- Editorial Board, *Indian Journal of Weed Science*
- Editorial Advisory Board Member, *Agricultural Science and Technology* (American Chemical Society)
- Editorial Advisory Board Member, *Advances in Weed Science* (Brazilian Weed science Society)
- Associate Editor, *Pest Management Science* (Wiley Group of Publishers)
- Associate Editor, *Weed Science* (Weed Science Society of America)
- Associate Editor, *Frontiers in Agronomy*
- Guest Associate Editor, *Frontiers in Agronomy* (2020-2021)
- Panel member NIFA-AFRI Program, Pests and Beneficial Species in Agricultural Production Systems
- Served as an ad-hoc reviewer for NIFA- Exploratory Grants, USA, and the University Research Fellow's program of the Royal Society London, UK
- International reviewer of grants submitted to Southeast Asia-Europe Joint Funding for Research and Innovation (SEA-EU-NET)
- International reviewer of grants submitted to Agriculture and Agri. Food Canada (AAFC)
- International reviewers for grant applications submitted Department of agricultural and biological/environmental sciences, Czech Science Foundation.
- Reviewer, USDA-SBIR - Plant Production and Protection Biology
- Reviewer, *PNAS*, *Plant Physiology*, *Plant Science*, *PLOS ONE*, *Weed Research*, *Pest Management Science*, *Plant Science*, *Physiologia Plantarum*, *Weed Science*, *Weed Research*, *In vitro Cellular and Development Biology-Plant*, *Crop Science*, *Spanish Journal of Agriculture*

VI. International Instructional Activity

- Conducted 2-week work shop on "Application of Molecular Cytogenetics in Agriculture" at Tamil Nadu Agricultural University (TNAU), Coimbatore, India (July 2017).
 - Student enrollment: Ph.D. (10) and MS (10) with Plant Biotechnology and Plant Breeding

Courses Taught:

VII. Teaching and Graduate Student Advising

AGRON 732, Introduction to Plant Pest Resistance, 2 credits (2012 - continuing)

AGRON 822, Herbicide Interactions, 3 credits (2012 - continuing)

AGRON 600, Crop and Weed Resistance to Herbicides, 2 credits (2016 - continuing)

AGRON 650, Integrated Weed Management, 3 credits (2012 - 2015)

Teaching Evaluation Scores of courses currently taught: Scores in parentheses are out of maximum of 5.0

Crop/weed resistance to herbicides	Teaching Effectiveness	2020 (5.0); 2018 (5.0); 2016 (5.0)
	Amount Learned	2020 (5.0); 2018 (5.0); 2016 (4.7)
Herbicide Interactions	Teaching Effectiveness	2019 (4.0); 2017 (4.3); 2014 (4.8)

	Amount Learned	2019 (4.6); 2017 (4.3); 2014 (4.8)
Plant Resistance to Pests	Teaching Effectiveness	2020 (4.2); 2018 (4.0); 2016 (4.5)
	Amount Learned	2020 (4.6); 2018 (3.8); 2016 (4.4)

Workshops:

1. **Jugulam M.** 2017. DNA markers for herbicide resistance diagnostics. Global Herbicide Resistance Challenge, Denver, CO (Participants: 30 delegates representing, students, faculty and industry scientist)

Student Mentoring and Training:Major Advisor:**Current and Past Research Associate/Visiting Scholars**

Name	Duration	Current Occupation
1. Dr. Yaiphabi Kumam	February 2022-continuing	
2. Dr. Chandrima Shyam	November 2021-continuing	
3. Dr. Aarthy T Selvam	July 2021- continuing	
4. Dr. S. Rajendiran	March 2019-March 2021	RA, Plant Path-KSU,
5. Dr. B. A. Pandian	December 2020-March 2021	Enko Chem Inc., MA
6. Dr. S. Chaudhari	June 2018 – December 2019	Assistant Professor, MSU
7. Dr. A. Vennapusa	Dec 2016 - May 2018	PDF-KSU
8. Dr. Lovreet Shergill	March 2017 - Dec 2017	Montana State University
9. Dr. Aruna Varanasi	June 2014 - Feb 2017	U of Arkansas
10. Dr. Vijaya Varanasi	June 2013 - August 2016	Bayer Crop Sci. MO
11. Dr. Shahniyar Bayramov	June 2015 - January 2016	Fulbright Scholar from Azerbaijan
12. Dr. Amar S Godar	August 2013 - May 2015	Staff Res. Associate UC-Davis
13. Dr. J. Ou	Jan 2014 - August 2014	Scientist, Corteva Inc
14. Dr. S. Mallubhotla	August 2012 - March 2013	Consultant – (IFPRI), Canada

Student Name	Graduation Date	Current Occupation
1. M. Aadari	F 2023	
2. S. Sudhakar (PHD)	S 2025	
3. E. Bargota* (PHD)	S 2022	
4. C. Shyam (PHD)	Graduated F 2021	Postdoctoral Fellow KSU
5. B. A. Pandian*(PHD)	Graduated F 2020	Scientist, Enko Chem, MA
6. I. Barnhart* (MS)	Graduated F 2020	PhD student at KSU
7. I. B. Cuvaca*(PHD)	Graduated S 2019	Postdoctoral Fellow, UNE, Lincoln
8. J. Ou (PHD)	Graduated S 2018	Scientist, Corteva Inc.
9. S. Menzer* (MS)	Graduated S 2017	Self-employed
10. K. Putta* (MS)	Graduated S 2017	Scientist, Enko Chem, Inc., MA
11. S. Nakka (PHD)	Graduated F 2016	Scientist, HPI, Manhattan

12. A. J. Dillon (MS)	Graduated S 2015	Scientist, Bayer Crop Sci. MO
13. R. DeGreeff *(MS)	Graduated S 2015	Area Agronomist, MN
14. K. Niehues (MS)	Graduated S 2014	Scientist, Beck's Hybrids, IN

Current and Past Graduate Students (*co-supervised)

