

Dr. Priya Ranjan KUMAR

2. Date and Place of birth : 2nd Jan.1942, Varanasi, UP
3. Address : 203, DDA SFS FLAT
Sector- 3, Pocket- 2
Dwarka New Delhi – 110078
Tel.: 91- 011-25075168,
Mobile: 91- 9312025273, 91- 9313456040
Fax : 91-7532-304312
E-mail: priya_ranjankumar @yahoo.com .

4. Academic Qualifications

Degree	University / Institution	Year
B.Sc (Agriculture)	Banaras Hindu University	1963
M.Sc (Ag.) Genetics & Pl. Breeding	Banaras Hindu University	1965
Masters' Dissertation	“Effect of gamma radiation on <i>Brassica campestris</i> L. and <i>Brassica juncea</i> (L). Czern. and Coss	
Ph.D#	Banaras Hindu University	1969
Post Doctoral Research	Tohoku University, Sendai, Japan	1975-77
Additional Qualifications		
German Language (Diploma)	Banaras Hindu University	1962-63
Japanese Language Beginners' Course	Osaka Univeristy of Foreign Studies, Japan	1975

Ph.D. Thesis on “*Studies on the effects of ionizing radiation on Brown Sarson*” was rated as pioneering work by the German Examiner

5. Positions held:

Organization	Period	Position
Banaras Hindu University, Varanasi	1966-1970	Lecturer Agricultural Botany/Genetics and Plant Breeding
Haryana Agricultural University, Hisar Farming Research	1971-1980	Asstt. Oilseeds Botanist/Scientist In charge, Dry Centre, Bawal / Asstt. Professor of Genetics
Haryana Agricultural University, Hisar	1980-1981	Dy. Director (Crops)

Indian Council of Agricultural Research New Delhi (Rapeseed -Mustard)	1981-1990	Project Coordinator
Rajendra Agricultural University, Pusa, Bihar	1990-1992	Director of Research
National Research Centre on Rapeseed- Mustard, (ICAR),Bharatpur	1993-1995	Director (Officiating)
ICAR Research Complex, Barapani	1995-1996 (Oct-Aug 96)	Principal Scientist (Plant Breeding)
National Research Centre on Rapeseed-Mustard, Bharatpur	1996-2001	Director
National Bureau of Plant Genetic Resources, Pusa, New Delhi	2001-2002	Principal Scientist
Indian Council of Agricultural Research, New Delhi	2002	Assistant Director General (Policy & Perspective Planning)
MGRMNET, (Agriculture New Delhi April-October Technology)	2003	Director
K.S.OILS LTD., Morena (M.P)	2008 Continuing	Advisor

6. Areas of Expertise:

Plant Breeding & Genetics Oilseed Crops, Research Systems & Project Management/Planning:
Applied Research in Crop Production, Farming Systems & Research Planning

7. Research Experience: 38 years (1963-2001)

- Exclusively worked on improvement of oilseed crops.

8. Teaching Experience: 14 years (1966-1970 and 1977-86)

- **Taught** Genetics, Plant Breeding, Crop Botany, Cytogenetics and Evolution subjects to post-graduate and under graduate students at the Banaras Hindu University and the CCS Haryana Agricultural University and also **supervised** the research work of graduate students in Genetics and Plant breeding at the Banaras Hindu University as well as at the CCS Haryana Agricultural University.

9. Organization Experience :

International

- Planned, formulated and coordinated / monitored bilateral collaborative research projects between India and Bangladesh; Sweden; Canada; Pakistan ; Sri Lanka, Nepal and Bhutan.

National

- Key figure for rapeseed-mustard research and development programmes of the country from 1981 to 2001.
- Spearheaded Micro-Mission-1 of the Technology Mission on Oilseeds (launched by Govt. of India due to continued huge import of edible oils) since its inception in 1986.
- As Director Research of the Rajendra Agricultural University, Pusa, Bihar (1990-1992), gave a new direction to research by planning, prioritizing and preparing time bound operational research plan for all the eight faculties. Got released the long pending 23 high yielding varieties by the State Variety Release Committee, Patna, Bihar.
- As founder Director of the National Research Centre on Rapeseed-Mustard, ICAR, Bharatpur established the NRC by constructing new building with modern laboratories and related infrastructure. Created ARIS Cell, with V.SAT and LAN facilities, and developed own Website for the National Research Centre, Bharatpur; established Gene Bank for short term storage of rapeseed-mustard genetic resources, set-up library, museum and a well laid out farm with modern irrigation system.
 - Prepared **VISION -2020: A Perspective Plan** for Rapeseed-Mustard Research of the country.

