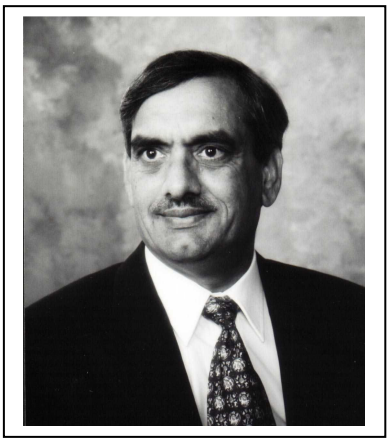
PREM P. JAUHAR, Ph.D.
Research Geneticist/Cereal
USDA/ARS
1307 N 18TH ST
Northern Crop Science Laboratory
State University Station
Fargo, ND 58105-5677
prem.jauhar@ndsu.edu
Phone: (701) 239-1309; Fax: (701) 239-1369

Also: Adjunct Professor,
Department of Plant Sciences,
North Dakota State University



Education

- PhD 1963, Genetics and Plant Breeding, Postgraduate School, Indian Agricultural Research Institute, New Delhi
- MS 1959, Genetics and Plant Breeding, Agra University, India
- BS 1957, Botany, Agra University, India

Professional Experience

- 1991 to present: Research Geneticist, USDA-ARS Fargo, ND
- 1987 - 1991: Research Geneticist, USDA-ARS, Utah State University, Logan, Utah
- 1986 - 1987: Research Geneticist, Dept. of Agronomy and Range Science, University of California, Davis, California
- 1985 - 1986: Research Geneticist, USDA-ARS, Berkeley, California
- 1982 - 1984: Research Geneticist and Research Director, Research and Development Corp., Riverside, California
- 1981: Research Associate, City of Hope National Research Institute, Duarte, California
- 1978 - 1981: Assistant Research Geneticist, University of California, Riverside
- 1976 - 1978: Research Associate, University of Kentucky, Lexington
- 1975 - 1976: Associate Professor of Genetics, Indian Agricultural Research Institute, New Delhi
- 1972 - 1975: Senior Research Scientist, University of Wales, Wales, U.K.
- 1963 - 1972: Assistant Cytogeneticist, and later Associate Professor of Genetics, Indian Agricultural Research Institute, New Delhi

Professional Affiliation

- Crop Science Society of America
- American Genetic Association
- American Society of Agronomy
- Indian Society of Genetics and Plant Breeding
- Tissue Culture Association of America, California Chapter
- Genetics Society of Canada
- Western Society of Crop Science
- Nominated to the New York Academy of Sciences, 1986, 1987
- Sigma Xi

Selected Honors, Awards, and Professional Recognitions Since 1991

- Associate Editor, the ***Journal of Heredity***, an international journal of genetics, 1990 – present.
- Chaired a session at the 17th International Congress of Genetics held in Birmingham, England, August 1993.
- Elected **Fellow** of the Crop Science Society of America, 1995.

  Crop Science Society of America (CSSA) is truly international in scope with members in more than 100 countries. Election to fellowship is the highest honor the society can bestow on its members**;** only up to 0.3% of active members can be elected to the rank of Fellow.
- Invited by the President of Crop Science Society of America to be a member of the CSSA Committee C-456, NCCPB Genetics and Plant Breeding Award for Industry, 1995–1996. Later, invited to be the **Chair** of the committee, 1996.
- Elected **Fellow** of the American Society of Agronomy, 1996.

  Founded in 1907, the American Society of Agronomy is one of the oldest professional societies of agricultural scientists worldwide. Election to fellowship is the highest honor the society can bestow on its members**;** only up to 0.3% of active members can be elected Fellows.
- Invited to serve on the International Advisory Committee for the 13th **International Chromosome Conference** held in Italy, September 8-12, 1998.
- Invited to organize and chair a symposium on ***Biotechnology in Relation to Crop Improvement*** at the meetings of the Crop Science Society of America in Baltimore, Oct. 1998**;** and Salt Lake City, Nov 4, 1999.
- Invited by Dr. Colin McNeil of London, England, to write an encyclopedic article on *Genetics of Crop Improvement: Chromosome Engineering* for the **Encyclopedia of Applied Plant Sciences** published in 2003 by Academic Press, London, U.K.
- By invitation, contributed two chapters (protocols) on producing durum haploids by wide hybridization and by anther culture, both standardized in Jauhar's lab, for the ***Manual on Haploid and Doubled Haploid Production in Crop Plants*** (M. Maluszynski, K.J. Kasha, B.P. Forster, and I. Szarejko, eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, 2003. First of its kind, this manual is being used all over the world.
- Under the **Distinguished Lectureship Series** of the South Dakota Crop Improvement Association, Jauhar was invited to give two lectures to faculty and students of South Dakota State University, Brookings, March 2003.
- Delivered invited lectures in 17 countries over four continents: Asia, Europe, North America, and Australia. When I gave a series of lectures on alien gene transfer in wheat using tools of classical cytogenetics and modern biotechnology at La Trobe Univ., Victoria, Australia**;** Australian National Univ., Canberra**;** CSIRO, Canberra**;** and the Univ. of Sydney Plant Breeding Institute, Sydney, Australia, July 2003, the lectures were taped for use in teaching.
- Elected **Fellow** of the American Association for the Advancement of Science (AAAS), 2003.

  As the world's largest organization, and premier organization, the AAAS is professional home to scientists from all over the world. Each year, the AAAS Council elects members whose **"**efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished.**"**

PREM P. JAUHAR, Ph.D.
Selected Research Accomplishments

Dr. Jauhar is internationally recognized for his contributions in plant cytogenetics and their relevance to plant breeding. His research embraces diverse areas of classical and molecular cytogenetics, plant breeding, and biotechnology. Jauhar is one of the few scientists who has used both classical and modern biotechnological tools for germplasm enhancement of wheat. His innovative research has formed the basis of new theories, which have stimulated research on cytogenetics and phylogeny and their relevance to crop improvement.

The breadth and diversity of Jauhar's research are evidenced by the variety of journals in which he has published, e.g., *Nature, Chromosoma, Theoretical and Applied Genetics, Genome, Plant Breeding, Genetica, Hereditas,* and the *Journal of Heredity*, among others. He has 145 publications, including 103 papers mostly in international journals, 2 Laboratory-Manual articles; 5 books by prestigious publishers, and 23 invited book chapters. Jauhar's versatility is evidenced by the approaches he adopted for solving challenging research problems. In an extensive, recent (January 2008) review, the USDA – ARS Office of Scientific Quality Review (OSQR) panel of seven university scientists called Dr Jauhar "a premier cytogeneticist at the international level." The panel described his work **"spectacular."** Some of Jauhar's accomplishments are briefly outlined below.

- **Genetic Control of Chromosome Pairing:** Dr. Jauhar discovered the regulatory mechanism that controls chromosome pairing in polyploid species of *Festuca* [***Nature*** 254: 595-597 (1975)] and originated the concept of hemizygous-ineffective or haplo-insufficient genetic control of chromosome pairing [***Chromosoma*** 52: 363-382 (1975)], which has since been discovered in other plant groups. This novel regulatory mechanism has major implications in evolution and plant breeding [***Theor. Appl. Genet.*** 49: 287-295 (1977)]. Jauhar has worked extensively on the 5B system in wheat [see the enclosed **Table**] and exploited it for elucidating inter- and intragenomic relationships in durum and bread wheat and for alien gene transfers.
- **Intergenomic Relationships in Wheat.** Devised a unique approach and applied it to study intergenomic relationships by studying the specificity of chromosome pairing in synthetic *Ph1*- and *ph1b*-haploids of bread wheat that Jauhar produced [***Theor. Appl. Genet.*** 82: 283-287 (1991)]. Applying this elegant approach to durum wheat [***Crop Science*** 38: 1080-1087 (1998)], Jauhar assessed both intergenomic and intragenomic relationships [***Jour. Hered.*** 90: 437-445 (1999)]. These studies have contributed to the elucidation of the phylogeny of wheat, the most important cereal crop for humankind.
- **Genetic Transformation of Durum Wheat.** Produced the **world's first** transgenic durum **wheat** and standardized the technique of direct gene transfer into the scutellar cells [***Journal of Heredity*** 88: 475-481 (1997)] after first standardizing the technique of regenerating full plants from single cells [***Plant Science*** 116: 197-203 (1996)], a protocol that is now used in other labs. Standardization of transgenic technology in my lab paved the way for direct introduction of anti-fungal genes into commercial durum cultivars. This technology opens up new avenues of germplasm enhancement of wheat.
- **Production of Haploids in Durum Wheat.** Standardized, for the first time, a method of producing durum haploids on a large scale. The OSQR panel (January 2008) called it a "perfect technique." Also demonstrated that substitution of chromosome 5D for 5B confers on durum wheat higher ability to produce haploids, a discovery that has major implications in basic research in cytogenetics and practical plant breeding.

