

| | |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name | Dr. HANS R. DHINGRA Professor of Botany |
| Residential Address | 55 N/I, 'Aashirwad' Model Town Hisar -125005 |
| Academic Qualifications | Ph.D. Botany |
| Phone numbers | 01662-289291 (O), 01662-287232 (R), 094163 97715 (M) |
| E.mail | hrdHINGRA@hau.ernet.in hrdHINGRA2001@yahoo.com |
| Field of Specialization | Plant Reproductive Biology Stress Physiology Plant Tissue Culture in relation to abiotic and biotic stresses |
| Member Professional Societies | 1. Indian Botanical Society (Life Member) 2. International Society of Plant Morphologists (Life Member) 3. Indian Society for Plant Physiology (Life Member) 4. Nanda Foundation Society (Life Member) |

Training Abroad

Underwent 3.5 months training (8-9-1998 to 23-12-1998) in 'Pollen Biotechnology For Crop Improvement' under the prudent guidance of Prof. David L. Mulcahy at the University of Massachusetts, Amherst USA which was held under the auspices of FAO.

Awards/ distinctions

- 1. V.D. Kashyap Gold Medal** for the best Ph.D. Research Work.
- 2. DAAD Fellowship** under 'Integrated Environmental Engineering programme, from 1-5-2004 to 31-7-2004 in the laboratory of Prof. Ursula .B. Priefer, RWTH, Aachen.
- 3. Member Editorial Board**, Indian Journal of Plant Physiology.

Teaching and Research Highlights:

Primarily involved in teaching General Botany to UG classes (B.Sc. Ag.), lower plants (Archegoniate), Plant Embryology, Economic Botany and Techniques in Botany to M.Sc. and Ph.D. students.

Reproductive biology of crop plants under saline conditions and heavy metal (HM) stress has been one of the major aspects of investigation to find out proximate causes of decreased yield in pulses and oilseeds. Foliar application of plant growth regulators like BAP and NAA successfully induced seed set of stylar ovules in chickpea. Induction of stress tolerance in crop plants through pollen selection has been possible but with limited success.

An integrated approach involving physiological parameters like membrane injury, chlorophyll stability index and *in vitro* pollen tube growth has been developed to screen large number of genotypes of crop plants for salinity and HM stress which is of pragmatic value for plant breeders.

Pre-conditioning stress treatments have been found to improve callogenic responses of recalcitrant plant species.

Salt stress tolerant callus lines and biochemical and molecular basis of salt tolerance in *Jatropha curcus* (Biodiesel plant) has been worked out.

Project Handled:

Studies on the effect of salinity on the reproductive functions of leguminous crops (1991-1994) funded by ICAR

Project Submitted:

Physiological and Molecular Approaches for *in vitro* Selection and Evaluation of Salinity Tolerant Lines in Wheat to DBT, New Delhi.

Number of M.Sc. and Ph.d. guided 17

Publications: Research Papers – 74, Book Chapters -07

Selected Research Papers:

1. **Dhingra, H R** and Varghese T M 1985. Effect of salt stress on viability, germination and endogenous levels of some metabolites and ions in maize (*Zea mays* L.) pollen. Ann. Bot.55:415-420
2. **Dhingra, H R** and Varghese, T.M 1985 Effect of growth regulators on the *in vitro* germination and tube growth of maize (*Zea mays* L.) pollen from plants raised under sodium chloride salinity. New Phytol. 100:563-569.
3. **Dhingra, H R** and Varghese, T M. 1985. Effect of phenolic compounds on the *in vitro* germination and tube growth of maize pollen from plants raised under sodium chloride salinity. Pl. Physiol. and Biochem.12:36-41

4. **Dhingra H R** and Varghese, T M 1986. Effect of NaCl salinity on the activities of amylase and invertase in *Zea mays* L. pollen. Ann. Bot.57:101-104.
5. Jyoti; **Dhingra, H R.** and Varghese, T M 1990. Explant culture studies in maize (*Zea mays* L.) raised under water deficit and waterlogged conditions. New Phytol. 116:325-330.
6. **Dhingra, H R** and Varghese, T M 1990. Effect of NaCl salinity on the activities of the oxidoreductases of maize pollen. Indian J. Pl. Physiol.33:268-271.
7. **Dhingra, H R** and Varghese, T M 1993. Effect of salinity on flowering and male reproductive functions of chickpea (*Cicer arietinum* L.) genotypes. Biol. Plant 35: 447-452.
8. **Dhingra, H R** and Varghese, T M 1993. Physiology and Biochemistry of Angiosperm Pollen under Salt Stress. In: Advances in Pollen Spore Research (Malik, C P Ed.)20:101-118
9. **Dhingra, H R** and Varghese, T M 1994. Ovule position and its relevance to seed development under saline conditions in chickpea. Indian J. Agric Sci.64: 400-402.
10. **Dhingra, H R**, Nirmal Kajal, Sureena Chhabra and Varghese, T M 1996. Flowering patterns and yield correlations in gram (*Cicer arietinum* L) under the influence of salinity and growth regulators. Indian J. Agric. Sci. 66:230-233
11. **Dhingra, H R and** Varghese, T M 1997. Flowering and sexual reproduction under salinity stress. In: Strategies for Improving Salt Tolerance in Higher Plants. (Jaiwal, P K, Singh R P and Anju Gulati ,Eds.). Oxford and IBH N.Delhi. pp 221-245.