

VITA

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WORK ADDRESS

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PERSONNEL DATA

Date of Birth/Nationality	December 5, 1949/Finnish
Marital status:	Married, two children
Biographical sketch:	Who's who in the World, 13th edition, December, 1995 Who's who in Science & Engineering, 4th edition (1997)

EDUCATION/RESEARCH EXPERIENCE

January 1993-current	Docent Plant Biotechnology, University of Helsinki; Abo Academy University; and Jyvaskyla University, Finland
May, 1999-2005	Plant Breeder/Geneticist (P4 level), International Atomic Energy Agency, Vienna, Austria
June-August, 1997	Senior STS fellow, Japan Science & Tech. Corp, Tsukuba, Japan
December 1994-May'95	CNR/RAISA Visiting Professor, Universita Degli della Tuscia, Viterbo, Italy
July 1990-January'93	Research Scientist, University of Helsinki, Finland
December 1988-89	Chief Biotechnologist and Head-in Charge, Botany Department, Tocklai Experimental Station, Jorhat India; Advisor, Agriculture Biotechnology, Assam Science Tech & Environ, CSIR, Assam, India
January 1987- November 1988	Research Associate, Forest Science, Texas A & M University, College Stn, Texas, USA
October-December' 86	Senior Research Fellow, State Biotechnology Lab., VTT, Finland
July 1984-October'85	Visiting Scientist, Calgene Inc, Davis, CA, USA

July 1984-October'86	Research Scientist, Kemira Oy, Espoo, Finland
January 1983-June'84	Postdoc ARCO, Plant Cell Research Institute, Dublin, CA, USA
Feb. 1982- Jan 1983	Postdoc, Dept. Horticulture, Purdue University, W. Lafayette, IN, USA
September-October'80	Visiting Scientist, University of Kiel, Botany Institute, Kiel, Germany
Dec 1979- Jan., 1982	DAAD Postdoc, Plant Genetics, Weizman Inst. Sci., Rehovot, Israel
1978-1979	Research Associate, Council of Scientific & Industrial Research, India
1973-1978 Ph.D. Ph.D. Thesis	Jawaharlal Nehru University, New Delhi, India In vitro Production of Haploids in Higher Plants
1972-1973, M. Phil Dissertation	Jawaharlal Nehru University, New Delhi, India Effect of light on isoperoxidases in maize
1970-1972, M.Sc. (Ag) M. Sc. thesis	G.B. Pant Univ. Agric. & Genetics Tech., Pantnagar, Nainital, India Biochemical genetic studies of high yielding varieties of wheat
1966-1970, B.Sc. (Ag) Hons	Haryana Agricultural University, Hissar, Haryana, India

HONORS AND AWARDS

1966-69	University merit scholarship holder
1973-1978	Junior and senior research fellowship, Council of Scientific & Industrial Research, India
July-August 1978	Fellowship, International course on "Pest and Vector Management Systems", ICIPE/UNEP, Nairobi, Kenya
August 1981	David Falkner Fellowship, Weizmann Institute of Science, Israel

INVITED LECTURES PRESENTED

1. Invited speaker on agricultural biotechnology in an International Conference on Seed Science and technology, New Delhi, India, February, 1990
2. Invited speaker on tea biotechnology, BIOTEK INDIA-90, New Delhi, India, December, 1990
3. Invited speaker on "Plant biotechnology for sustainable agriculture under fragile environmental conditions" in an International conference on sustainable crop production in fragile environments, Haryana Agricultural University, Hissar, India, November 25-28, 1996.
4. Invited to participate in a FAO workshop on role of biotechnology in developing countries, New Delhi, India, November 14-16, 1996.
5. Invited to participate in a Workshop on Management of agricultural drought, organized by Global grain legumes drought research network (GGLDRN), New Delhi, India, November 23, 1996.
6. Invited speaker on "Recent advances in somatic embryogenesis", International Foundation for Science Workshop on Recent Advances in Biotechnology for Trees Conservation and Management, Florianopolis, SC- Brazil, September 15-19, 1997.
7. Invited speaker on "Somaclonal variation and mutagenesis in crop improvement", in Second Plant Biotechnology Workshop, Hanoi, Vietnam, December 15-19, 1997.
8. Invited speaker on "Recent advances in somatic embryogenesis in forest trees", IUFRO (Research Group 2.04.07) International symposium on Micropropagation and spread of superior genetic material of forest trees, New Delhi, India, April 10-13, 1998.
9. Invited speaker on "an overview on somatic embryogenesis in forest trees", 7th Annual International Conference of BIO-REFOR, Challenges for Biotechnology in the next millennium, Manila, Philippines, November, 1998.

10. Invited speaker on Micropropagation for mass-scale reforestation of forests, Workshop on Plant Biotechnology, Paris, France, March 15, 1999.
11. Invited speaker on Mechanisms of spontaneous and induced mutations in plants, in 10th International Congress on Radiation Research, Dublin, Ireland, July, 1999.
12. Keynote invited speaker on Genetic stability and variability in Third International Symposium the series of recent Advances in Plant Biotechnology from cell to crops, Slovak Republic, Sept 4-10, 1999.
13. Invited speaker on applications of biotechnology in forestry, For-99, Spain, Sept., 1999
14. Invited speaker for a Plant Molecular Biology course, Hanoi, Vietnam National University, December 5-8, 1999.
15. Invited speaker on Induced mutations in crop plants, Third Plant Biotechnology Workshop, Hanoi, Vietnam, July, 2000.
16. Invited speaker on Induced mutations in fruits, International conference on tropical and subtropical fruits, Cairns, Australia, November- December, 2000.
17. Invited speaker on Shaping up ornamental plants for commercialization, MINT Flora-2001, Malaysian Institute of Nuclear Technology, Malaysia, November 2001.
18. Keynote speaker on Feeding the world- mutations and genetic engineering. International Nuclear Conference, 2002, Kuala Lumpur, Malaysia, 15-18 October 2002.
19. Invited speaker, Morocco, 2005, date palm
20. Invited speaker, Palermo, 2005, doubled haploid
21. Invited speaker, Slovakia, 2005-08-18 tissue culture and mutations
22. Invitation to participate COST Meeting, Copenhagen, 2005.
23. Invited speaker, International date palm conference, Abu Dhabi, 19-22 February 2006.
24. Invited speaker, COST Meeting, Doubled haploids, Vienna, Austria, February 2006.
25. Invited speaker, San Remo, Italy EUCARPIA, mutation breeding ornamental plants, September 2006.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