Current and Past Graduate Advisory Committee member

Student Name	Degree	Graduation Date
1. Dani McFadden	PhD (KSU-Hort Sci)	F 2023
2. C. Cruet-Burgos	PhD (KSU-Agron)	2018-2021 (transferred to CSU)
3. T. Kakeshpour	PhD (KSU-Hort Sci)	Completed
4. Parminder S Chahal	PhD (UNL)	Completed
5. Dilooshi Weerasoorya	PhD	Completed
6. Zahoor Ahmad Ganie	PhD (UNL)	Completed
7. David Brachtenbach	MS	Completed
8. Samedha Khakad	MS	Completed
9. Zane Raudenbush	PhD	Completed
10. Amar S Godar	PhD	Completed

Current and Past Undergraduate Research Education (URE) Scholars and Helpers

1. Peyton Thorell (F 2020-continuing)
2. Tracy Oelschlaeger (F 2018 to F2020)
3. Dakota Came (F 2016 to S 2020)- WSSA- 2018 Undergraduate Research Award winner
4. Abbie Friesen (F 2015 to 2018)- WSSA- 2017 Undergraduate Research Award winner
5. Jessica Brahmhall (F 2013 to 2017- WSSA- 2015 Undergraduate Research Award winner
6. Andrew Scherrer (F 2012 to S 2014)- 2014- Outstanding Undergraduate Research Award- Gamma Sigma Delta
7. Trent Newell (F 2011 to S 2013)- WSSA- 2013 Undergraduate Research Award winner

Undergraduate Academic Advisor: 10 students

Impact/Outcome of Research Directed in My Laboratory

Students Name	Degree	Year	Award
1. C. Shyam	PhD	2021	Outstanding Graduate Student Award, NCWSS
2. C. Shyam	PhD	2021	1 st place, oral competition (section 3), WSWS- Boise, ID
3. Borgato	PhD	2021	1 st place, oral competition (section 2), WSWS, Boise, ID
4. C. Shyam	PhD	2021	2 nd place, poster competition, WSSA- San Antonio, TX
5. Borgato	PhD	2021	2 nd place, 3 MT oral competition, WSSA- San Antonio, TX

6.	Borgato	PhD	2020	2 nd place, NCWSS meetings oral competition
7.	Borgato	PhD	2020	2 nd place, NCWSS meetings, poster competition
8.	B. A. Pandian	PhD	2020	2 nd place, SICNA-graduate student oral competition
9.	C. Shyam	PhD	2020	WSSA- Travel Enrichment Award
10.	B. A. Pandian	PhD	2019	1 st place- Poster at NCWSS- Columbus, OH
11.	D. Came	URE	2019	Outstanding Undergraduate Award- GSD
12.	B.A. Pandian	PhD	2018	1 st place- NCWSS, Milwaukee, WI
13.	C. Shyam	PhD	2018	2 nd place- NCWSS, Milwaukee, WI
14.	D. Came	URE	2018	1 st place- NCWSS, Milwaukee, WI
15.	B. A. Pandian	PhD	2018	Selected to present at Kansas Council Graduate Research Summit in Topeka in 2019.
16.	C. Shyam	PhD	2018	Selected to present at Kansas Council Graduate Research Summit in Topeka in 2019.
17.	B. A. Pandian	PhD	2018	USDA-NIFA travel award to attend “Sorghum-21 st Century” conference in South Africa
18.	A. Friesen	URE	2018	1 st place-poster, GSD Undergraduate poster
19.	A. Friesen	URE	2018	1 st place-poster, WSWs, CA
20.	D. Came	URE	2018	Undergraduate Research Award-WSSA
21.	J. Ou	PhD	2017	1 st place-oral, GHRC, Denver, CO
22.	A. Friesen	URE	2017	Undergraduate Research Award- WSSA
23.	J. Ou	PhD	2016	2 nd place-poster, NCWSS
24.	J. Ou	PhD	2016	2 nd place-oral, NCWSS
25.	J. Bramhall	URE	2016	2 nd place-poster, ASA Undergraduate poster
26.	S. Menzer	MS	2016	1 st place-poster, SICNA
27.	J. Bramhall	URE	2016	2 nd place-poster, GSD Undergraduate poster
28.	J. Bramhall	URE	2016	1 st place-poster, WSWs
29.	J. Bramhall	URE	2016	Outstanding Undergraduate Award- GSD
30.	J. Ou	PhD	2016	1 st place-poster, K-State Research Forum
31.	J. Ou	PhD	2016	1 st place-oral, WSWs
32.	K. Putta	MS	2016	2 nd place-oral, K-State Research Forum
33.	S. Nakka	PhD	2016	Extraordinary Student Award
34.	S. Nakka	PhD	2016	Outstanding PhD Research Award-GSD
35.	R. DeGreeff	MS	2015	1 st place in NCWSS Weed Contest (team member)

36.	A. Dillon	MS	2015	Outstanding MS Research Award- GSD
37.	J. Bramhall	URE	2015	Undergraduate Research Award-WSSA
38.	S. Nakka	PhD	2015	One of 6 to receive WSSA Travel Award
39.	L. Leibhart	PhD	2014	1 st place-oral, NCWSS
40.	A. Dillon	MS	2014	1 st place-oral, NCWSS
41.	A. Scherrer	URE	2014	Outstanding Undergraduate Award- GSD
42.	Z. Raudenbush	PhD	2013	1 st place-oral, NCWSS
43.	K. Niehues	MS	2013	1 st place-oral, K-State Research Forum
44.	T. Newell	URE	2013	Undergraduate Research Award- WSSA

VIII. Publications

Note: My family name is Jugulam, and my given name is Mithila. However, some of my publications are listed as given name followed by initial of the family name.

Career Total: Peer Reviewed Journal Papers (82); Book Editor (1); Book Chapters (7); Extension Publications (3); Abstracts (>160);

*Graduate Student or Postdoctoral Assistant of Jugulam.