The method of producing durum haploids by wide hybridization standardized in Jauhar's lab has been incorporated in the ***Manual on Haploid and Double Haploid Production in Crop Plants*** (M. Maluszynski, K.J. Kasha, B.P. Forster, and I. Szarejko, eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands. This manual is being used all over the world.

- **Integration of Alien Chromatin into Durum Wheat.** Successfully transferred a part of a wild grass chromatin into the durum wheat genome and produced some promising material with scab resistance. Using fluorescent GISH (genomic in situ hybridization), Jauhar's team has shown integration of alien chromatin into the wheat genome and produced scab-resistant durum germplasm [Proc. 1998 Fusarium Head Blight Forum, Michigan State Univ., pp. 77-79 (1998); ***Genome*** 42: 570-583 (1999); ***Euphytica*** 118: 127-136 (2001)]. Produced a set of **disomic additions** involving *Lophopyrum elongatum* chromosomes having resistance to FHB resistance. In October 2006, released for the first time a stable, fertile durum disomic addition line with a pair of grass chromosomes. This is an important step toward the production of scab-resistant durum cultivars.

- **Cyclic Translocation in Durum Wheat.** By producing substitution haploids of durum**,** Jauhar's team elucidated the evolutionary cyclic translocation 4A·5A·7B that occurred some 500,000 years ago at the time of origin of tetraploid Emmer wheat [***Genome*** 44: 137-142 (2001)].

- **Sexual Polyploidization via 2n Gamete Formation.** Produced the first clear evidence of sexual polyploidization via 2n gamete formation in durum wheat haploids [***Crop Science*** 40: 1742-1749 (2000)], demonstrating for the first time how polyploids are produced in nature. [Most of our important crop plants are polyploids or secondary polyploids.] Demonstrated in induced polyhaploids the meiotic phenomena that lead to reversion to parental durum and bread wheat, essentially a simulation of the evolutionary steps that occurred at the time of origin of these polyploid wheats. Calling this a "trend setting" paper, Professor E. Jacobsen, the Editor-in-Chief of *Euphytica*, invited Jauhar to write an article for a special issue on **"*The Use of Sexual Polyploidization in Crop Breeding*."**

The above papers are used in graduate teaching and research worldwide. In the U.S., they are used, among others, at Colorado State Univ., Fort Collins**;** Purdue Univ. (although John Axtell, who used them earlier, died recently), Univ. of Wisconsin, Madison; Univ. of Georgia, Athens; University of Minnesota, and North Carolina State Univ., Raleigh. Jauhar has received several honors and recognitions, and chaired international committees. Thus, he chaired a session at the **17th International Congress of Genetics** held in Birmingham, England, August 1993; Chaired the International Service in Agronomy Award Committee in1996.

Jauhar was invited to serve on the **International Advisory Committee** for the XIII International Chromosome Conference held in Italy, September 1998. Invited to organize and chair a symposium on **Biotechnology in Relation to Crop Improvement** at the meetings of the Crop Science Society of America in Baltimore, Oct. 1998. Invited (November 1999) to be a Member of the Editorial Boards of *Annual Review of Plant Biotechnology and Applied Genetics***,** and *Plant Cell, Tissue and Organ Culture*, published by Kluwer Academic Publishers, Dordrecht, The Netherlands. Since 1990, Dr. Jauhar has served as Associate Editor of the *Journal of Heredity*, an international journal of genetics.

Jauhar has been honored with several highly prestigious awards. He was elected a **Fellow** of the Crop Science Society of America in 1995, a **Fellow** of the American Society of Agronomy in 1996, and a **Fellow** of the American Association for the Advancement of Science in 2003.

Comparison of the chromosome-pairing control mechanisms discovered in polyploid species of the family Poaceae

Features	5B-Control	Reference	A-Control	Reference	C-Control	Reference
Species in which chromosome pairing is regulated	Tetraploid and hexaploid **wheats**	Okamoto 1957; Sears and Okamoto 1958; Riley and Chapman 1958	Tetraploid and hexaploid **oat** species of *Avena*	Rajhathy and Thomas 1972	*Festuca arundinacea*, *F. rubra* and other polyploid fescues	Jauhar 1975a, b
Location	5BL	Sears and Okamoto 1958; Riley 1960	A genome?	Jauhar 1975c	C genome?	Jauhar 1975c, 1977
Effectiveness	Hemizygous-effective	Riley and Chapman 1958; Riley 1960	Hemizygous-effective	Nishiyama and Tabata 1964; Rajhathy and Thomas 1972	Hemizygous-ineffective	Jauhar 1975a, b
Dosage effect	+	Feldman 1966, 1968; Martinez et al. 2001	+	Jauhar 1975c; Ladizinsky 1973	+	Jauhar 1975c
Genetically repressible	+	Riley 1960; Dvořák 1972	+	Rajhathy and Thomas 1972, 1974	+	Jauhar 1975b, c, 1977, 2006
Species/genotype suppressing control	*Aegilops speltoides*	Riley et al. 1961	*Avena longiglumis* Accession CW57	Rajhathy and Thomas 1972	Diverse ecotypes of tall fescue	Jauhar 1975c, 1991, 2006

PUBLICATIONS OF PREM P. JAUHAR

A. Books Written

JAUHAR, P. P. 1981. ***Cytogenetics and Breeding of Pearl Millet and Related Species***. Alan R. Liss, Inc., New York. 310 pages. **ISBN**-0-8451-2400-5.

JAUHAR, P. P. 1993. ***Cytogenetics of the Festuca-Lolium Complex: Relevance to Breeding.*** Springer-Verlag, Berlin, Heidelberg, New York, Paris, Tokyo. 260 pages. **ISBN**-3-540-52113-5.

B. Books Edited and Co-authored

JAUHAR, P.P. 1996. ***Methods of Genome Analysis in Plants***. CRC Press, Boca Raton, 408 pages. **ISBN**-0-8493-9437-65.

SINGH, R.J. and JAUHAR, P.P. 2005. ***Germplasm Resources, Chromosome Engineering, and Crop Improvement:*** **Volume 1:** ***Grain Legumes***. CRC Press, Boca Raton, Florida, London, Tokyo. 376 pages. **ISBN**-13: 978-08493-1430-8.

SINGH, R.J. and JAUHAR, P.P. 2006. ***Germplasm Resources, Chromosome Engineering, and Crop Improvement:*** **Volume 2:** ***Cereal Crops***. Taylor and Francis, Boca Raton, Florida. 442 pages. **ISBN**-10: 0- 8493-1432-1.

C. Invited Book Chapters

JAUHAR, P.P. 2007. Genetic enhancement of polyploid crops using tools of classical cytogenetics and modern biotechnology. pp. 41-60. In: ***Breeding Major Food Staples***. Blackwell Publishing, Ames, Iowa, USA.

JAUHAR, P.P. 2006. Cytogenetic architecture of cereal crops and their manipulation to fit human needs: Opportunities and challenges. pp. 1-25. In: ***Genetic Resources, Chromosome Engineering, and Crop Improvement, Volume 2: Cereals.*** (SINGH, R.J. and JAUHAR, P.P., Eds.) CRC Press, Boca Raton, FL, USA.