1. International Association of Plant Tissue Culture
2. International Horticulture Association
3. International Plant Molecular Biology Association

ACTED AS A REFEREE

Review manuscripts for J. Forest Research (Japan), HortScience (USA), Plant Cell Tissue & Organ Culture, Plant Cell Reports, Pakistan J. Sci. & Industrial Res., Propagation of ornamental plants, In Vitro-Plant, Annals of Botany, Tree Physiology, TAG, and Euphytica submitted for the publication, and also referee for 5 Ph.D. thesis from India and pre- examiner of Ph.D. thesis, University of Helsinki, Finland.

CHAIRPERSON OF SCIENTIFIC SESSIONS

1. Chairperson of a session- Biotic stress: viral and fungal disease resistance- in Third International Symposium In Vitro Culture and Horticultural Breeding, Jerusalem, Israel, June 16-21, 1996.
2. Chairperson of a session Bioremediation and tissue culture- In 2nd Vietnam Plant Biotechnology workshop, Hanoi, Vietnam, December 15-19, 1997.
3. Member of International organizing committee of IUFRO (Research Group 2.04-07), International Symposium on Micropropagation and spread of superior genetic material of forest trees, New Delhi, India, April 10-13, 1998.
4. Member of the Scientific Committee, 4th International symposium on In Vitro culture and horticultural breeding, Tampere, Finland, July 2-7, 2000.
5. Chairperson of a session on Commercialization of plant tissue culture, In Vitro culture and horticultural breeding, Tampere, Finland, July 2-7, 2000.
6. Chairperson, International date palm conference, Abu Dhabi, 19-22 February 2006

CONSULTANCY

1. Author's contract with Enzo Forest Development, Imatra, Finland, July- August, 1996 for a book chapter contribution on Biotechnology of Industrially Important Tree Species in Developing Countries, K. Watanabe and E. Pehu (eds.), Academic Press, USA.
2. Scientific advisor, International Foundation of Science, Stockholm, Sweden
3. Consultant, Estonian Science Foundation, Tallin, Estonia
4. Member of Selection panel of INCO-DEV programme of European Union, Brussels, Belgium, October, 2000, 2001, 2003, 2004, 2005
5. By invitation, participated in the consultant meeting on Biotechnology and Rural Livelihood-Enhancing the benefits, organised by ISNAR's biotechnology service, The Hague, The Netherlands, June 25-28, 2001.
6. Consultant, National Research Foundation, Pretoria, South Africa
7. Invitation by the University of Guelph, Guelph, Canada to consultancy on induced mutations in medicinal plants and international collaboration, May 17-23 2002
8. Invitation by European Union (EU) to participate in a consultant meeting on biotechnology, Kuala Lumpur, Malaysia, June 22-24 2002.
9. Invitation by the University of Guelph, Guelph, Canada to consultancy on induced mutations in medicinal plants and international collaboration, June 2004
10. Consultant, 5th FAO/IAEA Interregional Training Course on Mutant Germplasm Characterisation using Molecular markers through providing theory lectures and practical demonstrations on in vitro techniques in mutation induction for crop improvement, Siebersdorf, Austria, August 15-16 2005.
11. IAEA Expert on banana, visited Tanzania for project evaluation, November 7-17 2005.
12. Consultant, 5th FAO/IAEA Interregional Training Course on Mutant Germplasm Characterisation using Molecular markers through providing theory lectures and practical demonstrations on in vitro techniques in mutation induction for crop improvement, Siebersdorf, Austria, May 15-16 2006.
13. Visiting Professor, University of Malaysia, April, 2006.

EDITORIAL BOARD MEMBER

- 1) The Chief-Editor, Reviews of Plant Biotechnology and Applied Genetics- special edition of Plant Cell Tissue and Organ Culture journal. Kluwer Publishers, The Netherlands. (2002-2005).
- 2) Guest editor, Euphytica journal, VOLUME 118 (2) and 121 (2), 2001. Kluwer Publishers, The Netherlands
- 3) Chief Editor, International Journal of Food, Agriculture and Environment (JFAE), Helsinki, Finland (2000- 2004)
- 4) Editorial Board member, Propagation of ornamental plants journal (International Plant propagators society), Sofia, Bulgaria (2002--). This journal has also a website. www.journal-pop.org
- 5). Associate Editor, Plant Cell Tissue and Organ Culture. Springer, The Netherlands (2006--)
- 6). Editorial Board Member, Euphytica, Springer (2006--).

TEACHING EXPERIENCE

At the University of Helsinki, I teach a course on "tissue culture in crop improvement" and mutation breeding to post graduate students.

RESEARCH PUBLICATIONS

1. Jain, S.M., Sunita Talwar, Sudhir K. Sopory and Sipra Guha Mukherjee. 1978. Effect of light on distribution of peroxidase activity in Zea mays. Z. Pflanzenphysiol. 88:169
2. Jain, S.M., S. Bagga, N. Balla-Sarin, Sipra Guha-Mukherjee and Sudhir K. Sopory. 1980. In Vitro culture of anthers in Petunia hybrida and Brassica oleracea. In: Plant Tissue Culture, Genetic Manipulation and Somatic Hybridization of Plant Cells, (eds) P.S. Rao, M.R. Heble and M.S. Chadha. Bhabha Atomic Research Center, Bombay, India, pp 85-92.
3. Gressel, J., G. Ezra and S.M. Jain. 1982. Genetic and chemical manipulation of crops to confer tolerance to chemicals. In: Chemical Manipulations of Crop Growth and Development, (ed) J.S. McLaren, Butterworth, London, pp 79-91.