2021

1. *Barnhart I, Demarco P, Prasad PVV, Mayor L, **Jugulam M** and Ciampitti I. 2021. High-resolution unmanned aircraft systems imagery for stay-green characterization in grain sorghum (*Sorghum bicolor* L.). J of Applied Remote sensing. 15 (4), 044501.
2. *Pandian BA, Sexton-Bowser S, Prasad PVV and **Jugulam M**. 2021. Current status of herbicide-resistant grain sorghum (*Sorghum bicolor*). Pest Manag. Sci. (<https://doi.org/10.1002/ps.6644>)
3. Dhanda S, Kaur S, Chaudhary A, **Jugulam M**, Hunjan MS, Sangha MK and Bhullar MK. 2021. Characterization and management of metsulfuron-resistant Rumex dentatus biotypes in North-West India. Agronomy Journal. <https://doi.org/10.1002/agj2.20849>.
4. Bajwa A, Matzrafi M and **Jugulam M** (2021) Editorial: Biology and Management of Weeds and Invasive Plant Species Under Changing Climatic and Management Regimes. *Front. Agron.* 3:728144. doi: 10.3389/fagro.2021.728144
5. Raudenbush Z, Keeley SJ, Thompson C, and **Jugulam M**. 2021. Dose responses of silvery--thread moss (*Bryum argenteum*) to carfentrazone-ethyl. Weed Tech. doi: 10.1017/wet.2021.42
6. *Shyam C, Nakka S, Putta K, Cuvaca I, Currie RS and **Jugulam M**. 2021. Genetic basis of chlorsulfuron, atrazine and mesotrione resistance in a Palmer amaranth (*Amaranthus palmeri*) from Kansas. ACS Ag. Sci. and Tech. doi: 10.1021/acsagcitech.1c00005
7. **Jugulam M**. 2021. Can non-Mendelian inheritance of eccDNA-mediated EPSPS gene amplification conferring glyphosate resistance provide an opportunity to reverse resistance? Weed Research. 2021;00:1– 6. <https://doi-org.er.lib.k-state.edu/10.1111/wre.12473>
8. *Barnhart I, Chaudhari S, Pandian BA, Prasad PVV, Ciampitti I and **Jugulam M**. 2021. Use of high resolution unmanned aerial systems imagery and machine learning to evaluate grain sorghum tolerance to mesotrione. J of Applied Remote sensing. Vol. 15 (1), 014516. doi.org/10.1117/1.JRS.15.014516.

9. *Pandian BA, Sathishraj R, Prasad PVV and **Jugulam M.** 2021. A single gene inherited trait confers metabolic resistance to chlorsulfuron in grain sorghum (*Sorghum bicolor*). *Planta*. 253:1-12.
10. *Shyam C, Borgato WA, Peterson DE, Dille JA and **Jugulam M.** 2021. Predominance of metabolic resistance in a six-way-resistant Palmer amaranth (*Amaranthus palmeri*) population. *Front. Plant Sci.* 11:614618. doi: 10.3389/fpls.2020.614618.

2020

11. *Pandian BA, Varanasi A, Vennapusa AR, Sathishraj R, Lin G, Zhao M, Tunnell M, Tesso T, Liu S, Prasad PVV and **Jugulam M.** 2020. Characterization, genetic analyses, and identification of QTLs conferring metabolic resistance to a 4-hydroxyphenylpyruvate dioxygenase-inhibitor in sorghum (*Sorghum bicolor*). *Front. Plant Sci.* 11:596581. doi: 10.3389/fpls.2020.596581
12. *Pandian BA, Friesen A, LaForest M, Peterson DE, Prasad PVV and **Jugulam M.** 2020. Confirmation and characterization of the first case of acetolactate synthase (ALS)-inhibitor-resistant wild buckwheat (*Polygonum convolvulus*) in the United States. *Agronomy* 2020, 10(10), 1496. <https://doi.org/10.3390/agronomy10101496>
13. *Ou J, Gains TA, Fritz AK, Stahlman PW and **Jugulam M.** 2020. Dicamba resistance in kochia from Kansas and Nebraska evolved independently. *Pest Manag. Sci.* DOI 10.1002/ps.6097
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Abstracts Since 2012 (Career total >160):Oral Presentations (84)2021

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19. *Borgato EA, Peterson DE, Dille JA, and **Jugulam M**. 2019. Resistance to PPO-inhibiting herbicides in Palmer amaranth: are TSR and NTSR mechanisms coexisting? NCWSS-annual meeting, Columbus, OH (abstract 143).
20. *Barnhart IH, Chaudhari S, Pandian BA, Ciampitti IA and **Jugulam M**. 2019. Assessment of HPPD-inhibitor damage using unmanned aerial vehicles and high-resolution multispectral imagery in grain sorghum (*Sorghum bicolor*). NCWSS-annual meeting, Columbus, OH (abstract 181).
21. **Jugulam M**. 2019. Omics as a tool to elucidate mechanisms of herbicide resistance. In symposium on herbicide-resistant weeds – a global perspective-International Plant Protection Congress. Hyderabad, India (November 10-14).
22. **Jugulam M**. 2019. Rapid adaptive evolution of herbicide resistance via extrachromosomal DNA amplification. Resistance 2019- Rothamsted Research, UK (September 16-18).
23. **Jugulam M**- 2019. Novel Mechanisms of Herbicide Resistance in Weeds: Implications for weed management. International conference on plant protection in horticulture: Advances and challenges. Bengaluru, India.
24. **Jugulam M**, *Ou J, *Chaudhari S and Beckie HJ. 2019. Multiple mechanisms of dicamba resistance in Kochia (*Kochia scoparia*). WSSA- annual meetings, Denver, CO (abstract 95).
25. *Shyam C, *Nakka S, *Putta K, *Cuvaca IB, Currie RS, and **Jugulam M**. 2019. Genetic basis of multiple herbicide resistance in Palmer amaranth (*Amaranthus palmeri*). WSSA- annual meetings, Denver, CO (abstract 110).
26. *Pandian BA, Prasad PVV, Liu S, Tesso T, and **Jugulam M**. 2018. Deciphering the molecular basis of mesotrione tolerance in grain sorghum. NCWSS, Milwaukee, WI (abstract 193). WSSA- annual meetings, Denver, CO (abstract 112).
27. **Jugulam M**, Koo D-H, and Gill BS. 2019. Novel Mechanisms of glyphosate resistance in Amaranthus species and its implication. Invited speaker at the symposium “Herbicide-resistant weeds in turf, ornamental and nursery crops”. WSSA annual meetings, New Orleans, LA.
28. Nandula VN, Montgomery G, *Vennapusa A, **Jugulam M** et al. 2019. Glyphosate-resistant Echinochloa colona from Mississippi and Tennessee: magnitude and resistance mechanisms. WSSA- annual meetings, New Orleans, LA (abstract 414).
29. Figueiredo M, Kuepper A, Giacomini D, **Jugulam M**, Kruger G, Tranel P, Dayan FE, Westra P and Gaines T. 2019. 2,4-D Metabolic Resistance in Waterhemp (*Amaranthus tuberculatus*). WSSA- annual meetings, New Orleans, LA (abstract 268).
30. **Jugulam M**, Koo D-H, Friebe B and Gill BS. 2019. Extrachromosomal DNA-mediated herbicide resistance. Plant and Animal Genome Conference- Weedy and Invasive Species workshop, San Diego, CA.

