

Name: Dr. (Mrs) Rupa Dhawan

Designation: Senior Plant Physiologist

Residential address: 10/112, Farm Colony, HAU Campus, Hisar-125004.

Academic qualifications: Ph.D. M.Sc. Hons. School (Botany with specialization in Plant Physiology), B.Sc. Hons. School in Botany.

Telephone:

Office: 01662 -289268

Residence: 01662- 271469

Mobile: 9896115663

E-mail: Rupadhawan@hotmail.com

FIELD OF SPECIALIZATION: Weed Science- Herbicide resistance, Dormancy and germination behaviour of weed seeds; Stress Physiology

MEMBERSHIP OF PROFESSIONAL SOCIETIES:

Life member Indian Society of Weed Science

Life member K.K. Nanda Foundation

AWARDS:

Awarded PL-480 Junior Research Fellowship (1976-77).

Awarded Senior Research Fellowship by CSIR (1977-79).

Awarded Post Doctoral Research Fellowship by CSIR (1980-81).

Awarded Roll of Honour by Director of Research HAU Hisar -2003.

TEACHING AND RESEARCH HIGHLIGHTS:

Teaching: Involved in UG and PG teaching in Plant Physiology courses

Courses Taught:

Introductory Botany

Introductory Plant Physiology

Photosynthesis, Respiration and Nitrogen fixation

Plant Regulators

Stress Physiology

Research Highlights/ Interests:

Employing physiological, biochemical and molecular approaches towards development of integrated weed management practices.

Research Schemes Operated:

Principal Investigator "Molecular characterization of isoproturon susceptible and resistant biotypes of *Phalaris minor* for assessment of genetic diversity"(Funded By ICAR 2004-07).

Co-Investigator "Identification of genetic and morphological parameters in relation to low nitrogen tolerance in maize."(Funded by ICAR 2000-03).

Co Investigator "Identification of critical morphophysiological and genetic factors in drought tolerance in maize (Funded by ICAR 1999-2002).

LIST OF PUBLICATIONS:

Research Papers:

1. Dhawan , R.S. and Gupta, S. 2007. Variable response of malthion on isotroturon resistant biotypes of *Phalaris minor* Retz. from Haryana and Panjab. **Annals of Plant Protection Sciences** (Communicated).
2. Dhawan, R.S. 2005. Studies on germination and emergence of *Rumex maritimus*. **Indian Journal of Weed Science**.37(1&2): 144-146.
3. Dhawan,R.S. Dhawan, A.K. Kajla,S and Moudgil, R. 2005. Assessment of variation in isotroturon susceptible and resistant biotypes of *Phalaris minor* Retz. By RAPD analysis. **Indian Journal of Biotechnology**. 4:534-537.
4. Dhawan, R.S. , Dhawan, A.K.and Goyal,S.S.2005. Diferential effect of glyphosate on nitrate reduction in excised leaves of *Hordeum vulgare* L. and *Zea mays* L.**Pesticide Research Journal**. 16(2). 41-42.
5. Dhawan, R.S. 2004: Reversal of isotroturon by malathion in *Phalaris minor* Retz. **Indian J. Weed Sci**. 36 (3 and 4).260-261.
6. Dhawan, R.S., Dhawan, A.K. and Kajla,S.2004. Protein profiles of some isotroturon susceptible and resistant biotypes of *Phalaris minor* Retz. **Indian J. Weed Sci**.36 (1&2).38-40.
7. Dhawan, R.S.,Dhawan, A.K., Kajla, S. and Moudgil, R. 2003a. Amylase induction during seed germination in isotroturon susceptible and resistant biotypes of *Phalaris minor* Retz. **Ind. J. Exptl. Biol**. 41:373-75
8. Dhawan, R.S. and Malik, R.K.2003 b. Biology of *Echinochloa* species under different dates of sowing and in association with different rice(*Oryza sativa*) accessions. **Ind. J. Agric. Sci**. 73(11). 594-7.
9. Dhawan, R.S. Singh, S and Malik, R.K.2003. Growth response of *Echinochloa crusgalli* in association with Rice genotypes. **Ind. J. Weed Sci**. 35 (3 & 4): 197-200.
10. Dhawan, R.S. and Malik, R.K. 1999. Effect of isotroturon on leaf membrane permeability in some biotypes of *Phalaris minor*. Retz. **Ind . J. Pl. Physiol**. 4(2) 125-26.
11. Dhawan, R.S. and Malik, R.K. 1998. Effect of soil moisture on the phytotoxicity of tralkoxydim in wild oats. **Agri. Sci . digest**. 18(2): 117-119.
12. Dhawan, R.S. and Malik, R.K. 1997. Differential effect of isotroturon on Hill activity in two biotypes of *Phalaris minor* Retz. **Ind. J. Weed Sci**. 29(1&2): 92-93.
13. Singh, S., Malik, R.K., Dhawan, R.S. and Singh, S. 1995. Effect of sulfonylurea herbicide on weed control in transplanted rice. **Ind. J. Weed Sci**. 27: 189-90.
14. Dhawan, R.S. 1995. Effect of isotroturon on Hill activity and membrane permeability in leaves of *Triticum sativum* L. , *Phalaris minor* Retz. and *Avena ludoviciana* . **Ind. J. Agric. Sci**. 65(12): 49-50.
15. Dhawan, R.S. and Malik, R.K. 1995. Effect of isotroturon on reducing and non-reducing sugars in two biotypes of *Phalaris minor* Retz. **Ind. J. Pl.Physiol**. 38(2). 171-172.
16. Dhawan, R.S. and Malik, R.K. 1995. Influence of irrigation on germination and growth of *Zea mays* L. and *Vigna radiata* L. Wilczek under Eucalyptus hybrid shelterbelt. **Agri. Sci. Digest**. 15(4). 209-211.