JAUHAR, P.P, RAI, K.N., OZIAS-AKINS, P., CHEN, Z., and HANNA, W.W. 2006. Genetic improvement of pearl millet for fodder and grain: cytogenetic manipulation and heterosis breeding. pp. 281-307. In: ***Genetic Resources, Chromosome Engineering, and Crop Improvement***, ***Volume 2: Cereals***. (SINGH, R.J. and JAUHAR, P.P., Eds.) CRC Press, Boca Raton, FL, USA.

CEOLONI, C. and JAUHAR, P. P. 2006. Chromosome engineering of the durum wheat genome: Strategies and applications of potential breeding value. pp. 27-59. In: ***Genetic Resources, Chromosome Engineering, and Crop Improvement, Volume 2: Cereals.*** (SINGH, R.J. and JAUHAR, P.P., Eds.) CRC Press, Boca Raton, FL, USA.

LAPITAN, N. and JAUHAR, P. P. 2006. Molecular markers, genomics and genetic engineering in wheat. pp. 99-114. In**:** ***Genetic Resources, Chromosome Engineering, and Crop Improvement, Volume 2: Cereals.*** (SINGH, R.J. and JAUHAR, P.P., Eds.) CRC Press, Boca Raton, FL, USA.

VASAL, S. K., RIERA-LIZARAZU, O., and JAUHAR, P. P. 2006. Genetic enhancement of maize by cytogenetic manipulation, and breeding for yield, stress tolerance, and high protein quality. pp. 159-197. In**:** ***Genetic Resources, Chromosome Engineering, and Crop Improvement***, ***Volume 2: Cereals.*** (SINGH, R.J. and JAUHAR, P.P., Eds.) CRC Press, Boca Raton, FL, USA.

JAUHAR, P. P. 2003. Genetics of crop improvement: Chromosome engineering. pp. 167-179. In: ***Encyclopedia of Applied Plant Sciences.*** Volume One (B. Thomas, D.J. Murphy, and B. Murray, eds.). Academic Press, London.

JAUHAR, P.P. 2003. Haploid and doubled haploid production in durum wheat by wide hybridization. pp. 161-166. In**:** ***Manual on Haploid and Double Haploid Production in Crop Plants.*** (M. Maluszynski, K.J. Kasha, B.P. Forster, and I. Szarejko, eds.). Kluwer Academic Publishers, Dordrecht, Netherlands.

JAUHAR, P. P. 2003. Haploid and doubled haploid production in durum wheat by anther culture. pp. 167-172. In**:** ***Manual on Haploid and Double Haploid Production in Crop Plants.*** (M. Maluszynski, K.J. Kasha, B.P. Forster, and Szarejko, eds.). Kluwer Academic Publishers, Dordrecht, Netherlands.

JAUHAR, P. P., and KHUSH, G. S. 2002. Importance of biotechnology in global food security. pp. 107-128. In**:** ***Food Security and Environment Quality: A Global Perspective.*** (R. Lal, D.O. Hansen, N. Uphoff and S. Slack, eds.). CRC Press, Boca Raton, London, Tokyo.

JAUHAR, P. P., and HANNA, W. W. 1998. Cytogenetics and genetics of pearl millet. pp. 1-26. In: ***Advances in Agronomy*** Vol. 64 (D. L. Sparks, ed.). Academic Press, New York.

JAUHAR, P. P. 1998. Problems in plant genome analysis. pp. 745-759. In: ***Handbook of Genome Analysis*** (N. K. Spurr, B. D. Young, and S. P. Bryant, eds.). Blackwell Scientific Publishers, Oxford, England.

BOMMINENI, V. R., and P. P. JAUHAR. 1997. Wide hybridization and genome relationships in cereals: An assessment of molecular approaches. pp. 81-105. In: ***Maydica, D. B. Walden Commemoration Volume*** (P. A. Peterson, ed.) Vol. 42, Instituto Sperimentale Per La Cerealicoltura, Bergamo, Italy.

BOMMINENI. V. R., and P. P. JAUHAR. 1997. An evaluation of target cells and tissues used in genetic transformation of cereals. pp. 107-120. In: ***Maydica, D. B. Walden Commemoration Volume*** (P. A. Peterson, ed.) Vol. 42, Instituto Sperimentale Per La Cerealicoltura, Bergamo, Italy.

JAUHAR, P.P. 1996. Genome analysis: A prologue. pp. 1-6. In: ***Methods of Genome Analysis in Plants*** (P. P. Jauhar, ed.). CRC Press, Boca Raton, London, Tokyo.

JAUHAR, P. P., and JOPPA, L. R. 1996. Chromosome pairing as a tool in genome analysis: merits and limitations. pp. 9-37. In: ***Methods of Genome Analysis in Plants*** (P. P. Jauhar, ed.). CRC Press, Boca Raton, London, Tokyo.

JAUHAR, P. P. 1991. Recent cytogenetic studies of the *Festuca-Lolium* complex. pp. 325-362. In: ***Chromosome Engineering in Plants: Genetics, Breeding, Evolution.*** Volume 2B (T. Tsuchiya and P. K. Gupta, eds.). Elsevier Science Publishers, Amsterdam, The Netherlands.

JAUHAR, P. P. 1983. Some aspects of cytogenetics of the *Festuca-Lolium* complex. pp. 309-350. In: ***Cytogenetics of Crop Plants*** (M.S. Swaminathan, P. K. Gupta, and U. Sinha, eds.). MacMillan India Limited, New Delhi and London.

JAUHAR, P. P. 1981. Cytogenetics of pearl millet. pp. 407-479. In: ***Advances in Agronomy*** Vol. 34 (N. C. Brady, ed.). Academic Press, New York.

BERG, C. C., WEBSTER, G. T., and JAUHAR, P. P. 1979. Cytogenetics and genetics (Chapter 6). pp. 93-109. In: ***Tall Fescue*** (R. C. Buckner and L. P. Bush, eds.). American Society of Agronomy, Madison, Wisconsin.

JAUHAR, P. P. 1976. Chromosome pairing in some triploid and trispecific hybrids in *Lolium-Festuca* and its phylogenetic implications. pp. 165-177. In: ***Chromosomes Today*** Vol. 5 (P. L. Pearson and K. R. Lewis, eds.). John Wiley and Sons, New York.

D. Refereed Technical Publications and Presentations at National and International Conferences

JAUHAR, P.P., XU, S.S. and BAENZIGER, P.S. 2009. Haploidy in cultivated wheats**:** induction and utility in basic and applied research. Crop Science 49: 737-755.

JAUHAR, P. P., PETERSON, T. S., and XU, S. S. 2009. Cytogenetic and molecular characterization of durum alien disomic addition line with enhanced tolerance to Fusarium head blight. Genome 52: 467-483.

JAUHAR, P.P., CHIBBAR, R. N. and GANESHAN, S. 2009. Engineering value-added traits in cereal crops. Jour. Plant Biochem. Biotechnol. (In press).

JAUHAR, P. P. and PETERSON, T. S. 2009. Chromosome engineering of durum wheat with alien chromatin of diploid wheatgrass. Jour. Crop Improvement 23: (In press).

JAUHAR, P. P. and PETERSON, T. S. 2008. Registration of DGE-1, a durum alien disomic addition line with resistance to Fusarium head blight. J. Plant Registrations 2**:** 167-168.

JAUHAR, P. P. and DOĞRAMACI, M. 2008. Chromosome pairing in durum wheat haploids with and without *ph1b* of bread wheat**.** Euphytica 159: 353-358.

JAUHAR, P. P., RAHMAN, H. and RAO, M.B. 2008. Homoeologous group-5 chromosome effects on the ability of durum wheat and bread wheat to produce haploids. Jour. Crop Improvement 21: 1-11.

JAUHAR, P.P. 2008 Synthesis of an FHB- resistant durum disomic alien addition line with a pair of diploid wheatgrass chromosomes. Cereal Res. Commun. 36 (Suppl. B): 77-82.

JAUHAR, P. P. 2008. Use of biotechnology for incorporating value-added traits in cereal crops. Proceedings International Conference on *"Post-Harvest Technology and Value Addition in Cereals, Pulses and Oilseeds,"* C.S Azad Univ., Kanpur, India, November, 2006. (**Plenary Lecture**)

JAUHAR, P. P. 2007. Meiotic restitution in wheat polyhaploids (amphihaploids): A potent evolutionary force. J. Hered. 98: 188-193.