10.1. Significant Contributions to Science and /or Technology Development

- **Dr P.R.Kumar.** carried out reseach excluively on Rapeseed-Mustard since beginning,i.e.,1963 and **made an outstanding contribution.for the growth of oilseed Brassica in India.**
- The most recent (2008) is the development of **First Hybrid of Indian Mustard**, NRCHB-506, at national level, giving upto 3.2 t/ha in 11 yield evaluation trials across Punjab,Haryana,Gujarat,UP and Rajasthan States during last nine years. Besides, showing 26 and 20 per cent oil yield superiority over existing varieties.**This hybrid will be instrumental in productivity break through in the country.**
- In mid seventies, his work led to the development and release of *Eruca sativa*, variety T-27. This variety is still the most popular variety and is the National Check in the All India Coordinated Research Project on Rapeseed-Mustard (AICRPRM). Rajat (PCR-7), a non shattering variety of *B.juncea* possessing stem stiffness, is another commercialized variety popular with farmers of Rajasthan and Maharashtra States. This variety is again the Zonal Check in the AICRPRM since 1993. The **first frost resistant Brown Sarson, B.rapa, variety KBS – 3 (FR 80) developed using Japanese variety Yukina; Saag (*Brassica rapa*)** developed from selection of exotic *rapa* , is again still a very popular variety in Haryana. . Identified stable fertility restorer *mori* gene utilizing *mori* CMS system as Project Leader of the Hybrid Project. This paved the way for hybrid development in *B.juncea*. Experimental hybrids are now in trials.

- Instrumental in introducing, evaluating and **releasing the first Double Low (Canola) Hybrid , Hyola 401 of *B. napus* in 1997 at national level.** This hybrid is now predominant with Gobhi Sarson (*napus*) growers of Punjab, Himachal Pradesh, Jammu, Haryana and Rajasthan States.
- Pioneering research work carried out on mutations in Brown Sarson, demonstrated excellent use of probit method for LD₅₀ and non-orthogonal techniques. These techniques are being widely used in mutation studies.
- Identified a wild species, *Conringia orientalis* as potential new oilseed possessing nutritionally superior oil quality. This is being utilized for further improvement of agronomic traits and also as resource
- Prepared descriptors for characterizing the germplasm of *B. juncea* and *B. campestris* (Brown Sarson, Yellow Sarson and Toria). Assembled/ collected and evaluated nearly 19000 germplasm of rapeseed-mustard during 1981-2001 and Catalogue prepared. The promising donors identified (< 75) are being extensively utilized in breeding programmes under All India Coordinated Research network at AICRP Centres. Some of them are released as varieties for different ecologies in different states.
- Identified, EC 287711 from the Swedish-Indian F2 segregating material and developed **the first high yielding Double Low *B. juncea***

B. New knowledge/initiatives:

- Discovered positioning of low erucic acid plants on the top of phylogenetic tree of Schulz System of Classification of Angiosperms. This assumes significance in the context that efforts are being made at global level to search for new oilseeds with nutritionally improved quality. (Gamma Field Symposia 15:17-32, 1976).
- As **new initiatives**, rapeseed –mustard cultivation in :
 - i) Higher altitude as an alternative crop to buck wheat/field pea/potato.
 - ii) Non-traditional areas of Maharashtra, Andhra Pradesh Karnataka and Tamil Nadu States. Average yield obtained 1.5 q/ha and the highest (26 q/ha) in demonstrations at farmer's field.
 - iii) Rice- fallow cropping system under late sown conditions.
 - iv) As bonus crop with lathyrus in paira cropping.

C. Processes:

With trials and demonstrations conducted in different parts of the country for cultivation of rapeseed-mustard at higher altitude, in non-traditional areas, rice-fallows and late sown conditions, etc. (**as new initiatives**), it was realized that at least 1.2 million hectares in the country can be brought under rapeseed-mustard. For this purpose, **action plan for potential districts**, for different situations prepared.

D. Product: Varieties

- **13 Oilseeds: Indian Mustard** (8) - Rajat (PCR 7); PCR 9301; PCR 3 (long siliqua, late sown); Maya (high oil content), PCR-10 (late sown), NRCR 96-4 and NRCR 62-1. The most recent is the development of First Hybrid of Indian Mustard, NRCHB-506 , giving upto 3.2 t/ha in 11 yield evaluation trials across

Punjab, Haryana, Gujarat, UP and Rajasthan States during last nine years. Besides, showing 26 and 20 per cent oil yield superiority over existing varieties..

- **Brown Sarson** (4)- KBS-3 (FR80:Frost-resistant); PK-65(34-65:Compact plant type for intercropping, BSH-40 (Bold seeded, and Variety Saag
- **Taramira (Rocket)**: (1) - T-27
- **58 Oilseeds** released as All India Research Coordinator (1981-97). Most important amongst them are: *B. juncea*: the **first white rust tolerant Jawahar Mustard; moderately tolerant Alternaria blight variety Saurabh; salt tolerant Narendra rai and CS-52, and drought and frost tolerant, RH-781, and the First Double Zero, B. napus hybrid, Hyola -401.**
- **Product: Seed cum Fertilizer Drill**

Developed manually operated seed cum fertilizer drill in collaboration with Agri. Engg. Deptt., HAU, Hisar and later animal drawn seed-cum-fertilizer drill in collaboration with Central Institute of Agricultural Engineering, Bhopal . The seed drill is saving time and money of farmers, spent by them earlier, in undertaking manual thinning of 15-21 days young plants. The product has been commercialized by CIAE, Bhopal

E. Technique and Technologies:

- A simple and rapid analytical technique developed for simultaneous estimation of oil and fatty acids, requires small quantity of seed, and reduces the time from 30/20 minutes to 10 minutes and economical. (Yukagaku – J. Japan Oil Chem. Soc. 26:41-42, 1977).
- Application of Azotobacter in mustard reduced disease incidence, saved chemical fertilizer and enhanced yield. (**awarded**).
- Economically viable agro-production and protection technologies for specific situations of different states, developed as Management Scientist.