2018

31. Cuvaca I, Currie RS and **Jugulam M**. 2018. Influence of plant growth stage if dicamba efficacy to control Palmer amaranth. NCWSS- annual meetings, Milwaukee, WI (abstract 130).
32. *Pandian BA, Prasad PVV, Liu S, Tesso T, and **Jugulam M**. 2018. Mapping of genes involved in mesotrione

- tolerance using BSA-Seq in grain sorghum. NCWSS, Milwaukee, WI (abstract 193). (**award winner**).
33. *Shyam C, Nakka S, Putta K, Cuvaca IB, Currie RS, and **Jugulam M**. 2018. Inheritance of multiple herbicide resistance in Palmer amaranth (*Amaranthus palmeri*). NCWSS-annual meetings, Milwaukee, WI (abstract 203). (**award winner**).
 34. Gill BS, Koo D-H, **Jugulam M**, and Friebe B. 2018. Molecular cytogenetic evidence on the Lamarckian inheritance of acquired traits and McClintock genome response to challenge driving rapid adaptive evolution in higher organisms..International Chromosome Conference, Meerut, India.
 35. Gill BS, Koo D-H, **Jugulam M**, and Friebe B. 2018. Dynamic sporophytic genomes, inheritance of acquired soma genetic variation into germ line, and rapid adaptive evolution in higher organisms. National Academy of Korea Annual Meeting, S. Korea.
 36. **Jugulam M**, Nakka S, Vennapusa A, and Thompson C. 2018. Metabolism-based resistance predisposes evolution of cross-resistance to herbicides: Palmer amaranth-A classic example. Invited speaker, Symposium-Herbicide metabolism in crops and weeds: A revisit, current understanding, and new insights. WSSA, Arlington, VA, USA (abstract 238).
 37. Tehranchian, P, Nandula V, **Jugulam M**, and Jasieniuk M. 2018. Multiple resistance to glyphosate, paraquat, ACCase and ALS-inhibitors in California Italian ryegrass: Confirmation, control, and resistance mechanisms. WSSA, Arlington, VA (abstract 355).
 38. **Jugulam M**, Koo DH, Friebe B, and Gill BS. 2018. EPSPS amplification triggers genome alteration and rapid evolution of glyphosate resistance in *Amaranthus tuberculatus*. WSSA, Arlington, VA, USA (abstract 362).
 39. Chahal P, **Jugulam M**, and Jhala A. 2018. Increased absorption of mesotrione when tank-mixed with atrazine contributes to improved control of PSII- and HPPD-inhibitor-resistant Palmer amaranth (*Amaranthus palmeri*). WSSA, Arlington, VA, USA (abstract 160)
 40. **Jugulam M**. 2018. Genome alterations in response to intense glyphosate selection in weedy and invasive species. Invited by Plant and Animal Genome Conference- Weedy and Invasive Species workshop, San Diego, CA (abstract 1056).

2017

41. *Ou J, Pettinga D, Stahlman PW, Westra P, Gaines TA, and **Jugulam M**. 2017. Investigation of mechanisms and genetic basis of dicamba resistance in kochia from Kansas and Colorado. NCWSS, St. Louis, MO (abstract 123).
42. *Shergill L, Bish M, **Jugulam M**, and Bradley K. 2017. Molecular and physiological characterization of multiple herbicide resistance in a Missouri waterhemp population. NCWSS, St. Louis, MO (abstract 130).
43. **Jugulam M**. 2017. Evolution of resistance to auxin herbicides: history, spread and mechanisms of resistance. Global Herbicide Resistance Challenge, Denver, CO.
44. *Ou J, Pettinga D, Stahlman PW, Westra P, Gaines T, and **Jugulam M**. 2017. Distinct mechanisms contribute to dicamba resistance in *Kochia scoparia* from Kansas and Colorado. Global Herbicide Resistance Challenge, Denver, CO.
45. Hall LM, Beckie HJ, Blackshaw RE, Dille JA, Johnson EN, **Jugulam M**, Martin S, Stahlman P, and Thompson C. 2017. *Kochia scoparia*: Biology, gene flow, and management of an herbicide-resistant tumbleweed. Global Herbicide Resistance Challenge, Denver, CO.
46. *Nakka S, Godar AS, Thompson C, Peterson DE, and **Jugulam M**. 2017. Physiological, biochemical and molecular characterization of multiple herbicide resistance in Palmer amaranth (*Amaranthus palmeri*). Global Herbicide Resistance Challenge, Denver, CO.
47. *Ou J, Stahlman PW, Fritz AK, and **Jugulam M**. 2017. Dicamba- and glyphosate-resistant genes are not

linked in kochia (*Kochia scoparia*). WSSA, Tucson, AZ (abstract 150).