DOĞRAMACI, M. and JAUHAR, P. P. 2007. Synthesis of trigeneric hybrids of hexaploid wheat with diploid wheatgrasses: Specificity of chromosome pairing. The Nucleus 50: 491-500.

JAUHAR, P. P. 2006. Modern biotechnology as an integral supplement to conventional plant breeding: The prospects and challenges. Crop Sci. 46**:** 1841-1859. (Invited Research and Interpretation paper)

JAUHAR, P. P., and PETERSON, T. S. 2006. Cytological analyses of hybrids and derivatives of hybrids between durum wheat and *Thinopyrum bessarabicum*, using multicolour fluorescent GISH. Plant Breeding 125**:** 19-26.

JAUHAR, P.P. 2006. Spontaneous haploids in durum wheat: Their cytogenetic characterization. Euphytica 148: 341-344.

JAUHAR, P. P., DOĞRAMACI, M. and PETERSON, T. S. 2004. Synthesis and cytological characterization of trigeneric hybrids of durum wheat with and without *Ph1*. Genome 47: 1173-1181. [Appeared as a **cover story** in December issue of *Genome*.]

JAUHAR, P.P., and XU, S.S. 2004. Multidisciplinary approaches to breeding Fusarium head blight resistance into commercial wheat cultivars: Challenges ahead. Proceedings Second International Symposium on Fusarium Head Blight, Orlando, Florida, December 11-15, 2004. pp. 77-81.

SATYAVATHI, V.V., JAUHAR, P.P., and DAHLEEN, L.S. 2004. Optimization of an *Agrobacterium*-mediated transformation system for Durum wheat. Proceedings Second International Symposium on Fusarium Head Blight, Orlando, Florida, December 11-15, 2004. pp. 254-259.

SATYAVATHI, V.V., JAUHAR, P.P., ELIAS, E.M., and RAO, M.B. 2004. Effects of growth regulators on *in vitro* plant regeneration in durum wheat. Crop Sci. 44: 1839-1846.

JAUHAR, P.P. 2003. Formation of 2*n* gametes in durum wheat haploids: Sexual polyploidization. Euphytica 133: 81-94.

SATYAVATHI, V. V. and JAUHAR, P. P. 2003. *In vitro* regeneration of commercial durum cultivars and transformation with antifungal genes. Proc. of the 2003 National Fusarium Head Blight Forum, Minneapolis, December 12-15, 2003. pp. 32-35. (National proceedings)

JAUHAR, P.P. 2001. Problems encountered in transferring scab resistance from wild relatives into durum wheat. Proc. of the 2001 National Fusarium Head Blight Forum, Cincinnati, December 8-10, 2001. pp. 188-191.

JAUHAR, P.P. 2001. Genetic engineering and accelerated plant improvement: Opportunities and challenges. Plant Cell Tiss. Org. Cult. 64: 87-91. (**Invited article**)

JAUHAR**,** P. P.**,** and PETERSON, T. S., 2001. Hybrids between durum wheat and *Thinopyrum junceiforme*: Prospects for breeding for scab resistance. Euphytica 118: 127-136.

REPELLIN, A., BÅGA, M., JAUHAR, P. P., and CHIBBAR, R. N. 2001. Genetic enrichment of cereal crops by alien gene transfer: new challenges. pp. 159-183. In: Plant Cell Tiss. Org. Cult. 64: 159-183.

DOĞRAMACI-ALTUNTEPE, M., PETERSON, T. S., and JAUHAR, P. P. 2001. Anther culture-derived regenerants of durum wheat and their cytological characterization. J. Hered. 92: 56-64.

DOĞRAMACI-ALTUNTEPE, M., and JAUHAR, P. P. 2001. Production of durum wheat substitution haploids from durum × maize crosses and their cytological characterization. Genome 44: 137-142. [Appeared as a **cover story** in *Genome*.]

JAUHAR, P. P., DOĞRAMACI-ALTUNTEPE, M., PETERSON, T. S. and ALMOUSLEM, A. B. 2000. Seedset on synthetic haploids of durum wheat: cytological and molecular investigations. Crop Sci. 40: 1742-1749. [Appeared as a **cover story** in *Crop Science*.]

JAUHAR, P. P., and PETERSON, T. S. 2000. Toward transferring scab resistance from a diploid wild grass, *Lophopyrum elongatum*, into durum wheat. Proc. of the 2000 National Fusarium Head Blight Forum, Cincinnati, December 2000. pp. 201-204.

JAUHAR, P. P., and PETERSON, T. S., 2000. Progress in producing scab-resistant germplasm of durum wheat. Proc. International Symposium on Wheat Improvement for Scab Resistance, Nanjing Agricultural University, Nanjing, China, pp. 77-81.

JAUHAR, P. P., ALMOUSLEM, A. B., PETERSON, T. S, and JOPPA, L.R. 1999. Inter- and intra-genomic chromosome pairing relationships in synthetic haploids of durum wheat. J. Hered. 90: 437-445. [Appeared as a **cover story** in the July – August issue of the *Journal of Heredity*.]

JAUHAR, P.P., and CHIBBAR, R. N. 1999. Chromosome-mediated and direct gene transfers in wheat. Genome 42: 570-583.

JAUHAR, P. P.**,** and PETERSON, T.S. 1998. Wild relatives of wheat as sources of Fusarium head blight resistance. Proc. of the 1998 National Fusarium Head Blight Forum, Michigan State University, East Lansing, pp. 179-181.

ALMOUSLEM, A. B., JAUHAR, P. P., PETERSON, T. S., BOMMINENI, V. R., and RAO, M. B. 1998. Haploid durum wheat production via hybridization with maize. Crop Sci. 38: 1080-1087.

JAUHAR, P. P., and ALMOUSLEM, A. B. 1998. Production and meiotic analyses of intergeneric hybrids between durum wheat and *Thinopyrum* species. Proc. Third International Triticeae Symp. (A. A. Jaradat, ed.), Scientific Publishers Inc., New Hampshire, pp 119-126.

ALMOUSLEM, A. B., and JAUHAR, P. P. 1998. Chromosome pairing in synthetic hybrids between bread wheat and *Thinopyrum* species: Breeding implications. Proc. Third International Triticeae Symp. (A. A. Jaradat, ed.), Scientific Publishers Inc., New Hampshire, pp. 127-133.

BOMMINENI, V. R., JAUHAR, P. P., and PETERSON, T. S. 1997. Transgenic durum wheat by microprojectile bombardment of isolated scutella. J. Hered. 88: 475-481.

BOMMINENI, V. R., JAUHAR, P. P., PETERSON, T. S., CHIBBAR, R. N., and ALMOUSLEM, A. B. 1997. Analysis of hybrids of durum wheat with *Thinopyrum junceiforme* using RAPD markers. Theor. Appl. Genet. 95: 757-763.

JAUHAR, P. P., and PETERSON, T. S. 1996. *Thinopyrum* and *Lophopyrum* as sources of genes for wheat improvement. Cereal Res. Commun. 24: 15-21.

BOMMINENI, V. R., and JAUHAR, P. P. 1996. Regeneration of plantlets through isolated scutellum culture of durum wheat. Plant Science 116: 197-203.

JAUHAR, P. P. 1995. Meiosis and fertility of F_1 hybrids between hexaploid bread wheat and decaploid tall wheatgrass (*Thinopyrum ponticum*). Theor. Appl. Genet. 90: 865-871.

JAUHAR, P.P. 1995. Morphological and cytological characteristics of wheat × barley hybrids. Theor. Appl. Genet. 90: 872-877.

JAUHAR, P. P. 1993. Alien gene transfer and genetic enrichment of bread wheat. pp. 103-119. *In*: ***Biodiversity and Wheat Improvement*** (A.B. Damania, ed.). John Wiley and Sons, Chichester, England. (**Invited paper**)

JAUHAR, P. P. 1993. Intergenomic chromosome pairing relationships in hexaploid wheat. Proc. Intern. Conf. on Biotechnology in Agriculture and Forestry, New Delhi, India, February 1993, pp. 85-87. (**Invited paper**)

JAUHAR, P. P. 1992. Synthesis and cytological characterization of trigeneric hybrids involving durum wheat, *Thinopyrum bessarabicum*, and *Lophopyrum elongatum*. Theor. Appl. Genet. 84: 511-519.