4. Binding, H., S.M. Jain, J. Finger, G. Mordhorst, R. Nehls and J. Gressel. 1982. Somatic hybridization of an atrazine resistant biotype of *Solanum nigrum* and *S. tuberosum*. I. Clonal variation in morphology and in atrazine sensitivity. *Theor. Appl. Genet.* 63: 273-277.
5. Jain, S.M., R.J. Newton and N. Tuleen. 1988. Tissue culture and gene transfer in barley. *Current Sci.* 57: 59-70.
6. Jain, S. M., R.J. Newton, and E.J. Soltes. 1988. Induction of adventitious buds and plantlet regeneration in *Pinus sylvestris* L. *Current Sci.* 57: 677-679.
7. Jain, S.M., E.A. Shahin and Sam Sun. 1988. Interspecific protoplast fusion for the transfer of atrazine resistance from *Solanum nigrum* to tomato (*Lycopersicon esculentum* L.). In: *Progress in Plant Protoplast Research*. K.J. Puite, J.J.M. Dons, H.J. Huizing, A.J. Kool, M. Koornneef and F.A. Krens, (Eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 221-224.
8. Jain, S.M. and R.J. Newton. 1988. Proto-variation in protoplast derived *Brassica napus* plants. In: *Progress in Plant Protoplast Research*. K.J. Puite, J.J.M. Dons, H.J. Huizing, A.J. Kool, M. Koornneef and F.A. Krens, (Eds.) Kluwer Academic Publishers, Dordrecht, The Netherlands, pp 403-404.
9. Jain, S.M., E.A. Shahin and Sam Sun. 1988. Interspecific protoplast fusion for the transfer of atrazine resistance from *Solanum nigrum* to tomato (*Lycopersicon esculentum* L.). *Plant Cell, Tissue and Org. Cult.* 12: 189-192.
10. Jain, S.M. and R.J. Newton. 1989. Evaluation of protoclonal variation versus chemically induced mutagenesis in *Brassica napus* L. *Current Sci.* 58: 176-180.
11. Jain, S.M., E.J. Soltes and R.J. Newton. 1988. Enhancement of somatic embryogenesis in Norway spruce (*Picea abies* L.). *Theor. Appl. Genet.* 76:501- 506.
12. Jain, S.M., N. Dong and R.J. Newton. 1989. Somatic embryogenesis in slash pine (*Pinus elliottii*) from immature embryo cultures in vitro. *Plant Sci.* 65: 233-241.
13. Singh, R. and S.M. Jain. 1989. The application of biotechnologies to tea. In: *Plant Biotechnologies for Developing Countries, FAO/CTA Symposium*, Luxemburg, pp 251-254.
14. Jain, S.M. and R.J. Newton. 1990. Prospects of biotechnology for tea improvement. *Proc. Indian Natl. Sci. Acad.* 56B: 441-448.
15. Jain, S.M., S.C. Das and T.S. Barman. 1990. Root induction from regenerated shoots of tea (*Camellia sinensis* L.). In: *Proc. BIOTEK-INDIA*, 90, 99 1-13.
16. Jain, S.M., S.C. Das and T.S. Barman. 1991. Induction of roots from regenerated shoots of tea (*Camellia sinensis* L.). *Acta Hort.* 289: 339-340.
17. Jain, S.M. and E. Pehu. 1992. The prospects of tissue culture and genetic engineering in strawberry improvement. *Acta Agric. Scand., Sec B, Soil & Plant Sci.*, 42: 133-139.
18. Jain, S.M., C. Oker-Blom, E. Pehu and R.J. Newton. 1992. Genetic engineering: An additional tool for plant improvement. *Agric. Sci. Finland* 1: 323-338.
19. Jain, S.M. 1993. Studies on somaclonal variation in ornamental plants. *Acta Hort.* 336: 365-372.
20. Jain, S.M. 1993. Somaclonal variation in *Begonia x elatior* and *Saintpaulia ionantha* L. plants. *Sci. Hort.* 54: 221- 231.
21. Jain, S.M. 1993. Recent advances in plant genetic engineering. *Current Sci.* 64: 715-74.
22. Jain, S.M., S.C. Das and T.S. Barman. 1993. Enhancement of root induction from *in vitro* regenerated shoots of tea (*Camellia sinensis* L.). *Proc. Indian Natl. Sci. Acad., Sec B* 59: 623-628.
23. Jain, S.M. and J. Peltonen. 1993. Can the world's food production be sustained in the future? *Universitas Helsingiensis XII* (2): 12-14.
24. Jain, S.M. 1993. Growth hormonal influence on somaclonal variation in ornamental plants. In: *Creating Genetic Variation in Ornamentals*. T. Schiva and A. Mercuri (Eds.). Istituto Sperimentale per la Floricoltura, Sanremo, Italy, pp. 93-113.
25. Jain, S.M. 1994. Asian-Pacific region: Advances in agricultural biotechnology. *Universitas Helsinkiensis* 13: 42-44.
26. Newton, R.J., K.A. marek-Swize, M.E. Magallanes-Cedeno, N. Dong, S. Sen and S.M. Jain. 1995. Somatic embryogenesis and plant regeneration in slash pine (*Pinus elliottii* Engelm.). In: *Somatic Embryogenesis in Woody Plants- gymnosperms*, Vol. 3, S. Jain, P. Gupta and R. Newton, (Eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands. pp 183-195.
27. Jain, S.M. and N. Bhalla-Sarin. 1996. Haploidy in *Petunia*. In: *In Vitro haploid Production in Higher Plants*, Vol 5, S.M. Jain, S.K. Sopory and R.E. Veilleux, (Eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands , pp 53-71.