2016

48. *Putta K, Koo D, Varanasi VK, Burgos NR, Jasieniuk M, Friebe B, Gill BS, and **Jugulam M**. 2016. Physical mapping of EPSPS gene copies in glyphosate-resistant Italian ryegrass (*Lolium perenne* ssp. Multiflorum). NCWSS, Des Moines, IA (abstract 138).
49. *Ou J, Thompson CR, Stahlman PW, and **Jugulam M**. 2016. Efficacy of PRE and POST applied dicamba on dicamba-resistant kochia. NCWSS, Des Moines, IA (abstract 128).
50. *Menzer S, **Jugulam M**, and Thompson CR. 2016. Temperature effect on the efficacy of POST-herbicides to control Palmer amaranth (*Amaranthus palmeri*) in grain sorghum. NCWSS, Des Moines, IA (abstract 131).
51. *Putta K, Koo D, Varanasi VK, Burgos NR, Jasieniuk M, Friebe B, Gill BS, and **Jugulam M**. 2016. Distribution of EPSPS copies in glyphosate-resistant Italian ryegrass (*Lolium perenne* ssp. Multiflorum). WSSA, San Juan, PR (abstract 435).
52. **Jugulam M**, Koo D, Peterson DE, Friebe B, and Gill BS. 2016. Physical mapping of EPSPS copies in glyphosate-resistant palmer amaranth (*Amaranthus palmeri*). WSSA, San Juan, PR (abstract 436).
53. **Jugulam M**, Liu S, Varanasi VK, and Peterson DE. 2016. Genome sequencing of glyphosate-resistant common waterhemp (*Amaranthus rudis*) to decipher EPSPS gene copy number variation. WSSA, San Juan, PR (abstract 439).
54. **Jugulam M**, Putta K, Koo D, Peterson DE, Friebe B, and Gill BS. 2016. High-Resolution physical mapping of EPSPS copies in glyphosate-resistant Amaranthus species. WSSA, Albuquerque, NM (abstract 117).
55. *Ou J, Thompson CR, Stahlman PW, and **Jugulam M**. 2016. Efficacy of glyphosate and dicamba tank-mixes in Kochia. WSSA, Albuquerque, NM (abstract 135).
56. Ravet K, Quicke A, Bibi S, Westra E, Giacomini D, **Jugulam M**, Dille JA, Stahlman PW, Tranel P, Gaines TA, Westra P, and Pettinga D. 2016. Understanding the genetic evolution of glyphosate resistance in *Kochia scoparia* populations. WSSA, Albuquerque, NM (abstract 153).
57. *Putta K, Koo D, Varanasi VK, Burgos NR, Jasieniuk M, Friebe B, Gill BS, **Jugulam M**. 2016. Distribution of EPSPS copies in glyphosate-resistant Italian ryegrass (*Lolium perenne* ssp. Multiflorum). K-State Research Forum, Manhattan, KS

2015

58. *Varanasi VK, Betha S, Thompson CR, and **Jugulam M**. 2015. Target and non-target site multiple herbicide resistance in Palmer amaranth (*Amaranthus palmeri*) from Kansas. NCWSS, Indianapolis, IN (abstract 192)
59. **Jugulam M**, Koo D, Putta K, Peterson DE, Friebe B, and Gill BS. Distribution of EPSPS copies in metaphase chromosomes of glyphosate-resistant Palmer amaranth (*Amaranthus palmeri*). NCWSS, Indianapolis, IN (abstract 193)
60. Ganie ZA, **Jugulam M**, Varanasi VK, and Jhala A. 2016. Mechanism of glyphosate resistance in common ragweed from Nebraska. WSSA, San Juan, PR (abstract 432)
61. **Jugulam M**. 2015. Molecular cytogenetic mechanism(s) of EPSPS gene amplification in glyphosate-resistant weeds. Mini-symposium on Herbicide resistance, 25th Asia-Pacific Weed Science Society (APWSS) Conference, Hyderabad, India.
62. **Jugulam M**. 2015. Investigating opportunities and addressing challenges to improve options for weed control in sorghum. Annual Sorghum Improvement Conference of North America (SICNA) Meetings, Manhattan, KS.
63. Betha S, Thompson C, Peterson DE, and **Jugulam M**. 2015. Mechanism of atrazine resistance in Palmer

amaranth from Kansas. Annual Sorghum Improvement Conference of North America (SICNA) Meetings, Manhattan, KS.

64. Stahlman PW, Jester J, **Jugulam M**, Peterson DE, Thompson CR, and Currie RS. 2015. Expanding distribution of glyphosate-resistant Palmer amaranth in Kansas. WSWS, Portland, OR (abstract 90).
65. Westra P, Stahlman PW, **Jugulam M**, and Gaines T. 2015. The History and status of herbicide resistance in kochia in North America. WSWS, Portland, OR (abstract 125).
66. **Jugulam M**, Gaines T, and Westra P. 2015. Physiological and molecular characterization of multiple herbicide resistance in kochia. 8th International IPM Symposium. Salt Lake City, UT (abstract 114).
67. *Godar AS, Koo DH, Peterson DE, Gill BS, and **Jugulam M**. 2015. Mapping of EPSPS gene copies on pachytene chromosomes of glyphosate-resistant waterhemp (*Amaranthus rudis*). WSSA, Lexington, KY (abstract 221).
68. Westra P, Gaines TA, and **Jugulam M**. 2015. Background, history, and current status of dicamba resistant kochia in the western US and Canada. WSSA, Lexington, KY (abstract 286).
69. *Betha S, Godar A, Thompson C, Peterson DE, and **Jugulam M**. 2015. Mechanism of atrazine and mesotrione resistance in Palmer amaranth (*Amaranthus palmeri*). WSSA, Lexington, KY (abstract 287).
70. *Dillon A, Danilova T, Peterson DE, Gill BS, and **Jugulam M**. 2015. Configuration of EPSPS gene copies on glyphosate-resistant common waterhemp. WSSA, Lexington, KY (abstract 219).
71. *Godar A, Koo DH, Peterson DE, Gill BS, and **Jugulam M**. 2015. Stability of EPSPS gene copies in glyphosate-resistant Palmer amaranth (*Amaranthus palmeri*). WSSA, Lexington, KY (abstract 220).
72. Ganie ZA, Sandell L, Lindquist J, Kruger GR, **Jugulam M**, Marx DB, and Jhala AJ. 2015. Integrated management of glyphosate-resistant giant ragweed with tillage and herbicides in corn. WSSA, Lexington, KY (abstract 187).