JAUHAR, P. P. 1992. Chromosome pairing in hybrids between hexaploid bread wheat and tetraploid crested wheatgrass (*Agropyron cristatum*). Hereditas 116: 107-109.

JAUHAR, P. P. 1992. High pairing bread wheat x barley hybrids. In: G. Kimber (ed.). Proc. Second Intern. Symp. on *Chromosome Engineering in Plants.* Univ. Missouri, Columbia, August 13-15, 1990, pp. 253-258.

JAUHAR, P. P. 1991. Ernest R. Sears (1910-1991): A scientist, a man, a visionary. J. Hered. 82: 437-441. (**Invited article**)

JAUHAR, P. P. 1991. Homoeologous pairing induced by barley genotypes in hybrids with bread wheat. Proc. Sixth Barley Genetics Symp. Vol. 1. Helsingborg, Sweden. pp. 71-73.

JAUHAR, P. P., RIERA-LIZARAZU, O., DEWEY, W. G., GILL, B. S., CRANE, C. F., and BENNETT, J. H. 1991. Chromosome pairing relationships among the A, B, and D genomes of bread wheat. Theor. Appl. Genet. 82: 441-449.

JAUHAR, P. P. 1991. Hybrid between durum wheat and diploid *Thinopyrum bessarabicum*. Genome 34: 283-287.

JAUHAR, P. P. 1990. Dilemma of genome relationship in the diploid species *Thinopyrum bessarabicum* and *Thinopyrum elongatum* (Triticeae: Poaceae). Genome 33: 944-946.

JAUHAR, P. P. 1990. Multidisciplinary approach to genome analysis in the diploid species, *Thinopyrum bessarabicum* and *Th. elongatum* (*Lophopyrum elongatum*), of the Triticeae. Theor. Appl. Genet. 80: 523-536.

JAUHAR, P. P., and CRANE, C. F. 1990. Meiotic behavior and effects of B chromosomes in tall fescue. J. Hered. 81: 156-159.

McFEE, A. F., JAUHAR, P. P., LOWE, K. W., MacGREGOR, J. T., and WEHR, C. M. 1989. Assays of three carcinogen/non-carcinogen chemical pairs for in vivo induction of chromosome aberrations, sister chromatid exchanges and micronuclei. Environ. Molec. Mutagenesis 14: 207-220.

MARBURGER, J. E., and JAUHAR, P. P. 1989. Agronomic, isozyme, and cytogenetic characteristics of 'Chris' wheat doubled haploids. Plant Breeding 103: 73-80.

JAUHAR, P. P., and CRANE, C. F. 1989. An evaluation of Baum et al.'s assessment of the genomic system of classification in the Triticeae. Amer. J. Bot. 76: 571-576.

JAUHAR, P. P. 1988. A reassessment of genome relationships between *Thinopyrum bessarabicum* and *T. elongatum* of the Triticeae. Genome 30: 903-914.

JAUHAR, P. P. 1988. Meiotic and reproductive stability of *Thinopyrum bessarabicum* × *Th. elongatum* amphidiploids: Their potential as sources of genes for wheat improvement. *Proc. Seventh Intern. Wheat Genet. Symp.* Vol. 1. (T. E. Miller and R. M. D. Koebner, eds.). Institute of Plant Science Research, Cambridge, England, pp. 323-328. (**Invited paper**)

JAUHAR, P. P., HENIKA, P. R., MacGREGOR, J. T., WEHR, C. M., SHELBY, M.D., MURPHY, S. A., and MARGOLIN, B. H. 1988. 1,3-Butadiene: Induction of micronucleated erythrocytes in the peripheral blood of B6C3F_1 mice exposed by inhalation for thirteen weeks. Mutation Research 209: 171-176.

JAUHAR, P. P. 1988. Plant genetics and crop production towards health for all by the year 2000. Proc. of the World Health Organization Symposium on Agrohealth and Agromedicine, Nashville, Tennessee, pp. 20-34. (**Invited paper**)

JAUHAR, P. P. 1983. Cytogenetic studies in relation to breeding superior cultivars of jojoba. pp. 63-67. In: *Jojoba and its Uses*. Proc. V Intern. Conf., Univ. of Arizona, Tucson, October 1982. (**Invited paper**)

JAUHAR, P. P., and STOREY, W. B. 1982. *Ornithogalum virens* (2n = 6): A favorable organism for teaching cytology. J. Hered. 73: 243-244.

JAUHAR, P. P. 1981. Cytological and agro-botanical studies on hermaphrodite plants and their possible use in the genetic improvement of jojoba. pp. 371-376. In: Proc. IV Intern. Conf. Jojoba (M. Puebla, ed.), Hermosillo, Mexico.

JAUHAR, P. P. 1981. The eternal controversy on the Latin name of pearl millet. Indian J. Bot. 4: 1-4.

JAUHAR, P. P., and YERMANOS, D. M. 1981. Agronomic and taxonomic significance of glandular trichomes in jojoba. pp. 367-370. In Proc. IV Intern. Conf. on Jojoba (M. Puebla, ed.), Hermosillo, Mexico.

JAUHAR, P. P. 1978. Primary trisomy in tall fescue. J. Hered. 69: 217-223.

JAUHAR, P. P. 1977. B-chromosomes in relation to forage breeding. Proc. 3rd Congr. of SABRAO (Society for the Advancement of Breeding Researches in Asia and Oceania), Canberra, section 14(b): 34-39.

JAUHAR, P. P. 1977. Genetic regulation of diploid-like chromosome pairing in *Avena*. Theor. Appl. Genet. 49: 287-295.

JAUHAR, P. P., SINGH, U., and ALICE, C. J. 1976. Diploid revertants in the progeny of colchicine-induced tetraploids of pearl millet, *Pennisetum typhoides*. Genét. Ibér. 28: 15-20.

JAUHAR, P. P. 1975. Genetic control of chromosome pairing in polyploid fescues and its breeding implications. Proc. EUCARPIA Conf. on "Polyploidy in Fodder Plants", Zürich-Reckenholz, 1975, pp. 167-170.

JAUHAR, P. P. 1975. Genetic regulation of diploid-like chromosome pairing in the hexaploid species, *Festuca arundinacea* Schreb. and *F. rubra* L. (Gramineae). Chromosoma (Berlin) 52: 363-382.

JAUHAR, P. P. 1975. Genetic control of chromosome pairing in polyploid fescues: its phylogenetic and breeding implications. Rept. Welsh Pl. Breed. Stn. for 1974: 114-127. (**Invited paper**)

JAUHAR, P. P. 1975. Chromosome relationships between *Lolium* and *Festuca* (Gramineae). Chromosoma (Berlin) 52: 103-121.

JAUHAR, P. P. 1975. Genetic control of diploid-like meiosis in hexaploid tall fescue. Nature (London) 254: 595-597.

LEWIS, E. J., and JAUHAR, P. P. 1974. A trispecific hybrid in *Lolium-Festuca*. Zeits. Pflanzenzüchtg. 71: 299-306.

JAUHAR, P. P. 1974. Induction of multiple chromosome interchanges in pearl millet. Theor. Appl. Genet. 44: 58-62.

JAUHAR**,** P. P. 1973. Cytogenetics of the *Lolium–Festuca* complex. Technical Annual Rept. Welsh Plant Breeding Station, University College of Wales, Aberystwyth, Wales, pp. 71-73.

JAUHAR, P. P. 1972. Induced interchange heterozygosity in pearl millet, *Pennisetum typhoides* (Burm.) Stapf et Hubb. Experientia 28: 710.

JAUHAR, P. P., SINGH, U., and ALICE, C. J. 1971. Partial desynapsis in *Pennisetum ramosum* (Hochst.) Schweinf. Cytologia (Tokyo) 36: 698-701.

JAUHAR, P. P., and SINGH, U. 1970. Accessory chromosomes in *Pennisetum orientale* Rich. Genét. Ibér. 22: 53-59.

