

**Dr. Ram C. Yadav**  
**Senior Scientist/ Professor**

**Rockefeller Foundation Fellow, USA**

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**RESEARCH SPECIALIZATION:**

**Plant Biotechnology & Molecular Biology, Plant tissue culture,**

**Genetic engineering & Molecular Biology.**

**Member IPR Cell, CCS HAU, Hisar**

**President, Cultural Forum, College of Basic Sciences & Humanities,**

**CCS HAU, Hisar.**

**ACADEMIC RECORD:**

1.Ph.D. Genetics

2.M.Sc. Botany with Genetics as Major

3.B.Sc. Biology

4. Monbhuso Fellow, Japan

5. Rockefeller Foundation Post-Doctoral Fellow, USA

6. DBT Overseas Fellow

## **AWARDS/ RECOGNITION/ORGANIZATIONAL WORK:**

1. Merit Fellowship during Ph. D. programme at HAU Hisar
2. Awarded Japanese Govt. Fellowship in Plant Biotechnology at Tsukuba University, Japan from October 1989 to March 1991.
3. Awarded Rockefeller Foundation, USA Post- doctoral Fellowship in Molecular Biology at University of California, Davis. USA from Aug 1997 to December 1999.
4. Awarded Department of Biotechnology, Govt. of India overseas fellowship from October 2006 to April 2007.
5. **Certificate of Achievement** by Department of Plant Pathology, University of California, Davis, USA.
6. Recognition of rice molecular biology work in **CALIFORNIA AGRICULTURE** magazine.
7. **Organised Indo-US workshop on Intellectual property Rights (IPR) funded by** Michigan State University, East Lansing, USA from Oct.18-20, 2005.CCSHAU policy on IPR was framed. University and CCS HAU scientists participated.
8. Helped in setting up IPR cell at CCS HAU, Hisar.
9. Awarded Certificate of honour by Dept of Plant Breeding, CCS HAU, Hisar for bringing project from ICAR.
10. **Awarded Certificate of honour** by HAU Teachers Association for bringing projects from outside agencies in the year 2007.
- 11.**Organised (As a Coordinator) winter school on” Intellectual Property & its management in Agriculture** from Nov. 28- Dec. 18,200 sponsored by ICAR, N. Delhi.
- 12.**Organised (As a Coordinator) training on,” Capacity building for IP protection & Technology Licensing in Agriculture under Indo-US Agricultural Knowledge initiative Feb 11-13, 2008”**
13. **Organised (As a Coordinator) training –cum workshop** on IP & Technology management from may 19-21, 2008 sponsored by ICAR, N. Delhi.
- 14.**Organised (As a Coordinator) Brainstorming session on** University-Industry linkage on September 17, 2008 at Directorate of Human Resource Management, CCS Haryana Agril. University, Hisar sponsored by NRDC, N. Delhi.
15. **Organised State level workshop on,” Management & Monitoring of field trials of Genetically modified crops on January 12, 2009,**

at College of Basic Sciences & Humanities, CCS HAU, Hisar.sponsored by Biotech. Consortium India Ltd. DBT, N. Delhi.

**16.Organised (As Coordinator) Patent awareness workshop on March 7, 2009** at Directorate of Human Resource Management, CCS Haryana Agril. University, Hisar

### **Training acquired in India/abroad**

1. National workshop on “**Advances in Plant Genetics and gene Manipulation in higher plants**” sponsored by University Grant Commission in Department of Genetics, Osmania University, Hyderabad from March 1-20, 1988 (20 days)
2. Short Course on “**Applications of Biotechnology in Agriculture and Forestry**” sponsored by Indian Council of Agricultural Research at Department of Genetics, Haryana Agricultural University, Hisar from September 18-27, 1989 (10 days).
3. Attended a course on “**Recent techniques in Plant Biotechnology**” held at Dept. of Biotechnology, Indian Agricultural Research Institute, New Delhi from March 10-31,1992 (21 days).
- 4.Attended workshop on “**Bioinformatics, Functional Genomics and Proteomics**” organized by Biotechnology program, University of California, Davis, USA from June 21-25, 1999. (5 days)
5. Attended a training on “**Techniques in gene cloning, sequencing and plant transformation**” at Division of Biotechnology, Indian Institute of Horticultural Research, Hessaraghatta, Bangalore from 17<sup>th</sup> –27<sup>th</sup> November 2004.
6. Attended a course on ‘Skill development for use of computer programmes in agriculture’ at Directorate of Human Resource Management, CCS HAU, Hisar from July 19 to August 8, 2007.
7. Attended a training course on, Molecular Methodologies for assessing and applying Genetic Diversity in Crop Breeding’ at Centre of Excellence in Genomics, ICRISAT, Patancheru, Hyderabad from November 17 to 28, 2008