17. Dhawan, R.S. and Malik, R.K. 1995. Germination response of sorghum to Pendimethalin residues in soil. **Agri. Sci. Digest.** 15(4) 212-14.
18. Dhawan, R.S. and Malik, R.K. 1993. Persistence of anilophos in soil. **Ind .J. Weed Sci.** 25(3&4):. 108.
19. Dhawan, R.S, Phogat, B.S. and Malik, R.K. 1992. Differential effects of isoproturon on chlorophyll, reducing sugars and proteins in *Phalaris minor* Retz. and *Triticum aestivum* L. **Indian J. Pl. Physiol.** 35:101-103.
20. Phogat, B.S., Bhan, V.M., Dhawan, R.S. and Singh, J. 1991. Effect of time and method of application of isoproturon on weeds in potato. **Ind. J. Agron.** 36: 131-132.
21. Phogat, B.S., Bhan, V.M. and Dhawan, R.S. 1991. Effect of time and method of application of isoproturon on weeds in wheat. **Ind. J. Agron.** 36:399-400.
22. Dhawan, R.S. 1990. Responses of some Brassica varieties to salt stress. **Agric. Sci. Digest.** 10: 18-20.
23. Phogat, B.S. Bhan, V.M. and Dhawan, R.S. 1990. Studies on the competing ability of sugarcane with weeds. **Indian J. Weed Sci.**22: 37-41.
24. Jain, R.K., Dhawan, R.S. , Sharma, D.R. and Chowdhary, J.B. 1988. Selection and characterization of NaCl tolerant cell cultures of brinjal (*S. melongena*). **Indian J. Pl. Physiol.** , 31: 431-433.
25. Dhawan, R.S. 1987. Effect of presoaking of seeds by indole-3-acetic acid on growth and yield of *B. juncea* L. under salt stress. **Cruciferae Newsletter.** 12: 106-107.
26. Jain, R.K., Dhawan, R.S. , Sharma, D.R. and Chowdhary, J.B. 1987. Salt tolerance and Proline accumulation - a comparable study in salt tolerant and wild type cultured cells of egg plant. **Plant Cell Reports.** 6: 382-384.
27. Dhawan, R.S. Sharma, D.R. and Chowdhary, J.B. 1987. Effect of salinity on germination and yield characters of three species of Brassica. **Indian J . Agri. Sci.** 57: 107-111.
28. Dhawan, R.S. and Nanda, K.K. 1984. Effect of some monophenols on rooting hypocoyl cuttings of *Impatiens balsamina* L. in relation to auxin and nutrition. **Ind. J. Pl. Physiol.** 27:44-47.
29. Dhawan, R.S. and Singh, R. 1983. Relative differences in photosynthetic contribution of leaves and pods in two cultivars of gram differing in seed weight. **Ind.J. Pl. Physiol.** 26: 276-284.
30. Dhawan, R.S. and Nanda, K.K. 1982. Stimualtion of adventitious root formation on *Impatiens balsamina* L. cuttings by coumarin and associated biochemical changes. **Biol. Plantarum.** 24: 44-47.
31. Dhawan, R.S. and Nanda, K.K. 1981. Effect of phenolic compounds on the rooting of cuttings of *Impatiens balsamina* L. in relation to auxin and nutrition. **Ind. J. Exptl. Biol.** 19: 607-610.
32. Sethi, R. and Nanda, K.K. 1977. Stimulatory effects of some antimetabolites on rooting hypocotyl cuttings of *Impatiens balsamina* L. **Ind. J. Pl. Physiol.** 20: 77-86.