28. Jain, S.M., 1997. Somaclonal variation and mutagenesis for crop improvement. In: Maatalouden tutkimuskeskuksen julkaisuja, Vol 18, Sirkka Immonen (ed), pp 122- 133.
29. Jain, S. M., 1997. Micropropagation of selected somaclones of Begonia and Saintpaulia. J. Biosci. 22: 585—592
30. Jain, S.M., 1997. Biotechnology of industrially important tree species in developing countries, a book chapter, K Watanabe and E . Pehu (ed.), Academic Press, New York. pp 227-238.
31. Jain, S.M., 1997. Creation of variability by mutation and tissue culture in improving plants. Acta Hort. 447: 69-77.
32. Alen, K. and S.M. Jain, 1997. *In vitro* multiplication of Catharanthus roseus. Acta Hort. 447: 167-169.
33. Jain S.M., D. Vitti, M. Tucci, A. Grassotti, E. Rugini and F. Saccardo, 1998. Biotechnology and agronomical aspects in gerbera improvement. Advances in Hort. Sci. 12: 47-53.
34. Jain, S.M., 1997. Plant tissue culture and *in vitro* mutagenesis in plant improvement. Proceedings of third Asia-Pacific Conference, Thailand, pp 385-388.
35. Jain, S.M., 1997. Plant Biotechnology and mutagenesis for sustainable crop production. In: Crop improvement for stress tolerance, R.K. Behl, D.P. Singh and G.P. Lodhi (eds.). CCSHAU, Hissar & MMB, New Delhi, India, pp 218- 232.
36. Jain, S.M. and K. Ishii, 1998. Recent advances in somatic embryogenesis in forest trees. In: Recent advances in biotechnology for tree conservation and management. S. Burns, S. Mantell, C. Tragardh, and A.M. Viana (eds), pp 214-231. Intern. Foundation for Science (IFS), Stockholm, Sweden.
37. Jain, S.M., 1998. Induction of somaclonal variation and mutation in developing new improved cultivars. MIIT PUNE J, pp 23-31 (special edition on agriculture).
38. Jain, S.M. and G.J. DeKlerk, 1998. Somaclonal variation: improvement of ornamental plants. Plant Tiss. Cult. & Biotech. 4: 63-75.
39. Jain, S.M., 1998. Impact of somatic embryogenesis in forest trees. In: Agricultural Biotechnology: Laboratory, Field and market. P.J. Larkin (ed), Canberra, UTC Publishing. pp 320-323.
40. Jain, S.M., M. Buiatti, F. Gimelli and F. Saccardo. 1998. Somaclonal variation in improving ornamental plants. In: Somaclonal variation and induced mutations in crop improvement, S.M. Jain, D.S. Brar and B.S. Ahloowalia (eds). Kluwer Academic Publishers, Dordrecht, The Netherlands. pp 81-105.
41. Jain, S.M., B.S. Ahloowalia and R.E. Veilleux, 1998. Somaclonal variation in crop plants. In: Somaclonal variation and induced mutations in crop improvement, S.M.Jain, D.S. Brar and B.S. Ahloowalia (eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands. pp 203 – 218
42. Brar, D.S. and S.M. Jain, 1998. Somaclonal variation: mechanism and applications in crop improvement. In: Somaclonal variation and induced mutations in crop improvement, S.M. Jain, D.S. Brar and B.S. Ahloowalia (eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands. pp15-38.
43. Watt, M.P., F.C. Blakeway, F.C. Termignoni and S.M. Jain, 1999. Somatic embryogenesis in *Eucalyptus grandis* and *E. dunni*. In: Somatic Embryogenesis in Woody Plants, Vol. 5. S.M. Jain, P.K. Gupta and R.J. Newton (eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands. Pp 63-78.
44. Ishii, K., R. Thakur and S.M. Jain, 1999. Somatic embryogenesis and evaluation of variability in somatic seedlings of in *Quercus serrta* by RAPD markers. In: SM Jain, PK Gupta and RJ Newton (eds), Somatic embryogenesis in woody plants, Vol. 4, pp 403-414.
45. Jain, S.M., 1999. An overview of progress on somatic embryogenesis in forest trees. In: Plant Biotechnology and In Vitro Biology in the 21st Century. A. Altman, M.Ziv, and S. Izhar (eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands. Pp 57-63.
46. Jain, S.M., 1999. Somatic embryogenesis in forest trees.pp 47-53. BIO- REFOR IUFRO/SPDC, ISBN 9900433-2-4 COO61 POOOOE
47. Thakur, R., J. Gotto, S.M. Jain and K. Ishii. 1999. Monitoring genetic stability in Quercus serrata embryogenesis using RAPD markers. Jap. J. Forestry 4: 157-160
48. Jain, S.M., 1999. Somatic embryogenesis of forest trees. In: Proceedings of Application of Biotechnology to Forest Genetics. E.S. Ritter (ed.). Biofor 99, Vitoria-Gasteiz, Spain, pp 173-188.
49. Minocha, R and S.M. Jain, 2000. Tissue culture of woody plants and its relevance to molecular biology. In: Molecular biology of woody plants, volume 1, 315-339. S.M. Jain and S.C. Minocha (eds.), Kluwer , The Netherlands.
50. Jain, S.M., 2000. Mechanisms of spontaneous and induced mutations in plants Radiation Res., Vol. 2: Proceedings. pp. 255-258.