### **Member of scientific societies**

- i) Society for Biochemistry & Biotechnology
- ii) National Society of Plant Science
- iii) American Society of Plant Physiology.
- iv) Executive member of National Society of Plant Science.
- v) Indian Society of Oilseeds research
- vi) Fellow, Indian Society of Genetics and Plant Breeding.

### **Offices and assignments held in professional societies:**

1. President, Cultural Forum, College of Basic Sciences & Humanities
2. Member, Academic Council, HAU during Ph.D.
3. Life Member, Society for Biochemistry & Biotechnology

4. Executive member of National Society of Plant Science.
5. Member, Editorial board, Intl J. Plant Archives

### **TEACHING:**

1. Helped in developing the course curricula of the Department of Biotechnology & Molecular Biology.
2. Teaching UG and PG students.
3. Guiding/guided 12 M.Sc. and 3 Ph.D. students.

### **RESEARCH HIGHLIGHTS:**

- Micro-propagation in *Gladiolus*, *Prosopis cineraria*, Rohida (*Tecomella undulata*), Citrus and some important medicinal plants like Guggal, Stevia etc.
- Plant regeneration and *Agrobacterium*-mediated transformation established in Melon.
- High frequency plant regeneration in *Brassica* species.
- Genetic transformation protocol established in *Brassica juncea* using *Agrobacterium tumefaciens*.
- Development of transgenic plants for disease resistance using chitinase, osmotin and NPR1 genes.
- Plant regeneration and *Agrobacterium*-mediated transformation protocol developed in tomato.
- Plant regeneration and transformation in rice established.
- Development of transgenic rice for BLB resistance using different genes have been done.
- Cloning of *avrXa21* gene from *Xanthomonas oryzae* pv *oryzae*.
  - Four *Avr 21* gene sequences deposited on NCBI database, USA
- Development of Transgenic tomato for insect/pest resistance.
- Cloning of Myb Transcription factors from Brassica species which have role in early signaling for drought and salt tolerance.
- cDNA Myb sequences from *Brassica juncea* submitted to NCBI.
  - Interspecific hybridization between *Brassica juncea* and *Brassica alba* using Embryo rescue have been developed.

- Identification of molecular markers for high iron and high zinc in mungbean
- DarT markers for diversity analysis in pearl millet.

#### **PROJECTS BEING HANDLED:**

1. Development of transgenic Basmati rice through biotechnology. Rockefeller Foundation, USA 1995-98. **Co-Investigator**
2. “Engineering Indian Mustard (*Brassica juncea*) for *Alternaria* blight resistance NATP- ICAR (2002-2005)-**Principal Investigator**
3. Development of improved cotton genotypes for insect/pest resistance through biotechnology- NATP- ICAR (2002-2005) -**Co- PI**
4. Genetic enhancement and incorporation of *Alternaria* blight resistance through conventional and biotechnological Interventions in Indian mustard” – ICAR Network project 2005-2008- **Co-PI**
5. Cloning of novel transcription factors from brassica species which have role in early signaling for drought and salinity tolerance” DBT project 2005-2008.- **Principal Investigator.**
6. Use of Biotechnology in Agriculture including Plant tissue culture, Ministry of Agriculture, Govt of India. **2006. CO-PI**
7. Tailoring Food Sciences to Endogenous Patterns of Local Food Supply for Future Nutrition ( TELFUN) – Indo-Netherlands project. **Co-PI** 2008-2012