JAUHAR, P. P., and SINGH, U. 1970. Induced mutations in relation to potato improvement in India. Proc. II Intern. Symp. on Tropical Root and Tuber Crops. Hawaii, USA, Volume I: 119-121.

JAUHAR, P. P., and JOSHI, A. B. 1970. The concept of species and "microspecies". Taxon 19: 77-79.

JAUHAR, P. P. 1970. Haploid meiosis and its bearing on the phylogeny of pearl millet, *Pennisetum typhoides* Stapf et Hubb. Genetica 41: 532-540.

JAUHAR, P. P. 1970. Chromosome behaviour and fertility of the raw and evolved synthetic tetraploids of pearl millet, *Pennisetum typhoides* Stapf et Hubb. Genetica 41: 407-424.

JAUHAR, P. P., and SINGH, U. 1969. Induced mutagenesis as a tool in potato breeding. Proc. Symp. on "Radiations and Radiomimetic Substances in Mutation Breeding". Bhabha Atomic Research Center, Trombay (Bombay), pp. 241-250.

JAUHAR, P. P., and SINGH, U. 1969. Amphidiploidization induced by decapitation in an interspecific hybrid of *Pennisetum*. Curr. Sci. 38: 420-421.

JAUHAR, P. P., and SINGH, U. 1969. Desynapsis and the blockage of meiosis in *Pennisetum orientale* Rich. Theor. Appl. Genet. 39: 315-319.

JAUHAR, P. P., and JOSHI, A. B. 1969. Cytotaxonomic investigations in the *Panicum maximum* complex -- III. Cytological features, chromosome diminution and evolution of the karyotype. Cytologia (Tokyo) 34: 222-233.

JAUHAR, P. P. 1969. Induction of some rare somatic mutations in *Solanum tuberosum* L. by ionizing radiations and radiophosphorus. Eur. Potato J. 12: 8-12.

JAUHAR, P. P. 1969. Morphological and physiological effects of radiations and radioisotopes on potato, *Solanum tuberosum* L. Indian J. Agric. Sci. 39: 88-100.

JAUHAR, P. P. 1969. Partial desynapsis in pearl millet, *Pennisetum typhoides* Stapf et Hubb. Naturwissenschaften 56: 571-572.

JAUHAR, P. P. 1969. Aneuploid alteration of chromosome number in the *Panicum maximum* complex. Indian J. Genet. 29: 342-347.

JAUHAR, P. P., PAHUJA, A. N., SINGH, U., and KUMAR, V. 1968. An accurate method of measuring chromosomes. J. Post-Grad. School, Indian Agric. Res. Inst. 6: 223-224.

JAUHAR, P. P., and JOSHI, A. B. 1968. Accessory chromosomes in a new hexaploid species of *Panicum*. Caryologia 21: 105-110.

JAUHAR, P. P. 1968. Some infraspecific taxa of the *Panicum coloratum* L. complex. J. Bombay Nat. Hist. Soc. 65: 518-522.

JAUHAR, P. P. 1968. Inter- and intra-genomal chromosome pairing in an interspecific hybrid and its bearing on basic chromosome number in *Pennisetum*. Genetica 39: 360-370.

JAUHAR, P. P., and SWAMINATHAN, M. S. 1967. Mutational rectification of specific defects in some potato varieties. Curr. Sci. 36: 340-342.

JAUHAR, P. P., and JOSHI, A. B. 1967. Cytotaxonomic investigations in the *Panicum maximum* Jacq. complex - II. Studies on epidermal pattern. Bull. Bot. Surv. India 9: 59-62.

JAUHAR, P. P. 1967. Studies on epidermal pattern in some species of *Panicum*. J. Indian Bot. Soc. 46: 215-221.

JAUHAR, P. P. 1967. Occurrence of accessory chromosomes in *Panicum maximum*. Curr. Sci. 36: 244-245.

JAUHAR, P. P., and JOSHI, A. B. 1966. Cytological and cytotaxonomical studies in some grasses. Pal Commemoration Volume. Jour. Post-Grad. School, Indian Agric. Res. Inst. 4: 209-219.

JAUHAR, P. P., and JOSHI, A. B. 1966. Cytotaxonomic investigations in the *Panicum maximum* Jacq. complex – I. Morphological studies. Bull. Bot. Surv. India 8: 287-295.

JAUHAR, P. P., and JOSHI, A. B. 1966. Cytological studies in some species of *Panicum*. Cytologia (Tokyo) 31: 153-159.

JAUHAR, P. P., and JOSHI, A. B. 1966. A new species of *Panicum*. Bull. Bot. Surv. India 8: 97-99.

JAUHAR, P. P. 1966. Morphological studies in some species of *Panicum* L. Bull. Bot. Surv. India 8: 183-188.

JAUHAR, P. P. 1965. A new species of the *Panicum coloratum* Linn. complex. J. Bombay Nat. Hist. Soc. 62: 320-322.

JAUHAR, P. P., and SAKSENA, S. S. 1964. Hormone-induced multiple seedlings in pea (*Pisum sativum* L.). Res. Jour. Kanpur Agric. Coll. 25: 53-55.

E. Book Reviews

JAUHAR, P. P. 1999. Book Review on "*In Vitro* Haploid Production in Higher Plants. Volume 2: Applications" edited by Jain, S. M., S. K. Sopory, and R. L. Veilleux (eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, 1996. 440 pp. Crop Sci. 39: 280-281.

JAUHAR, P. P. 1999. Book Review on "*In Vitro* Haploid Production in Higher Plants. Volume 1: Fundamental Aspects and Methods" edited by Jain, S. M., S. K. Sopory, and R. L. Veilleux (eds.), Kluwer Academic Publishers, Dordrecht, The Netherlands, 1996. 356 pp. J. Hered. 90: 330-331.

JAUHAR, P. P. 1997. Book Review on "Cytogenetics" by Gupta, P. K. Rastogi and Company, Meerut, India, 1995. Genetics Society of Canada Bulletin 28: 13-14.

JAUHAR, P. P. 1993. Book Review on "Genome Analysis Vol. 1: Genetic and Physical Mapping" by Davies, K. E. and Tilghman, S. M. (eds.). Cold Spring Harbor Laboratory Press, New York, 1990. Theor. Appl. Genet. 86: 795.

JAUHAR, P. P. 1993. Book Review on "Cell to Cell Signals in Plants and Animals" by Neuhoff, V. and Friend, J. (eds.). Springer-Verlag, Berlin, Heidelberg, New York, London, 1991. Theor. Appl. Genet. 86: 796.

JAUHAR, P. P. 1992. Book Review on "Eukaryotic Chromosomes: Structural and Functional Aspects" by Sobti, R. C. and Obe, G. (eds.). Springer-Verlag, Berlin, Heidelberg, New York, London, 1991. Theor. Appl. Genet. 84: 508.

F. Popular Articles

With a view to popularizing science among the general masses, Jauhar has written several articles. Some are listed below:

JAUHAR, P.P. 2007. New durum wheat line resists scab disease. USDA – ARS News Service, Electronic Newsletter, March 20, 2007.

JAUHAR, P.P. 2006. Feeding the impoverished through biotechnological approaches. *Science in Action***:** a newsletter for practicing professionals. Crop Science Society of America, Madison, Wisconsin.

JAUHAR, P.P. and SATYAVATHI, V.V. 2005. Efficient in vitro regeneration will more effectively facilitate genetic transformation of durum wheat. *Science in Action***:** a newsletter for practicing professionals. Crop Science Society of America, Madison, Wisconsin.

JAUHAR, P.P. 1999. USDA-ARS research team in Fargo identifies scab resistance in wild grasses. North Dakota State University Extension Service Bulletin, October 14, 1999.

JAUHAR, P. P., Y. R. AHUJA, U. SINGH, and M. G. JOSHI. 1970. A new method of making projection slides. Science Reporter 7: 133-134.

JAUHAR, P. P. 1969. Science and the future of man. World Science News 6: 45-47.

JAUHAR, P. P. 1969. Biology: things to come. The Hindustan Times, Aug. 4, 1969, p. 3.