2014

73. *Dillon AJ and **Mithila J**. 2014. Relationship between EPSPS copies and gene expression in glyphosate-resistant waterhemp. NCWSS, Minneapolis, MN (abstract 135). Won **1st place** in the competition.
74. *Betha S, *Godar AS, Thompson C, Peterson DE, and **Mithila J**. 2014. Physiological and molecular characterization of mesotrione resistance in Palmer amaranth (*Amaranthus palmeri*) from Kansas. NCWSS, Minneapolis, MN (abstract 134).
75. Brachtenbach DA, Stahlman PW, and **Mithila J**. 2014. Susceptibility of multiple kochia (*Kochia scoparia*) populations to dicamba. NCWSS, Minneapolis, MN (abstract 182).
76. Leibhart LJ, *Godar AS, **Mithila J**, Reicher ZJ, and Kruger GR. 2014. Mechanism of resistance in 2,4-D-resistant waterhemp. NCWSS, Minneapolis, MN (abstract 128). Won **1st place** in the competition.
77. Ganie ZA, Sandell LD, Lindquist JL, Kruger GR, **Mithila J**, and Jhala AJ. 2014. Integrated management of glyphosate-resistant giant ragweed with tillage and herbicides in soybean. NCWSS, Minneapolis, MN (abstract 108).
78. **Mithila J**, *Niehues K, and Gill BK. 2014. Mechanism of glyphosate resistance in kochia (*Kochia scoparia*). WSSA, Vancouver, Canada, (Abstract 382).
79. *Godar AS, Prasad PVV, *Betha S, *Varanasi VK, Thompson CR, and **Mithila J**. 2014. Physiological basis of reduced mesotrione efficacy under elevated growth temperatures in Palmer amaranth. WSSA, Vancouver, Canada (Abstract 391).

2013

80. *Godar AS, Thompson C, Prasad PVV, and **Mithila J**. 2013. Mesotrione resistance is increased under

elevated growth temperatures in Palmer amaranth. NCWSS, Columbus, OH (Abstract 130).

81. *Godar AS, Stahlman PW, **Mithila J**, and Dille JA. 2013. Kochia population response to glyphosate and EPSPS gene copy number. NCWSS, Columbus, OH (Abstract 134).
82. Raudenbush ZM, Keeley SJ, and **Mithila J**. 2013. Dose response of silvery-thread moss to applications of carfentrazone-ethyl. NCWSS, Columbus, OH. Won **1st place** in the competition.
83. Valentine LJ, **Mithila J**, *Godar AS, Reicher Z, and Kruger GR. 2013. Absorption and translocation of 2, 4-D in resistant and susceptible *Amaranthus tuberculatus*. NCWSS, Columbus, OH, (Abstract 129).
84. Chatham LA, Riggins CW, Martin JR, Kruger GR, Bradley KW, Peterson DE, **Mithila J**, and Tranel PJ. 2013. A multi-state study of the association between glyphosate resistance and EPSPS gene amplification in waterhemp. NCWSS, Columbus, OH (Abstract 127).
85. *Myers K and **Mithila J**. 2013. Inheritance of glyphosate resistance in kochia. Annual K- State Research Forum. Kansas State University, Manhattan. Won **1st place** the competition.
86. **Mithila J**, DeMio N, Walsh M, and Hall JC. 2013. Inheritance and introgression of phenoxy resistance in wild radish (*Raphanus raphanistrum*. L). Global Herbicide Resistance Challenge Conference. Perth, AU.

Poster Presentations (68)

2021

1. *Borgato EA, Rajendran S, Dille JA and **Jugulam M**. 2021. A KASP assay for sex-determination in Palmer amaranth (*Amaranthus palmeri*) and application in weed ecology. NCWSS annual meetings, Grand Rapids, MI (abstract #54)
2. Sudhakar S, Nakka S, Mohammad A and **Jugulam M**. 2021. Increased tolerance of winter wheat to mesotrione and tembotrione. Presented at Grad Forum- Research. K-State.
3. *Borgato EA, Rajendran S, Dille JA and **Jugulam M**. 2021. A KASP assay for sex-determination in Palmer amaranth (*Amaranthus palmeri*) and application in weed ecology. 1st Weed Genomics Conference. Kansas City, MO.
4. *Borgato EA, Dille JA, **Jugulam M**. 2021. Lactofen efficacy as affected by increased temperature on PPO-inhibitor-resistant and -susceptible Palmer amaranth (*Amaranthus palmeri*). WSSS-WAPMS annual meeting (virtual) (abstract 30)
5. *Shyam C, Peterson DE and **Jugulam M**. 2021. Inheritance of 2,4-D resistance in Palmer amaranth population from Kansas. WSSA annual meetings (virtual) (abstract 68) (**award winner**)
6. *Borgato EA, Pandian BA, Rajendran S, Dille JA, **Jugulam M**. 2021. Mechanism of lactofen resistance in Palmer amaranth from Kansas. WSSA annual meeting (virtual) (abstract37).