10.2. Impact on Agricultural Production:

Gap analysis, reorientation of entire research programmes on rapeseed-mustard in 1981, after assuming the responsibility as Project Coordinator, exploitation of genetic resources, development, release and dissemination of improved varieties, agro-production and protection technologies, preparation of technology bulletins for 12 States and video film on production technology(dubbed in 14 languages by the Govt. of India), integration of research and development agencies and bringing them on one platform (the so called A to Z mission), constant monitoring, evaluation and replanning wherever required, resulted in *remarkable increase* in rapeseed-mustard production and productivity. **The production, which was hovering around 2.68 million tonnes with productivity level of 650 kg/ha until 1985-86, increased to 6.10 million tonnes in 1995-96 with productivity increasing to more than 940 kg/ha.** The production and productivity, increased further in 1996-97 to 6.66 million tonnes and 1022 kg/ha, respectively. **The import bill of vegetable oils which was more than 2 million tonnes in mid eighties, declined to 0.1 million tonnes in nineties. All these developments enabled the country to witness Yellow Revolution in nineties.**

11. Peer Recognition:

- **United Nations Assignment: IAEA Consultant** (May-July, 1981) in Bangladesh. Prepared a blue print for Oilseed Brassica Research for the Institute of Nuclear Agriculture, Mymensing, Bangladesh.
- **Represented the country as Leader of Indian Delegation to France, Sweden and Finland (1983)**; Member of Delegation to: Sweden (1985,1987&1989);Nepal (1986);Canada (1987&1998) ; Poland (1987& 2001); Pakistan (1988);Germany (1998& 2000); Australia (1999) ; China (1990), Iraq (2000), Denmark (2003) and to Canada (2005).

12. Invitation / Participation in National and International Conferences :

- Presented a large number of invited, lead research papers and country's papers, *Chaired / Co-chaired International and National Conferences, Seminars and Symposia. Some of the important amongst them are:

Sendai, Japan (1977); Mymensing, Bangladesh (1981); ***Paris,France (1983)**; ***Hyderabad, India (1984)**; Kathmandu, Nepal (1986); Poznan, Poland (1987); Islamabad, Pakistan (1988); Stockholm, Sweden (1989); ***Shanghai, China (1990)**,Canberra,Australia(1999);Hamburg,Germany(2000),Poznan,Poland(2001); *Copenhagen,Denmark(2003), Brisbane,Australia(2004),*New Delhi, India (2005), Winnipeg,Canada (2005), *New Delhi (2006) and Wuhan, **China (2007)** (***Chaired / Co-chaired**)

13. Position in Professional Societies:

- Member:** Groupe Consulatif International de Recherches sur le Colza
- Vice-President:** Indian Society of Oilseeds Research
- Fellow:** Indian Society of Oilseeds Research
- Fellow:** Indian Society of Genetics & Plant Breeding
- Member:** Oil Technol Association of India
- Councillor:** Indian Society of Plant Genetic Resources

14. *Publications:

(i) Research Papers (Evaluated by Referees)	55
(ii) Articles Published in Seminars, Symposia Conference Volumes	28
(iii) Papers presented in Seminars, Symposia, Conference	124
(iv) Articles Published as News Letters (in journals)	12
(v) Technical Reports / Status Papers	116
(vi) Books	07
(vii) Chapters in Books	15
(viii) Technical Bulletins	30
(ix) Popular Articles	11
(x) Sarson News Letter and the Vision of the Director 08 (Bi-annual Publication)	
----- Total	406

Details to be submitted on intimation

. 15. Referees:

- Dr.Mangala Rai, Secretary, Department of Agricultural Research and Education, Govt. of India, and Director General, Indian Council of Agricultural Research, Krishi Bhawan, NewDelh E.mail: mrai.icardelhi@nic.in/m.raai.icar@org.in
- Dr. Panjab Singh, Vice Chancellor, Banaras Hindu University, Varanasi- 5 (UP). Former Secretary, Department of Agricultural Research and Education, Govt. of India and Director General , Indian Council of Agricultural Research.E.mail: vc_bhu@sify.com
- Dr. M. V. Rao, Ex. Special Director General, Indian Council of Agricultural Research, H. NO. 6-1-280/3, Opposite Padma Rao Park, Padma Rao Nagar, Secunderabad - 500 025.E.mail: btuipe@hd.2.dot.net.in
- Dr. C.P.S. Yadav, Director General, U.P. Council of Agricultural Research, KisanM.Bhawan, 8thFloor, VibhutiKhand, Lucknow, U.P. E.mail: upcar@sancharnet.in

(P.R. KUMAR)