JAUHAR, P. P. 1958. Role of photosynthesis in the biological world. Kanpur Agric. College Res. Jour. 27: 25-29.

G. Abstracts of Papers Presented at National and International Conferences

JAUHAR, P.P. 2009. Study of chromosomes: Its vital importance in agriculture, biology, and medicine. Keynote Lecture at the National Symposium on Chromosomes, Centre for Advanced Study in Cell and Chromosome Research, Calcutta Univ., Dec 2008.

JAUHAR, P.P. 2006. Use of cytogenetics biotechnology for incorporating value-added traits in cereal crops. International Conference on ***"Post-Harvest Technology and Value Addition in Cereals, Pulses and Oilseeds,"*** C.S. Azad University, Kanpur, India, Nov 27-30, 2006. (Plenary Lecture)

TOBIAS, D.J., L.S. DAHLEEN, M. MANOHARAN, and P.P. JAUHAR Greenhouse FHB reaction of durum wheat expressing *Tri101* and a rice *tlp*. Proc. of the 2006 National Fusarium Head Blight Forum, Minneapolis, December 2006. (Abstract of Poster)

JAUHAR, P.P. 2005. Classical cytogenetics and modern biotechnology: an alliance for crop improvement – Keynote presentation at the Symposium on Classical Cytogenetics and Modern Biotechnology. Centre for Advanced Study in Cell and Chromosome Research, Calcutta Univ., India, Jan 24-25, 2005. (Keynote Lecture)

JAUHAR, P.P., and XU, S.S. 2004. Breeding Fusarium head blight resistance into wheat cultivars: Can we win the race? Proc. 2nd International Symposium on Fusarium Head Blight, Forum, Orlando FL, December 2004.

SATYAVATHI, V.V., JAUHAR, P.P., and DAHLEEN, L.S. 2004. Optimization of an *Agrobacterium*-mediated transformation system for durum wheat. Proc. 2nd International Symposium on Fusarium Head Blight, Forum, Orlando FL, December 2004.

JAUHAR, P.P. 2004. Modern biotechnology as an integral supplement to conventional plant breeding: the prospects and challenges. Agronomy Abstracts, Crop Science Society of America meetings, Seattle, Oct. 30-Nov. 4, 2004. (Invited symposium paper)

SATYAVATHI, V. V. and JAUHAR, P. P. 2004. Transformation of a commercial durum cultivar Maier with antifungal genes. International Plant & Animal Genome XII Conference, San Diego, California. January 2004, p. 96.

SATYAVATHI, V. V. and JAUHAR, P. P. 2003. *In vitro* regeneration protocol for commercial durum cultivars: Genetic transformation for scab resistance. 2003 National Fusarium Head Blight Forum, Minneapolis, December 12-15, 2003. (Poster presentation)

JAUHAR, P. P. 2003. Chromosome engineering for scab resistance in durum wheat. XIX International Congress of Genetics, Melbourne, Australia, July 2003. p. 156-157.

SATYAVATHI, V. V. and JAUHAR, P. P. 2003. Effects of growth regulators on callus induction and somatic embryo formation from scutellum cultures of durum wheat. *In Vitro* Biology Congress, Portland, Oregon. June 2003. In Vitro 39: 48-A.

JAUHAR, P. P. 2002. Transferring FHB resistance from wild relatives into durum wheat**:** Prospects and problems. Workshop on Fusarium Head Blight Resistance in Wheat. University of Minnesota, St. Paul, MN, September 12-13, 2002.

JAUHAR, P. P**.** and PETERSON, T. S. 2002. Alien addition lines of durum wheat: Prospects for breeding for scab resistance. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin. November 2002.

JAUHAR, P. P., PETERSON, T. S., and BERGH, L. S. 2001. Technique for rapid identification of plants heterozygous for the *ph1* deletion in wheat. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin. October 2001.

JAUHAR, P. P**.** and PETERSON, T. S. 2000. Transferring scab resistance from a diploid wild grass into durum wheat. Proc. 2000 National Fusarium Head Blight Forum, Cincinnati, December 10-12, 2000.

JAUHAR, P. P**.** and PETERSON, T. S. 2000. Wide hybrids of durum wheat and their resistance to scab. Dakota Growers Annual Meeting, Devil's Lake, North Dakota, January 15, 2000. (Poster presentation)

JAUHAR, P. P**.** and PETERSON, T. S. 1999. Alien gene transfer into durum wheat: Cytological and molecular characterization of scab-resistant hybrid derivatives. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 83 (**Invited paper**)

DOĞRAMACI-ALTUNTEPE, M., PETERSON, T. S., and JAUHAR, P. P. 1999. Cytological and fluorescent *in situ* hybridization (FISH) studies on anther culture-derived haploid and aneuploids of durum wheat. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 83

JAUHAR, P.P., DOĞRAMACI-ALTUNTEPE, M., Peterson, T.S., and Almouslem, A.B. 1999. Cytological and molecular investigations on the causes of seedset on synthetic haploids of durum wheat. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 83.

JAUHAR, P.P. and PETERSON, T.S. 1999. Progress in producing scab-resistant durum wheat germplasm. Proc. of the 1999 National Head Blight (Scab) Forum, Sioux Falls, South Dakota, December 5-7, 1999.

JAUHAR, P. P. 1998. Conventional plant breeding: Interface with modern biotechnology. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 73. (**Invited paper**)

JAUHAR, P. P. 1998. Biotechnology and transgenic plants: socio-economic and ethical concerns. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 82. (**Invited paper**)

JAUHAR, P. P. and PETERSON T.S. 1998. Hybrids between durum wheat and wheatgrasses: Prospects for breeding for *Fusarium* head blight resistance. XVIII International Congress of Genetics, Beijing, China. p. 8P: 47.

RAJENDRAN, R. S., PANIGRAHI, S., DAHLEEN, L. S. and JAUHAR, P. P**.** 1998. Pattern recognition techniques for chromosome recognition by color computer vision. The 1998 ASAE Annual International Meeting, Orlando, Florida, July 12-16, 1998.

JAUHAR, P. P. 1997. Genetic improvement of wheat utilizing chromosome-mediated and direct gene transfer. Annual Meetings Genetics Society of Canada. University of Western Ontario, London., June 16-20, 1997. Genetics Society of Canada Bulletin 28(2), p. 41. (**Invited paper**)

JAUHAR, P. P., BOMMINENI, V. R., PETERSON, T. S. and ALMOUSLEM, A. B 1997. Fertile hybrid derivatives between durum wheat and *Thinopyrum junceiforme*. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 84.

JAUHAR, P. P. and ALMOUSLEM, A. B. 1997. Production and meiotic analysis of some intergeneric hybrids between durum wheat and *Thinopyrum* species. Third International Triticeae Symp., ICARDA, Syria, May 1997. Summary Proceedings, p. 5.

ALMOUSLEM, A. B., JAUHAR, P. P., BOMMINENI, V. R., and PETERSON, T. S. 1997. Chromosome pairing in some synthetic hybrids between bread wheat and *Thinopyrum* species: Breeding implications. Third International Triticeae Symp., ICARDA, Syria, May 1997. Summary Proceedings, p. 6.

JAUHAR., P. P. 1996. Biotechnology and durum wheat improvement. FAO Workshop on Biotechnology, November 1996, New Delhi, India. (**Invited paper**)

JAUHAR, P. P., BOMMINENI, V. R., PETERSON, T. S., and ALMOUSLEM, A. B. 1996. Alien gene transfer into durum wheat by utilizing classical and biotechnological tools. Second International Crop Science Congress, November 17-24, 1996, New Delhi, p. 94.

JAUHAR, P. P., BOMMINENI, V. R., PETERSON, T. S., and CHIBBAR, R. N. 1996. Evidence of *Thinopyrum junceiforme* DNA fragments in the modified durum wheat genome utilizing RAPD and RFLP. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, pp.168-169.

ALMOUSLEM, A. B., JAUHAR, P. P., PETERSON, T. S., BOMMINENI, V. R., and JOPPA, L. R. 1996. Durum wheat haploids with and without *Ph1*: chromosome pairing relationships between A and B genomes. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 90.