#### **IMPORTANT PUBLICATIONS:**

##### **A. Bulletins & Manuals**

##### **1. Practicals in Plant tissue Culture**

Neelam R. Yadav, R.K. Jain , **R. C. Yadav** & V.K. Chowdhury (2009)

##### **2. Intellectual property Rights in Agricultural Biotechnology**

**R. C. Yadav**, NR Yadav, RB Srivastava & RK Kashyap (2008)

### 3. Methods in Plant Genetic Engineering

Neelam R. Yadav, **R. C. Yadav** & KS Boora (2006)

#### B. Selected Papers (1996 onwards):

1. Renu Singh, **RC Yadav** & Neelam R. Yadav (2008) In vitro regeneration from mature female papaya plant cv. Selection 1. *Natl. J. Plant Improvement*. **10**(1): 1-4.
2. Richa, Sumedha, Manju, Narender, Shekhar, **RC Yadav** and NR Yadav (2008) TDZ induced multiple shoot formation in cultured explants of pigeonpea (*Cajanus cajan* L.) **10**: 17-19.
3. V. Saharan, **RC Yadav** and Z. Wiesman (2008) *Balanites aegyptica* (L.) Delile- a potential source of saponin. *Current Biotica*. 2 (1) 110-113.
4. Saroha Vandanna, Neelam R. Yadav and **R.C. Yadav** (2007) Effect of paclobutrazol, pluronic-F 68 and phloroglucinol on micropropagation of *Aloe vera*. *Acta Horticulturae*. 756: 147-157
5. Saroha Vandanna, Neelam R. Yadav, O.P. Yadav and **R.C. Yadav**(2007) Plant regeneration and somatic embryogenesis in cultured explants of bara Gokhru (*Pedaliium murex* L. ) An important plant in Indian Ayurvedic system of medicine. *Journal of Medicinal and Aromatic Plant Sciences*. JMAPS.29:212-215.
6. S. Mishra, **RC Yadav** NR Yadav and MK Rana (2007) A useful somaclonal variant obtained from in vitro hypocotyl culture of tomato (*L. esculentum*) cv. Hisar Arun. *Plant Archives*. 7: 81-83
7. Dheeraj Verma, **RC Yadav**, NR Yadav, VK Chowdhury & JB Chowdhury(2005) High frequency plant regeneration from cotyledon explants of Muskmelon (*Cucumis melo* L.) *Physiol. Mol. Biol. Plants*. 11(1): 135-139.
8. A. Kher, **R.C. Yadav**, N.R. Yadav & RD Bhutani (2005). Transient GUS expression studies in onion (*Allium cepa* L.) and garlic (*Allium sativum* L.) AKDENZ UNIVERSITASI ZIRAAT FAKULTESI. 18(3) 301-304.
9. Vinod Saharan, **RC Yadav**, NR Yadav & BP Chapagain (2004) High frequency of plant regeneration from dessicated calli of indica rice (*Oryza sativa* L.) *African Journal of Biotechnology*.3 (5): 256-259.
10. Vinod Saharan, **RC Yadav**, NR Yadav & K Ram(2004). Studies on improved Agrobacterium-mediated transformation in two indica rice( *Oryza sativa* L.) *African J. of Biotechnology*.3(11)572-575