Review Articles:

33. Dhawan, R.S. 2004: Screening of Rice germplasm for allelopathic weed suppression. **In Proc. International Workshop on Protocols and Methodologies in Allelopathy.**pp51-58.

34. Dhawan, R.S. and Malik, R.K. 1996. Development of resistance in *Phalaris minor* Retz. to isoproturon- a message to improve herbicide use strategies. **In Proc. Seminar on Environmental challenges and strategies**, Hisar.Ed. C.P.Malik.60-65.
35. Nanda, K.K. Dhawan, R.S. and Kumar, S. 1982. Some paradoxical effects of metabolic inhibitors on root initiation and floral bud formation. **Ind. J. Pl. Physiol.** 24:1-25.
36. Nanda, K.K., Kumar, S and Dhawan ,R.S. 1982. Morphogenetic effects of phenolic compounds in relation to hormones and nutrition. **In 'Recent Developments in Plant Sciences' (S.M. Sircar commemoration volume)**. 143-236.
37. Nanda, K.K. and Sethi,R 1979. Populus as a tool in understanding the physiology of adventitious root formation. **In Proc . Symp. 'Silviculture, Management and Utilization of Poplars.'** Srinagar. 43-61.

Bulletins:

38. Malik, R.K. , Yadav, A., Garg, V.K., Balyan, R.S., Malik, Y.S., Malik, R.S. Singh, S. and Dhawan, R.S. 1995. Herbicide Resistance: Current status and Research findings. **Extension Year Bulletin, Deptt. of Agronomy. CCSHAU, Hisar**, pp1-38.

Full length papers in Proceedings of meetings/Conferences etc:

39. Dhawan, R.S., Singh, S., Pahwa, S.K. Yadav, A and Malik, R.K. 2002. An assessment of resistance in *Phalaris minor* by seedling bioassay . **In Proc. International workshop on Herbicide Resistance and Zero tillage in Rice-Wheat cropping systems.Hisar**. pp 52-55.
40. Singh, S., Dhawan, R.S.,Malik, R.K., Singh, V. and Tamak, J.C. 1997. Influence of Post emergence weed control in Sugarcane production. **In Sucrose synthesis and recovery in sugarcane production". Issues and Dimensions**. (Eds. Dhawan, A.K., Chaudhary, M.K., Dendsay, J.P. and Dang, Y.P). Karnal. 119-12.
41. Dhawan, R.S., Malik, R.K and Singh, S. 1993. Threat to sorghum under Eucalyptus shelterbelt system. **In' Some Facets of Diversity'**. (Editors. R.K.Kohli.,Jerath, N. and Batish, D). **Publication of the Society of Environmental Scientists and Punjab state council for Science and Technology, Chandigarh**. pp 213-17.