51. Akhtar, N. , N. Kumari, S. Pandey, H. Ara, M. Singh, U. Jaiswal, V.S. Jaiswal and S.M. Jain. 2000. Somatic embryogenesis in tropical fruits. In: Somatic embryogenesis in woody plants, Vol. 6, 93-140. S.M. Jain, P.K. Gupta & R.J. Newton (eds.). Kluwer, The Netherlands.
52. Akhtar, N. and S.M. Jain, 2000. Applications of somatic embryogenesis for the improvement of tropical fruits In: Somatic embryogenesis in woody plants, Vol. 6, 215-248. S.M. Jain, P.K. Gupta & R.J. Newton (eds.). Kluwer, The Netherlands.
53. Jain, S.M., 2001. Tissue culture-derived variation in crop improvement *Euphytica* 118: 153-166.
54. Nichterline, K., M. Maluszynski and S.M. Jain, 2001. Improvement of oilseeds and modification of oil quality through induced mutation techniques. IAEA Working Document, IAEA publication. IAEA-SR-210/29. pp 15-17.
55. Jain, S.M., 2001. Mutation breeding and micropropagation of selected mutants with agronomic desirable traits in Sri Lanka. CGIAR, ISNAR publication, Holland.
56. Maluszynski, M., B.S. Ahloowalia, K. Nichterlein, S.M. Jain et al 2001. Mutating genes to meet the challenge for crop improvement and food security. *AgBiotechNet*: 3:1-5.
57. Newton, R.J., J.C. Bloom, D.H. Bivans and S.M. Jain, 2001. Stable genetic transformation of conifers. *Phytomorphology (Golder Jubilee Issue)* pp 421-434.
58. Jain, S.M. 2001. In vitro approach for natural and induced biodiversity conservation of forest trees. *EFTREN News* 34(1): 8-10
59. Jain, S.M. 2001. Genetic modifications of forest trees. *EFTREN News* 34 (1): 10-12.
60. Jain, S.M., 2002. A review of induction of mutations in fruits of tropical and subtropical regions. *Acta Hort.* 575: 295-302.
61. Jain, S.M. 2002. Feeding the world with induced mutations and biotechnology. Proceedings of International Nuclear Conference 2002-Global trends and perspectives. Seminar 1: Agriculture and Bioscience. MINT, Bangi, Malaysia. pp 1-14.
62. Jain, S.M. 2002. Tissue culture and induced mutations useful tools for floriculture industry. *In Vitro Cellular & Developmental Biology-Plant.* 38: 643.
63. Watt, M.P., Blakeway, F, Mokotedi, M.E.O., and S.M. Jain, 2003. Micropropagation of Eucalyptus. In: Micropropagation of woody trees and fruits. S.M Jain and K. Ishii (Eds.). Kluwer. pp 217-244.
64. Bhalla-Sarin, N., Prasad, U.S., Kantharajah, A.S. and S.M. Jain, 2003. Micropropagation of litchi (*Litchi chinensis* Sonn.). In: Micropropagation of woody trees and fruits. S.M. Jain and K. Ishii (eds.). Kluwer. pp 721-731.
65. Siobhan, M.C., A. Cassells, and S.M. Jain, 2003. Stress and aberrant phenotypes *in vitro* culture. *Plant Cell Tissue and Organ Culture* 74: 103- 121.
66. Jain, S.M. (2003). Improvement of plant salt tolerance for sustainable food and feed production in saline environments. In: Proceedings of the 1st Coordinated Meeting of FAO/IAEA project on Developing salt tolerant crops for sustainable food and feed production in saline lands. Eds. Rungsun, IE et al., Office of Atoms for Peace, Bangkok, Thailand. 10-14 November 2003.
67. Rout, G. and S.M. Jain 2004. Micropropagation of ornamental plants- cut flowers. *Propagation of ornamental plants* 4 (No.2): 3-28.
68. Jain, S.M. 2004. Banana improvement with cellular and molecular biology, and induced mutations: Introduction. In: Banana improvement: cellular, molecular and mutagenesis approaches. S.M. Jain and R. Swennen (eds). Science Publishers, New Hampshire, USA. Pp xi-xii
69. Escalant, J.V. and S.M. Jain, 2004. Banana improvement with cellular and molecular biology, and induced mutations: future and perspectives. In: Banana improvement: cellular, molecular and mutagenesis approaches. S.M. Jain and R. Swennen (eds). Science Publishers, New Hampshire, USA. Pp 359-368.
70. Nandwani D., S.M. Jain and K. Ramavat, 2004. Micropropagation of woody plants. In *Tree Improvement and Biotechnology*. P. Shanmughavel and S. Igancimuthu (Eds.). Pointer Publishers, India. Pp 16-52.
71. Jain, S.M. and M. Maluszynski 2004. Induced mutations and biotechnology on improving crops. In: *In vitro applications in crop improvement: Recent Progress*. A. Mujib, M. Cho, S. Predieri, S. Banerjee (ed.). IBH-Oxford, India. Pp 169-202.
72. Newton, R.J., W. Tang and S.M. Jain, 2005. Slashpine (*Pinus elliottii* Engelm.). In: *Protocols of somatic embryogenesis in woody plants*. S.M. Jain and Pramod Gupta (eds.). Springer, The Netherlands. Pp 1-10.