2020

7. *Borgato EA, Rajendran S, Dille JA and Jugulam M. 2020. Effect of Increased temperature on lactofen efficacy on PPO-inhibitor-resistant and -susceptible Palmer amaranth. NCWSS annual meetings (virtual) (abstract 135) (**award winner**).
8. *Shyam C, Borgato WA, Peterson DE, Dille JA and Jugulam M. 2020. Predominance of metabolic resistance in a six-way-resistant Palmer amaranth (*Amaranthus palmeri*) population. NCWSS annual meetings (virtual) (abstract 136).
9. * Rajendran S, Koo D-H , Preston C and Jugulam M. 2020. Physical mapping of amplified copies of EPSPS gene in glyphosate-resistant Bromus diandrus. NCWSS annual meetings (virtual) (abstract 123).
10. Sterling TM, Dyer WE, Ward S, Igegneri L, Burns EE, Menalled FD, Namuth-Covert D, Jugulam M. 2020. Herbicide physiology online: a multi-institutional course spanning a decade. WSSA- annual meetings,

Maui, HI (abstract 196)

2019

11. *Shyam C, Chahal PS, **Jugulam M**, and A. Jhala. Management of glyphosate-resistant Palmer amaranth (*Amaranthus palmeri*) in 2,4-D Choline/Glufosinate/Glyphosate-Resistant Soybean. NCWSS- annual meetings, Columbus, OH (abstract 44)
12. Pandian BA, Rajendran S, Prasad P.V.V and **M. Jugulam**. 2019. Identification and Characterization of Chlorsulfuron Tolerant Grain Sorghum (*Sorghum bicolor*). NCWSS- annual meetings, Columbus, OH (abstract 7) (**award winner**)
13. *Shyam C, Ou J, Kruger GR and **Jugulam M**. 2017. Rapid metabolism increases resistance to 2,4-D in common waterhemp (*Amaranthus tuberculatus*) under high temperature. WSWS- annual meetings, Denver, CO (abstract 29).
14. *Pandian BA, Liu S, Ranganath VP, P.V.V. Prasad, and **M. Jugulam**. 2019. Deciphering the molecular basis of multiple herbicide resistance in common waterhemp by whole genome sequencing. WSWS- annual meetings, Denver, CO (abstract 28).

2018

15. *Came D, Ou J and Jugulam M. 2018. Response of atrazine-resistant Palmer amaranth (*Amaranthus palmeri*) to PRE-applied atrazine. NCWSS- annual meetings, Milwaukee, WI (abstract 13) (**award winner**).
16. *Friesen A, Peterson DE, and Jugulam M. 2018. Confirmation and characterization of ALS-inhibitor resistance in wild buckwheat. GSD- Undergraduate Research Showcase, KSU-Manhattan. (**award winner**).
17. *Shyam C, Nakka S, Putta K, Cuvaca IB, Currie RS, and Jugulam M. 2018. Genetic basis of multiple herbicide resistance in Palmer amaranth (*Amaranthus palmeri*). KSU-Graduate Research and State conference, Manhattan, KS. (**award winner**).
18. *Pandian BA, Prasad PVV, Liu S, Tesso T, and Jugulam M. 2018. Genetic basis and inheritance of mesotrione tolerance in grain sorghum. KSU- Graduate Research and State conference, Manhattan, KS. (**award winner**).
19. Friesen A, Peterson DE, and **Jugulam M**. 2018. Confirmation and characterization of ALS-inhibitor resistance in wild buckwheat. WSSA, Garden Grove, CA (Abstract 58) (**award winner**).
20. Peterson DE, Stahlman PW, Thompson C, Dille J, **Jugulam M**, Currie R, Barrett M, Schroeder J, and Van Wychen L. 2018. EPA tour of western Kansas. WSSA, Arlington, VA (abstract 174).
21. **Jugulam M**, Varanasi A, Thompson C, and Prasad PVV. 2018. Characterization of HPPD-inhibitor-tolerant sorghum genotypes. 21st Century Sorghum International Conference, Cape Town, SA.
22. Pandian BA, Vennapusa AR, Prasad PVV, Thompson CR, and **Jugulam M**. 2018. Deciphering the genetic and physiological basis of hydroxyphenylpyruvate dioxygenase (HPPD)-inhibitor HPPD inhibitor tolerance in grain sorghum. 21st Century Sorghum International Conference, Cape Town, SA.
23. *Shyam C, Ou J, Kruger GR and Jugulam M. 2017. Rapid metabolism increases resistance to 2,4-D in common waterhemp (*Amaranthus tuberculatus*) under high temperature. Plant Science Symposium “2050 Challenge: The role of agriculture in addressing the global needs. KSU-Manhatsan, KS.

2017

24. *Menzer S, Thompson CR, and **Jugulam M**. 2017. Grain sorghum response to POST pyrasulfotole and bromoxynil previously treated with PRE herbicides containing mesotrione. NCWSS, St. Louis, MO (abstract 63).
25. Friesen A, Peterson DE and **Jugulam M**. 2018. Confirmation and characterization of ALS-inhibitor resistance in wild buckwheat. Gamma Sigma Delta- Undergraduate Poster Session. Manhattan KS (3)
26. Peterson DE, Stahlman P, Thompson CR, Dille JA, **Jugulam M**, Currie RS, Barrett M, Schroeder J, and

- Wychen LV. 2017. 2017 EPA Tour of Western Kansas. NCWSS, St. Louis, MO (abstract 48).
27. Kumar V, Jha P, Stahlman P, **Jugulam M**, Currie RS, Dille JA, Peterson DE, Thompson CR, and Shoup DE. 2017. An Overview of herbicide-resistant weeds in Kansas. NCWSS, St. Louis, MO (abstract 47).
28. *Shyam C, Ou J, Kruger GR, and **Jugulam M**. 2017. Rapid metabolism increases resistance to 2,4-D in common waterhemp (*Amaranthus tuberculatus*) under high temperature. NCWSS, St. Louis, MO (abstract 38).
29. *Cuvaca IB, Currie RS, and **Jugulam M**. 2017. Integration of varying plant populations and dicamba rates for Palmer amaranth control in irrigated corn. NCWSS, St. Louis, MO (abstract 6).
30. *Vennapusa AR, Faleco F, Vieira B, Samuelson S, Kruger GR, Werle R, and **Jugulam M**. 2017. Rapid metabolism contributes to atrazine resistance in common waterhemp from Nebraska. NCWSS, Saint Louis, MO (abstract 38).
31. *Pandian BA, Prasad PVV, Thompson CR, and **Jugulam M**. 2017. Cytochrome P450-mediated metabolism of mesotrione and tembotrione in HPPD-inhibitor-tolerant sorghum. NCWSS, St. Louis, MO (abstract 43).
32. *Ou J, Thompson CR, Stahlman PW and **Jugulam M**. 2016. Antagonistic effect of glyphosate and dicamba tank-mix on Kochia Control. K-State Research Forum, Manhattan, KS. (3) (**award winner**).
33. **Jugulam M**, Koo DH, Nandula VK, Thompson CR, Friebe B, and Gill BS. 2017. GISH and FISH mapping of *EPSPS* copies in interspecific hybrids of *Amaranthus spinosus* and *Amaranthus palmeri*. WSSA, Tucson, AZ (abstract 116).
34. Molin WT, **Jugulam M**, VanGessels MJ Hoagland RE, and McCloskey. 2017. Survey of the genomic landscape surrounding the *EPSPS* gene in glyphosate-resistant *Amaranthus palmeri* from geographically distant locations. WSSA, Tucson, AZ (abstract 114).