Abstracts of Papers presented at meetings/ symposia:

42. Dhawan, R. S. and Singh, R. 2007. Molecular characterization of *Phalaris minor* Retz. biotypes. In Proceedings “International conference on Sustainable Agriculture for food,bio-energy and Livelihood security” Held at JNKVV, Jabalpur, 14-16 Feb. 2007.pp 367.
43. Dhawan, R.S., Dhawan, A. K., Singh, R. and Dhindsa, J.P.S. 2006. Ecotypic variation in *Phalaris minor* Retz. – Evidence from Protein profiles. In abstracts of “Proceedings of National Seminar on Plant Physiology”held at Thrissur, Kerala, 28-30th November, 2006. pp 158-159.
44. Dhawan, R.S. Sharma, S.D. and Malik, R.K. 2005. Reduced phytotoxic effects of sulfosulfuron, clodinafop and Fenoxaprop on *Phalaris minor* in permanent trials. **In Proc Biennial Conference of ISWS** held at PAU , Ludhiana ,pp273-74

45. Dhawan, R.S. 2005. Management of *Phalaris minor* in wheat-Some agro-ecological and physiological aspects. **In abstracts Proc.Satellite seminar on Plant physiology.**pp39-40
46. Dhawan, R.S., Dhawan, A.K., Moudgil,R. and Kajla, S.2003b. Protein profiles of some isoproturon susceptible and resistant biotypes of *Phalaris minor* Retz. during seedling and plant growth. In "**Proc. 2nd International Congress of Plant Physiology.** India, pp176.
47. Dhawan, R.S. 2003. Invasion of *Phalaris* sp in India. In Abstracts" National Seminar on Alien Invasive weeds in India" Jorhat, Assam. pp52
48. Dhawan, R.S. 2003. Effect of cycocel on vegetative and reproductive growth of *Parthenium hysterophorus*. In Proc. National Seminar on physiological interventions for improved crop productivity and quality.Opportunities and constraints. Tirupati (A.P)343.
49. Dhawan, R.S., Dhawan, A.K.,Moudgil,R and Kajla,S.2003. Protein profiles of isoproturon susceptible and resistant biotypes of *Phalaris minor* Retz.during seedling and plant growth. In Proc. 2nd International congress of Plant Physiology, India. Pp176.
50. Dhawan, R.S., Singh,s. and Malik, R.K.2003. Germination characteristics of *Phalaris minor* as influenced by herbicide sprays. In Abstract"Biennial Conference of IWSS, Pantnagar.pp58.
51. Moudgil, R., Dhawan, A.K. Mandhan, R.P. Kajla, S., Dhindsa, J.P.S. and, Dhawan, R.S.2002. Effect of thidiazuron and other growth regulators on micropropagation of sugarcane cultivars . **In Proc. Seminar on' New opportunities and challenges for improving crop productivity through biotechnology (PS1-70)** pp75.
52. Dhawan, R.S., Singh, S. and Malik, R.K. 2000. Variability in threshold germination temperature in populations of *Phalaris minor* Retz.(56). **In Proc' Third International Weed Science Congress ' Fig. Du Iguassu. Brazil.** pp26.
53. Dhawan, R.S., Singh, S ., and Malik, R.K. 2000. Phytotoxic effects of sulfosulfuron and clodianfop on seed germination and growth of isoproturon susceptible and resistant biotypes of *Phalaris minor* Retz.**In Proceedings National Seminar on Plant Physiological Paradigm for Fostering Agro and Biotechnology and Augmenting Environmental Productivity in Millenium 2000.** Lucknow. pp24.
54. Dhawan, R.S., Dhawan, A.K. and Goyal.S.S. 1999. Effect of phosphinothricin and glyphosate on nitrate reduction in maize and barley-C₃ and C₄ plants. **In Proceedings National Seminar on Plant Physiology at Interface of Agrihorticulture and Industry.** Udaipur.pp 69.
55. Dhawan, R.S. , Malik, R.K. and Singh, S. 1997. Stimulatory effects of sublethal concentrations of isoproturon and metoxuron on vegetative and reproductive growth of *Phalaris minor* Retz. biotypes. **In Proc. Biennial Conference of Indian Society of Weed Science. Ludhiana.** pp104.
56. Singh, S. Singh, B.R., Malik, R.K. and Dhawan, R.S. 1992. Weed management in rice nurseries. **In Proc. Ann. Weed Sci. Cong.** Hisar. pp 52.
57. Dhawan, R.S. and Malik, R.K. 1992. Effect of soil moisture on the phytotoxicity of tralkoxydim against wild oats. **In Proc. Ann Weed Sci. Conference. Hisar.**pp. 136.
58. Singh, S., Malik, R.K., Dhawan, R.S. and Singh, S. 1992. Effect of chlorimuron and metsulfuron on weed control in transplanted rice. **In Proc. Ann. Weed Sci. Conference. Hisar,** pp.156.