73. Jain, S.M. 2005. Major mutation-assisted plant breeding programs supported by FAO/ IAEA. *Plant Cell Tissue and Organ Culture* 82: 113-123.
74. Rout, G. and S.M. Jain 2005. Micropropagation of floricultural crops plants. In: *Journey of a Single Cell to a Plant*. SJ Murch and PK Saxena (Eds.). Oxford & IBH Publishing House, New Delhi, India. PP 309-365.
75. Chikelu Mba, S. M. Jain, and P. J.L. Lagoda. 2005. Mutation Induction and MAS: An overview of the activities of the Joint FAO/IAEA Division (AGE). FAO Publication, Rome, Italy.
76. Jain, S.M. 2006. An update on overall recent progress on somatic embryogenesis in forest trees. In: *Plantation Technology in Tropical Forest Science*. K Suzuki, K Ishii, S Sakurai and S Sasaki (Eds.). Springer- Verlag, Tokyo, Japan. PP 113-122.
77. Jain, S.M. 2006. Book review- Liquid culture systems for in vitro plant propagation. *Plant Cell Tissue and Organ Culture*, 84: 253-254.
78. Jain, S.M. 2006. Book review- Haploids in crop improvement II. *Plant Cell Tissue and Organ Culture*, 84: 251.
79. Jain, S.M., M.A. Jenks, G. Rout, and L. J. Radojevic. 2006. Micropropagation of ornamental potted plants. Propagation of ornamental plants (in press)
80. Jain S.M. 2006. Radiation-induced mutations for developing Bayoud disease resistant date palm in North Africa (Proceeding chapter, in press).
81. Jain S.M. 2006. Recent advances in plant tissue culture and mutagenesis. *Acta Hort* (in press).
82. Jain S.M. and M. Spencer. 2006. Biotechnology and mutagenesis in ornamental plant improvement. (book chapter, in press).
83. Jain S.M. (2006). Mutation breeding in ornamental plants (under preparation)

PAPERS PRESENTED IN SCIENTIFIC CONFERENCES WORLDWIDE: 65

PUBLISHED BOOKS

1. Somatic Embryogenesis in Woody Plants- Historical, biochemical, molecular and applications, Vol 1, 1995. S.M. Jain, P.K. Gupta and R.J. Newton (eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
2. Somatic Embryogenesis in Woody Plants-angiosperms, Vol 2, 1995. S.M. Jain, P.K. Gupta, and R.J. Newton (eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
3. Somatic Embryogenesis in Woody Plants-gymnosperms, Vol 3, 1995. S.M. Jain, P.K. Gupta and R.J. Newton (eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
4. In Vitro Haploid Production in Higher Plants, Vol 1-fundamental aspects and methodology. 1996. S. M. Jain, S.K. Sopory, and R.E. Veilleux (Eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
5. In Vitro Haploid Production in Higher Plants, Vol 2-applications. 1996. S.M. Jain, S.K. Sopory, and R.E. Veilleux (eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands..
6. In Vitro Haploid Production in Higher Plants, Vol 3-important selected plants. 1996. S.M. Jain, S.K. Sopory, and R.E. Veilleux (Eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
7. In Vitro Haploid Production in Higher Plants, Vol 4-cereals. 1996. S.M. Jain, S.K. Sopory, and R.E. Veilleux (Eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
8. In Vitro Haploid Production in Higher Plants, Vol 5-oil, ornamental and miscellaneous plants. 1996. S.M. Jain, S.K. Sopory and R.E. Veilleux (Eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands.
9. Somaclonal Variation and Induced Mutations in Crop Improvement. 1998 S. M. Jain, D.S. Brar and B.S. Ahloowalia (Eds.). Kluwer Academic Publishers, Dordrecht, The Netherlands..
10. Somatic embryogenesis in woody plants, Vol 4. S.M. Jain P.K. Gupta and R.J. Newton (eds.), 1999. Kluwer Academic Publishers, The Netherlands.
11. Somatic embryogenesis in woody plants, Vol 5. S.M. Jain, P.K. Gupta and R.J. Newton (eds.), 1999. Kluwer Academic Publishers, The Netherlands.
12. Somatic embryogenesis in woody plants, Vol. 6. S.M. Jain, P.K. Gupta and R.J. Newton (eds.), 2000. Kluwer Academic Publishers, The Netherlands
13. Molecular Biology of woody plants. S.M. Jain and S.C. Minocha (eds.), 2000. Volume 1. Kluwer Academic Publishers, The Netherlands.

14. Molecular biology of woody plants. S.M.Jain and S.C.Minocha (eds.), 2000. Volume 2. Kluwer Academic Publishers, The Netherlands.
15. Crop management and post harvest handling of horticultural products- Quality Management. Ramdane Dris, Raina and S.M.Jain (eds.), Volume 1, 2001. Science Publishers, New Hampshire, USA.
16. Molecular techniques in crop improvement. S. M. Jain, DS Brar and BS Ahloowalia (eds.),2002. Kluwer Academic Publishers, The Netherlands.
17. Environment and Crop Production. Ramdane Dris, I.Khan and S.M. Jain (eds.). 2002. Science Publishers, New Hampshire, USA.
18. Plant nutrition-growth and diagnosis. Ramdane Dris, F. H. Abdelaziz and S.M. Jain (eds.), 2002. Science Publishers, New Hampshire, USA.
19. Crop management and post harvest storage and plant nutrition in horticultural crops- Fruits and vegetables. Ramdane Dris, Raina and S.M. Jain (eds.), Volume 2, 2003. Science Publishers, New Hampshire, USA.
20. Crop management and post harvest storage and plant nutrition in horticultural crops- Crop fertilization nutrition and growth. Ramdane Dris, Raina and S.M. Jain (eds.), Vol. 3, 2003. Science Publishers, New Hampshire, USA.
21. Crop management and post harvest storage and plant nutrition in horticultural crops- Diseases and disorders of fruits and vegetables. Ramdane Dris, Raina and S.M. Jain (eds.), Vol. 4, 2004. Science Publishers, New Hampshire, USA.
22. Micropropagation of woody plants and fruits. S.M. Jain and K Ishii (eds.), 2003. Kluwer Academic Publishers, The Netherlands.
23. Banana improvement: cellular, molecular and mutagenesis approaches. S.M.Jain and R. Swennen (eds.), 2004 Science Publishers, New Hampshire, USA.
24. Production Practices and Quality Assessment of Food Crops- Preharvest Practices. R. Dris, and S.M. Jain (eds.). 2004.Kluwer.
25. Production Practices and Quality Assessment of Food Crops-Plant Mineral Nutrition and Pesticide Management. R. Dris, and S.M. Jain. (eds.). 2004. Kluwer.
26. Production Practices and Quality Assessment of Food Crops-Quality Handling and Evaluation. R. Dris, and S.M. Jain. (eds.). 2004.Kluwer.
27. Production Practices and Quality Assessment of Food Crops-Postharvest Treatment and Technology. R. Dris and S.M. Jain. (eds.). 2004. Kluwer.
28. Protocols of somatic embryogenesis in woody plants. S. M. Jain and Pramod Gupta (eds.), 2005. Springer, Dordrecht, The Netherlands.
29. Breeding of neglected and under-utilized crops, spices and herbs. S. Ochatt and S. M. Jain (eds.). 2006 Science Publishers, New Hampshire, USA (in press).
30. Breeding of Plantation crops. M. Priyadarshan and S.M. Jain (under preparation). Science publishers
31. Advances in Molecular Breeding towards salinity and drought tolerance in crops. Jenks, Hasegawa and SM Jain (under preparation). Springer
32. Protocols for micropropagation of woody and fruit trees. S.M. Jain and H. Haggman, (under preparation). Springer