2016

35. *Menzer S, Thompson CR, and **Jugulam M**. 2016. Grain sorghum response to Huskie™ following treatment with herbicide mixtures containing mesotrione. NCWSS, Des Moines, IA (abstract 4).
36. *Ou J, Thompson CR, Stahlman PW, and **Jugulam M**. 2016. Antagonistic effect of glyphosate and dicamba tank-mix on Kochia Control. NCWSS, Des Moines, IA (abstract 79).
37. *Cuvaca I, Currie RS, **Jugulam M**, and Foster A. 2016. Palmer Amaranth (*Amaranthus palmeri*) suppression with half rates of dicamba and atrazine with increasing sorghum (*Sorghum bicolor*) density and nitrogen rate. NCWSS, Des Moines, IA (abstract 85).
38. Dille A, **Jugulam M**, and Khadka S. 2016. Environment and hormone effects on seed germination behavior of Kochia. NCWSS, Des Moines, IA (abstract 80).
39. Ganie ZA, **Jugulam M**, and Jhala A. 2016. High Temperature Enhances the Efficacy, Absorption and/or Translocation of 2,4-D or Glyphosate in Giant Ragweed. NCWSS, Des Moines, IA (abstract 66).
40. *Menzer S, Thompson CR, and **Jugulam M**. 2016. Grain sorghum response to Huskie following treatment with herbicide mixture containing mesotrione. Sorghum Improvement Conference of North America (SICNA) Meetings, Manhattan, KS.
41. Ganie ZA, **Jugulam M**, and Jhala A. 2016. Effect of temperature on efficacy of 2,4-D and glyphosate for control of common ragweed. WSSA, San Juan, PR (abstract 62).
42. *Bramhall JA, Varanasi A, Dille JA, Jugulam M. 2016. Impact of Crop Competition on Fitness of Glyphosate-Resistant Kochia (*Kochia scoparia* L. Schrad). Gamma Sigma Delta Undergraduate Poster Competition. Manhattan, KS.
43. *Varanasi A, Thompson CR, Prasad P, and **Jugulam M**. 2016. Identification of HPPD-inhibitor tolerant sorghum genotypes from a diversity panel. WSSA, San Juan, PR (abstract 112).

44. *Betha S, Thompson CR, Peterson DE, and **Jugulam M.** 2016. Increased HPPD gene and protein expression contribute significantly to mesotrione resistance in Palmer amaranth (*Amaranthus palmeri*). WSSA, San Juan, PR (abstract 222).
45. *Bramhall JA, Varanasi A, Dille JA, and **Jugulam M.** 2016. Impact of crop competition on fitness of glyphosate-resistant Kochia (*Kochia scoparia* L. Schrad). WSWS, Albuquerque, NM (abstract 1).
46. *Bramhall JA, **Jugulam M** and Dille JA. 2016. Screening Palmer amaranth (*Ameranthus palmeri*) to confirm resistance to multiple herbicides. Proc. American Society of Agronomy, Annual Meetings. Phoenix, AZ

2015

47. *Betha S, Thompson CR, Peterson DE, **Jugulam M.** 2015. Mechanism(s) of resistance to PS II and ALS inhibitors in mesotrione resistant palmer amaranth. NCWSS, Indianapolis, IN (abstract 57).
48. *Bramhall JA, Varanasi A, Dille JA, and **Jugulam M.** 2015. Impact of crop competition on fitness of glyphosate-resistant Kochia (*Kochia scoparia* L. Schrad). American Society of Agronomy, Annual Meeting.
49. *Ou J, Thompson CR, **Jugulam M**, and Stahlman PW. 2015. Kochia response to pre and post applied dicamba. NCWSS, Indianapolis, IN (abstract 92).
50. *Varanasi A, Thompson C, Prasad PVV, and **Mithila J.** 2015. Identification of sorghum germplasm with HPPD-inhibitor tolerance. Annual Sorghum Improvement Conference of North America (SICNA) Meetings, Manhattan, KS.
51. *Menzer S, Thompson CR, and **Jugulam M.** 2015. Temperature effect on post-herbicide efficacy of Palmer amaranth control in sorghum. Annual Sorghum Improvement Conference of North America (SICNA) Meetings, Manhattan, KS.
52. *Ou J and **Mithila J.** 2015. Effect of elevated temperature on glyphosate and dicamba efficacy in broadleaf weeds. 25th Asia-Pacific Weed Science Society Conference, Hyderabad, India.
53. *Menzer S, Thompson CR, and **Mithila J.** 2015. Evaluation of herbicide efficacy under temperature stress for weed management in sorghum. Annual Sorghum Improvement Conference of North America (SICNA) Meetings, Manhattan, KS.
54. *Ou J, Stahlman PW, and **Jugulam M.** 2015. Uptake, translocation and metabolism of dicamba in dicamba-resistant Kochia from Kansas. WSWS, Portland, OR (abstract 29).
55. *Ou J and **Jugulam M.** 2015. Effect of growth and temperature on dicamba and glyphosate efficacy in Kochia. WSWS, Portland, OR (abstract 30).

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