59. Dhawan, R.S. and Malik, R.K. 1991. Allelopathic effects of wild oats (*Avena ludoviciana*) residues on germination of some crop plants. In Abstracts of Proc. '**National Seminar of young Scientists on environmental Plant Physiology**'. Garhwal. pp 50.
60. Dhawan, R.S. , Phogat. B.S., Malik, R.K. and Bhan, V.M. 1990. Effect of phytotoxins from wild oats (*A.ludoviciana*) on germination of rice cultivars. **In Absts . of Proc. Biennial Conference of Indian Society of Weed Science. Jabalpur.** pp.191.
61. Dhawan, R.S. 1987. Effect of presoaking of seeds by some growth regulators on growth and yield under salt stress in *B.juncea* L. **In Proc. International Conference of Plant Physiologists of the SAARC countries on the role of Plant Physiology in crop productivity. Gorakhpur.** pp.109.
62. Dhawan, R.S. 1987. Response of some Brassica varieties to salt stress. **In Proc. International Conference of Plant Physiologists of the SAARC countries on the role of Plant Physiology in Crop Productivity. Gorakhpur.** pp.117
63. Jain, R.K. Dhawan, R.S. Sharma, D.R. and Chowdhary, J.B. 1986. In vitro selection of NaCl tolerant cell lines of Brinjal (*Solanum melongena* L.) . **In Proc. Plant Cell and Tissue culture of economically important plants. (Ed. G.M.Reddy). Hyderabad.** pp.413.
64. Dhawan, R.S. , Sharma, D.R. and Chowdhary, J.B. 1985. Effect of sodium chloride salinity on germination and yield characters in three species of *Brassica*. In Abstracts of Proceedings on '**National Seminar on Plant physiology**'. Varanasi. pp.56
65. Jain, R.K., Dhawan, R.S. , Chowdhary, J.B. and Sharma, D.R. 1984. Selection and characterization of NaCl tolerant cell lines of egg plant. In **Abstracts'National Seminar on Plant Physiology"**, Hisar.pp44.
66. Dhawan, R.S. and Nanda, K.K.1981. Stimulatory effects of B-naphthol on rooting hypocotyl cuttings of *Impatiens balsamina* L. and the associated biochemical changes. **In Proc. Annual meeting of American Society of Plant Physiologists, Canada, Plant Physiology (Suppl).** pp.72.
67. Sethi, R. 1976. Effect of some monophenols on rooting hypocotyls of *Impatiens balsamina* L. **In Abstract of Proceedings 64th Ind. Sci.Congress(PartIII)**, pp.138.
68. Sethi, R. , Lata,P. and Nanda, K.K. 1976. Relationship of anatomical changes during cycloheximide caused promotion of rooting with isoperoxidases in hypocotyl cuttings of *Impatiens balsamina* L. **In Abstracts of Proceedings 64th Ind. Sci. Congress. (PartIV).** Pp183.

Thesis:

69. Rupa; 1979.'Studies on the effect of phenolic compounds on the rooting of hypocotyl cuttings of *Impatiens balsamina* L. and their mechanism of action.' **Ph.D.Thesis** submitted to P.U. Chandigarh
70. Rupa:1975. 'Physiological and biochemical effects of metabolic inhibitors of proteins and nucleic acids on rooting of hypocotyl cuttings of *Impatiens balsamina* L.'**M.Sc. Thesis.** Submitted to P.U. Chandigarh.

EXTENSION ACTIVITIES:

Helped organize Ganna melas, Kisan melas and Partehenium awareness week

NUMBER OF M.SC. AND PH. D STUDENTS GUIDED: NIL.