PUBLICATION OF REPORTS AS A SCIENTIFIC SECRETARY

1. FAO/IAEA report of the third Research Co-ordination meeting on Cellular biology and biotechnology including mutation techniques for creation of new useful banana genotypes, held in Colombo, Sri Lanka, 4-8 October 1999, pp 1-167, IAEA publication, IAEA-312-D2.RC.579.3 (2001).
2. FAO/IAEA report on the first Research Co-ordination meeting on "Improvement of tropical and subtropical fruit trees through induced mutations and biotechnology", held in Vienna, Austria, 25-29 September 2000. IAEA Publication, 2001, pp 1-89. IAEA-312.D2.RC.823
3. FAO/IAEA report on the fourth and final Research Co-ordination meeting on Cellular biology and biotechnology including mutation techniques for creation of new useful banana genotypes, held in Leuven, Belgium, September 2001 (published as a book) in 2004.
4. FAO/IAEA report on the second Research Co-ordination meeting on "Improvement of tropical and subtropical fruit trees through induced mutations and biotechnology", held in Vienna, Austria, 23-28 September 2002. IAEA Publication.
5. FAO/IAEA report on Low cost plant tissue culture for developing countries.

6. FAO/IAEA report on the third Research Coordination Meeting on "Genetic improvement of underutilized and neglected crops in LIFDCs through irradiation and related techniques", Pretoria, S. Africa, 19-23 May 2003.

GRANTS FUNDED

1. Grant by Finnish Academy of Science, June-July, 1992, for attending World Cell and Tissue Culture Cong., Washington, DC, USA and In Vitro Culture and Horticulture Breeding, Baltimore, USA.
2. Grant by Finnish Academy of Science, March, 1993, for attending XVIIth EUCARPIA Ornamental Conf., Sanremo, Italy.
3. Grant by Finnish Academy of Science for editing a book entitled Somatic embryogenesis in woody plants, Kluwer academic Publishers, The Netherlands, 1993.
4. Grant by Finnish Academy of Science, June, 1993, for attending COST Programme for gametic embryogenesis, Norway.
5. Award of Helsinki University Research Docent Stipend to work on our research project Cell and Tissue Culture in the Development of Disease Resistance in Strawberry, 1993-94. Term: 1 year 6. Grant by Finnish Academy of Science, March, 1994, for attending 2nd Asia- Pacific Conference, Madras, India.
7. Grant by University of Helsinki for continuing work on our research project Cell and Tissue Culture in the Development of Disease Resistance in Strawberry, 1994. Term: 6 months.
8. Fellowship awarded by CNR/RAISA, Roma, Italy to work on our joint project Genetic transformation and molecular characterization of olive emblings and transgenic plants, 1994-95. Prof. Eddo Rugini, collaborator. Term: 6 months.
9. Award of Helsinki University Research Docent Stipend to work on our project Transgenics in strawberry, 1995. Term: 1 year.
10. Award of grant Finland-China exchange researcher by Finnish Academy to visit Prof. Hu Han, Chinese Academy of Science, Beijing, July 1996.
11. Award of grant by University of Helsinki for attending Third Asia- Pacific conference, Hua Hin, Thailand, November 10-15, 1996.
12. Departmental grant, Plant Production Department, University of Helsinki, for disease resistance in strawberry, 1997. Term: 6 months.
13. Award of a fellowship by Japanese Science and Technology Foundation, Japan to work on a joint project "Genetic transformation and monitoring genetic fidelity of conifer somatic embryo plants, June-August, 1997. Dr. K. Ishii is the collaborator. Term: 3 months.
14. Award of travel grant, Chancellor of University of Helsinki, Finland to participate in Second Plant Biotechnology conference, Hanoi, Vietnam, December, 1997.
15. Award of travel grant, Chancellor of University of Helsinki, Finland to participate in IUFRO meeting, Forest tree multiplication with micropropagation, New Delhi, India, April, 1998.
16. Award of Finish-Chinese grant to visit Prof. Guo, Institute of Botany, Beijing, China. August 1998.
17. Award of developmental research grant entitled Development of insect resistant rice varieties, Finnish Academy of Science, Finland. 1998-99. Term: 1 year.
18. Award of Center for International Mobility (CIMO) grant, Helsinki to visit University of Mahidol, Thailand and University of Malaya, Kuala Lumpur, Malaysia. December 1998.
19. Award of a grant by Skandinavia-Japan Sasakawa Foundation to work on joint project between Dr. K. Ishii, Japan, and Finland, 1998-99.
20. Award of a grant from the University of Helsinki for attending International Congress on Radiation Research, Dublin, Ireland, July, 1999.
21. Award of a grant from Finnish Academy and Korea Sciences and Engineering, Korea to work on somatic embryogenesis, September, 1999.
22. Award of a grant from University of Helsinki to visit Beijing Forestry University, Beijing, China to give lectures on forest biotechnology, December 28, 2005- January 7 2006.
23. Award of grant, Finnish Academy of Science under scientific exchange between China and Finland, March 2006.