BOMMINENI, V. R., JAUHAR, P. P., and PETERSON, T. S. 1996. Analysis of transgenic durum wheat in T_0, T_1, and T_2 generations. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 169.

BOMMINENI, V. R., JAUHAR, P. P., and PETERSON, T. S. 1996. Genetic transformation of durum wheat: Expression of transgenes in T_0 and T_1 generations. Plant Genome IV, p. 94.

JAUHAR, P. P. 1995. Classical cytogenetics: An endangered "species." Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 84.

BOMMINENI, V. R., PETERSON, T.S., CHIBBAR, R. N., and JAUHAR, P. P. 1995. Intergeneric hybrids of durum wheat: genomic polymorphism by RAPD. Conference on Value-added Cereals through Biotechnology. National Research Council of Canada, Saskatoon, Canada, p 41.

BOMMINENI, V. R., and JAUHAR, P. P. 1995. *In vitro* culture of durum wheat and expression of *gus* in bombarded scutellar cultures by biolistic device. Plant Genome III, p. 49.

JAUHAR, P. P. 1994. Chromosome pairing in wheat x wheatgrass hybrids with and without *Ph1*. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 131.

JAUHAR, P. P. 1993. Contributions of *Thinopyrum* and *Lophopyrum* to wheat improvement. Eighth Intern. Wheat Genet. Symp., Beijing, China.

JAUHAR, P.P. 1993. Chromosome pairing in wheat x barley hybrids: Breeding implications. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 91.

JAUHAR, P.P. 1993. Chromosome pairing as a tool in genome analysis. 17th International Congress of Genetics, Birmingham, England, August 1993, p.136.

JAUHAR, P.P. 1993 (Chairperson). International workshop on "Methods of genome analysis in plants: Their merits and pitfalls." XVII International Congress of Genetics, Birmingham, England, August 1993, p.104.

JAUHAR, P. P. 1992. Intergeneric hybrids between wheat and *Lophopyrum*: Breeding implications. Proc. 11th International Chromosome Conference, Edinburgh, Scotland, August 1992, p. 48.

JAUHAR, P. P. 1992. Production and meiotic analysis of polyhaploids of hexaploid bread wheat. Agronomy Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 100-101.

JAUHAR, P. P. 1991. Meiosis and seed fertility of hybrids between hexaploid bread wheat and decaploid tall wheatgrass (*Thinopyrum ponticum*). Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 100.

JAUHAR, P. P. 1991. Chromosome pairing in intergeneric hybrids between bread wheat and tetraploid crested wheatgrass. In: Seberg, O. (ed.) Intern. Symp. on the Triticeae, Helsingborg, Sweden.

JAUHAR, P. P. 1990. Genetic enrichment of wheat. New ARS Cereal Scientists Workshop, Pocatello, Idaho, May 22-24, 1990.

JAUHAR, P. P. 1990. Intergeneric hybrid between *ph1c ph1c* mutant of durum wheat and *Thinopyrum nodosum*. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 94.

JAUHAR, P. P., and BICKFORD, I. W. 1989. Chromosome pairing in trispecific hybrids between durum wheat and *Thinopyrum*: its breeding implications. Agron. Abstracts, American Society Agronomy, Madison, Wisconsin, p. 87.

JAUHAR, P. P., and BICKFORD, I. W. 1989. Trispecific hybrids between tetraploid wheat and *Thinopyrum*. 19th Stadler Genetics Symp., Univ. of Missouri, Columbia, March 1989.

JAUHAR, P. P. 1988. Meiotic and reproductive stability of *Thinopyrum bessarabicum* x *T. elongatum* amphidiploids: Their potential as sources of genes for wheat improvement. Seventh Intern. Wheat Genet. Symp., Cambridge, England, July 1988.

MARBURGER, J. E., JAUHAR, P. P., and HASHIM, Z. N. 1988. Agronomic, electrophoretic, and cytogenetic characteristics of doubled haploids of wheat, *Triticum aestivum* cv. Chris. Second Intern. Symposium on Genetic Manipulation in Crops, CIMMYT, Mexico, August 1988.

JAUHAR, P. P. 1987. Plant genetics and crop production. World Health Organization Symp., Nashville, Tennessee, December 1987.

JAUHAR, P. P. 1983. Morphological, anatomical, physiological, and cytological features of adaptive value to jojoba. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 67.

JAUHAR, P. P. 1983. Micropropagation of jojoba cultivars. 34th Annual Meeting of the Tissue Culture Association, Orlando, Florida, June 1983. *In Vitro* 19: 249.

JAUHAR, P. P. 1982. Cytogenetic studies in relation to breeding superior cultivars of jojoba. V Intern. Jojoba Conf., Tucson, Arizona, October 1982.

JAUHAR, P. P. 1980. B chromosomes in tall fescue. Genetics 94 (Suppl.): 49.

YERMANOS, D. M., and JAUHAR, P. P. 1980. Hermaphroditic tendency in jojoba. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 74.

JAUHAR, P. P., and YERMANOS, D. M. 1980. Glandular trichomes in jojoba. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 84.

JAUHAR, P. P., and YERMANOS, D. M. 1980. Agronomic and taxonomic significance of glandular trichomes in jojoba. IV Intern. Jojoba Conf., Hermosillo, Sonora, Mexico, November 1980.

JAUHAR, P. P., and YERMANOS, D. M. 1980. Cytogenetic studies on jojoba. IV Intern. Jojoba Conf., Hermosillo, Sonora, Mexico, November 1980.

JAUHAR, P. P., and YERMANOS, D. M. 1979. Cytological studies on jojoba, *Simmondsia chinensis* (Link) Schneider. Joint meetings of the Genetics Soc. of America and Canadian Soc. of Genetics and Cytology, Edmonton, Canada, August 1979. Genetics 91: 53.

JAUHAR, P. P. 1979. Synthesis and meiotic studies of triploids of meadow fescue. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, pp. 64-65.

JAUHAR, P. P. 1978. Cytogenetics of chromosome pairing in the *Festuca-Lolium* complex. Proc. XIV Intern. Congress of Genetics, Moscow, USSR, Part I, p. 295.

JAUHAR, P. P., BUCKNER, R. C., BUSH, L. P., THACKER, E. M., and BURRUS, P. B. 1978. Chromosome pairing in interspecific hybrids and amphiploids between tall fescue and giant fescue. Proc. XIV Intern. Congress of Genetics, Moscow, USSR, Part II, p. 168.

JAUHAR, P. P., BUCKNER, R. C., BUSH, L. P., THACKER, E. M., and BURRUS, P. B. II. 1978. Synthesis and meiotic stability of low-perloline derivatives produced by intergeneric hybridization between ryegrass and tall fescue. Proc. 47th Annual Meetings, Genetics Society of America, Columbia, South Carolina, June 1978. Genetics 88: 47-48.

JAUHAR, P. P., BUCKNER, R. C., and BUSH, L. P. 1977. Chromosomal status and meiotic stability of Kenhy–an intergeneric hybrid derivative. Agron. Abstracts, American Society of Agronomy, Madison, Wisconsin, p. 59.

JAUHAR, P. P. 1975. Polyploidy, genetic control of chromosome pairing and evolution in the *Festuca-Lolium* complex. Proc. 178th Meeting of British Genetical Society, John Innes Institute, Norwich, England, April 1975. Heredity 35: 430.

JAUHAR, P. P. 1975. Genetic control of chromosome pairing in polyploid fescues and its breeding implications. EUCARPIA Conference on "Polyploidy in Fodder Crops", Zurich, Switzerland, April 1975.

JAUHAR, P. P. 1974. Grass cytogenetics. Annual Rept. of the Welsh Plant Breeding Station, Univ. College of Wales, Aberystwyth, Wales. p. 70. (Technical Report)

JAUHAR, P. P. 1974. Chromosome pairing in triploid and trispecific hybrids in *Lolium-Festuca*. V Intern. Chromosome Conference, Leiden, Holland, July 1974.

JAUHAR, P. P. 1973. Inter- and intra-genomic chromosome relationships in a *Pennisetum* hybrid. Proc. XIII Intern. Congress of Genetics, Berkeley, California, August 1973. Genetics 74: 126-127.

Older abstracts not listed