11. RP Maurya, NR Godara, VS Beniwal and **RC Yadav**(2004) *In vitro* plant regeneration of *Rosa hybrida* L. Cv. Benjamin Paul through shoot tip explants. *Haryana J. Hort. Sci.* **33**(3&4): 229-231.
12. Silva FG, Shen Y, Dardick C, Burdman S, **Yadav RC**, Leon ALD and Ronald PC. (2004) Bacterial genes involved in type 1 secretion & sulfation are required to elicit the rice Xa21-mediated Innate immune response. *MPMI.* **17**: 593-601.
13. Singh D, Kumar R, **Yadav RC**, Thakral NK and Singh A(2003) Advances in white rust(*Albugo candida*) resistance in oilseed Brassica. *Brassica* **5**: 1-12.
14. 22. Vats Nidhi, **Yadav RC** and Yadav NR(2003) Transgenic Rice: Achievements and future challenges- A Review. *Crop Research* **26**: 198-207.
15. **Yadav RC**, Yadav NR and Sareen PK (2002) Interspecific hybridization in *Brassica* species: Pollen tube studies. *National J of Plant Sci.* **4**: 42-47.
16. Batra P, Yadav NR, Sindhu A, **Yadav RC**, Chowdhury VK and Chowdhury JB. (2002) Efficient protocol for *in vitro* direct plant regeneration in chickpea (*Cicer arietinum* L.) *Indian J. of Exptl. Biology.* **40**: 600-602.
17. **Yadav RC**, Yadav NR, Mishra R (2003) Genetic engineering for bacterial resistance in plants. In *Plant Genetic engineering Vol 1* (Singh RP & Jaiwal PK eds.) 87-104.
18. Bellaloui N, **Yadav RC**, Chern MS, Hu H, Gillen AM, Greve C, Dandekar AM, Ronald PC and Brown PP ((2003) Transgenically enhanced sorbitol synthesis facilitates phloem-boron mobility in rice. *Physiologia Plantarum.***117**:79-84.
19. Yadav NR, **Yadav RC**, Chowdhury VK and Chowdhury JB (2001) Explant and cultivar response to *in vitro* clonal propagation of female datepalm (*Phoenix dactylefera*) *Proc. 2<sup>nd</sup> International conf on Date Palms.*
20. Chern MS, Fitzgarld HA, **Yadav RC**, Canalas PE, Dong X, and Ronald PC (2001) Evidence for a disease resistance pathway in rice similar to the NPR1-mediated signaling pathway in *Arabidopsis*. *Plant J.* **27**: 101-113.
21. Sharma PK, Silva FG Da, **Yadav RC** and Y. Shen and Ronald PC ( 2001) Improvement of conjugation methods for *Xanthomonas oryzae* pv. *oryzae* strain DY89031. *IRRI Notes.* **25**: 24
22. Ilag LL, **Yadav RC**, Huang N, Ronald PC & Ausubel FM (2000). Isolation and characterization of disease resistance gene homologues from rice cultivar IR 64. *Gene.***255**: 245-255.
23. Yadav NR, Singh J, **Yadav RC**, Chowdhury VK and Chowdhury JB (1998). Somatic embryogenesis and plant regeneration from cell suspension cultures of *P. dactylifera* L.cv. Khadrawi. *Physiol. Mol. Biol. Plant* **4**: 135-138.

24. Chaudhary S, **Yadav RC**, Yadav NR and Chowdhury JB (1998). Micropropagation of *Prosopis cineraria* L. Druce. through seedling explant culture. *Physiol. Mol. Biol. Plants*. **4**: 25-28.
25. Arora N, Yadav NR, **Yadav RC** and Chowdhury JB (1998) Effect of some media additives on shoot regeneration in cultured hypocotyl explants of cauliflower. *Cruciferae Newsletter* # **20**: 31-32.
26. Arora N, Yadav NR, **Yadav RC** and Chowdhury JB (1997) Role of IAA and BAP on plant regeneration in cultured cotyledons of cauliflower. *Eucarpia Cruciferae Newsletter* #**19**: 47-48
27. **Yadav RC**, Konishi H., Kamada H. and Kikuchi F. (1997). *Agrobacterium tumefaciens*- mediated transformation of *Brassica carinata* (L.) Braun *Eucarpia Cruciferae Newsletter* # **19**: 61-62.
28. Gaur A, Chowdhury VK, **Yadav RC** and Chowdhury JB (1997) *Agrobacterium* mediated transformation in Indian mustard of *Brassica juncea* L. (Coss and Czern.) *Eucarpia Cruciferae Newsletter* # **19**: 59-60.
29. Chowdhury JB, Yadav NR, **Yadav RC** and Jain RK (1997) Agricultural Biotechnology : An environmental perspective. *Mohenjodaro* **1**: 50-52
30. Gaur A, Chowdhury VK, **Yadav RC** and Chowdhury JB (1996) High frequency plant regeneration from seedling explants of *Brassica juncea* (L.) Coss and Czern *Cruciferae Newsletter* # **18**: 28-29.