PREVIOUS PROFESSIONAL ACTIVITIES AT IAEA

I was involved in Technical cooperation projects, dealing with induced mutations in cassava, fruits, date palm, banana, ornamental plants in South Asia, South East Asia, Near East, Africa, and Latin America; and international coordinated research projects on underutilized and neglected crops, salinity and drought, cassava, banana and tropical and subtropical fruits. My job was to evaluate research proposals and supervise the progress of on- going projects, provide to the counterparts chemicals, equipments and experts for project implementation. We collaborated with international organizations INIBAP, FAO, and CGIAR institutes such as ICRISAT, and IRRI.

I also participated in making budget, project evaluation, and organize workshops in developing countries. I taught tissue culture and mutations in crop improvement.

CURRENT PROFESSIONAL ACTIVITIES

I am in the process of setting up my own research group dealing with mutation, breeding and biotechnology in horticultural crops. We are also in the process of developing a program on biomass production for bio-energy.

ACTED AS A SCIENTIFIC SECRETARY IN FAO/IAEA TRAINING WORKSHOPS

- 1). Regional training workshop on Hands-on experience on molecular and mutation techniques, Siebersdorf, Austria, 13-24 September 1999.
- 2). Banana 3rd RCM on Cellular biology and biotechnology including mutation techniques for creation of new useful banana genotypes, Colombo, Sri Lanka, 4-8 October 1999.
- 3) First RCM on Improvement of tropical and subtropical fruit trees through induced mutations and biotechnology, Vienna, Austria, 25-29 September 2000.
- 4). FAO/IAEA Regional Workshop on In vitro protocols and mutant selection using Bayoud toxin, Marrakech, Morocco, 20-26 November 2000.(Also, lecturer to teach tissue culture and mutations)
- 5). FAO/IAEA National Workshop on In vitro mutagenesis, tissue culture, and molecular marker analysis of ornamental plants, Bangkok, Thailand, 17-23 December 2000. (Also, lecturer to teach tissue culture and mutations)
- 6). FAO/IAEA Regional Workshop on Mutagenesis, molecular pathology and markers in date palm improvement, 18-22 June, 2001, Sfax, Tunisia. (Also, lecturer to teach tissue culture and mutations)
- 7). Fourth and final banana RCM on Cellular biology and biotechnology including mutation techniques for creation of new useful banana genotypes, Leuven, Belgium, 24-28 September 2001.
- 8) FAO/IAEA National Workshop on In vitro plant multiplication, selection, mutagenesis and molecular marker studies in plant improvement, MINT, Bangi, Malaysia, 29 October– 2 November 2001.(Also, lecturer to teach tissue culture and mutations)
- 9) FAO/IAEA National Workshop on Induced mutations and biotechnology in ornamental plant improvement, Cipanas, West Java, Indonesia, November 4-8 2001(Also, lecturer to teach tissue culture and mutations).
10. FAO/IAEA Regional Training Workshop on “Application of molecular markers in disease diagnostic and mutant characterization in date palm”, Algiers, Algeria, 24-28 August 2002 (Also, lecturer to teach tissue culture and mutations).
11. Second Research Co-ordination Meeting on “Improvement of Tropical and Subtropical Fruit Trees through Induced Mutations and Biotechnology, Vienna, Austria, 2-6 September 2002.
12. FAO/IAEA National Workshop on Applications of induced mutations and molecular tools in horticultural crops including ornamental plants”, 7-12 October 2002, held at MINT, Bangi, Malaysia (Also, lecturer to teach tissue culture and mutations).
13. FAO/IAEA National Workshop on Black Pepper improvement –cell and tissue culture, induced mutations and molecular markers, December 9-13 2002, Matale, Sri Lanka (Also, lecturer to teach tissue culture and mutations).
14. Third Research Coordination Meeting on Genetic improvement of underutilized and neglected crops in LIFDCs through irradiation and related techniques, Pretoria, S. Africa, 19-23 May 2003.
15. FAO/IAEA 1st interregional training course on Mutation, biotechnology and screening techniques for tolerance to salinity, 26-30 April 2004, Fasilabad, Pakistan.

16. FAO/IAEA national training course on In vitro large-scale plant production and cryopreservation of mutants, Bangi, Malaysia, 28 June- 2 July 2004.
17. FAO/IAEA 2nd interregional training course on Application of induced mutations and biotechnology for salt tolerance improvement, 2-6 August 2004, Beijing, China.
18. Third and final Research Coordination Meeting on "Improvement of Tropical and Subtropical Fruit Trees through Induced Mutations and Biotechnology, Nelspruit, South Africa, 4-8 October 2004 19. FAO/IAEA regional training course on cost effective up scale in vitro plant production and long-term storage of mutant plant material, Sfax, Tunisia, 29 November- December 2 2004.

BUSINESS/ TRAVEL EXPERIENCE

Africa

Algeria, Congo, Egypt, Ghana, Kenya, Morocco, South Africa, Tanzania, Tunisia

Asia/Far East Asia

Australia, China, Hong Kong, India, Indonesia, Japan, Malaysia, Pakistan, Philippines, Singapore, South Korea, Sri Lanka, Thailand, Vietnam

Near East

United Arab Emirates, Iran, Yemen

Europe

Austria, Belgium, Serbia and Montenegro, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Israel, Italy, Lithuania, Netherlands, Norway, Russia, Spain, Slovakia, Sweden, U.K.

North and South America

Brazil, Canada, Cuba, USA

REFERENCE

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