



National Bureau of Fish Genetic Resources

(Indian Council of Agricultural Research)

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ISO 9001:2008

Name Dr. Basdeo Kushwaha
Designation Principal Scientist
Date of birth 01.02.1964
Professional experience above 19 years
Qualification (PG and above) M.Sc. (Anim. Sci.), Ph.D. (Animal Breeding)



Current area of Research Fish cytogenetics, Molecular Biology & Genotoxicity assessment of water pollutants

Area of Research Expertise

- Cytogenetic characterization of fishes.
- Chromosome banding studies using C-, G- and Ag-NOR banding techniques in various fish species.
- Genotoxic studies in fishes using comet assay, micronuclei test and chromosomal aberrations.
- Physical mapping/ localization of genes using molecular cytogenetic techniques Fluorescent *in situ* hybridization in fishes
- Genetic diversity studies in fishes.

Awards/ Recognitions (only National and International) -

Publication (no.)

- **Research papers** 38
- **Reviews**
- **Books**
- **Book Chapters** 1
- **Popular articles** 7
- **Others**

Important Research Publications

Kushwaha B, Nagpure N S, Srivastava S K and Ponniah A G (2002). Cytogenetic studies in two geographical stocks of *Heteropneustes fossilis* (Bloch). *The Indian journal of Animal Sciences* **72 (4)**: 348-350.

Nagpure N S, **Kushwaha B**, Srivastava, S K, Halder A and Ponniah A G (2003). Comparative chromosome painting in fish using human sex chromosome probes. *Indian J. of Fisheries* **50 (1)**: 103-106.

- Kushwaha B**, Nagpure N S, Srivastava S K, Kumar R and Verma M S (2003). Variation of micronuclei in peripheral blood cells of *Channa punctatus*. *The Indian Journal of Animal Sciences* **73 (10)**:1192-1193.
- Nagpure N S, Kumar R, **Kushwaha B**, Srivastava S K, Singh P J, and Lakra W S (2006) Karyological studies of fish species *Garra surendranathani* and *Barilius gatensis* from Western Ghats of India. *The Nucleus* **49 (3)** : 171-175
- Nagpure N S, Kumar R, Srivastava S K, **Kushwaha B**, Gopalakrishnan A, and Basheer V S (2006) Cytogenetic characterization of two marine ornamental fishes *Chaetodone collare* and *Stegastes insularis* . *J Mar. Biol Ass. India*, **48 (2)**: 267-269.
- Kushwaha B**, Singh H, Singh A, and Singh I J (2007). Production of inter-specific hybrids of *Labeo dyocheilus* (McClelland) and *L. rohita* (Hamilton) Pisces, Cyprinidae. *Indian Journal of Animal Sciences*. **77(7)**: 638-641.
- Kumar R, Singh P J, Nagpure N S, **Kushwaha B** Srivastava S K. and Lakra W S (2007). A non-invasive technique for rapid extraction of DNA from fish scales. *Indian Journal of Experimental Biology*, Vol. **45** (November): 992-997.
- Ali D, Nagpure N S, Kumar S, Kumar R, **Kushwaha B** (2008). Genotoxicity assessment of acute exposure of chlorpyrifos to freshwater fish *Channa punctatus* (Bloch) using micronucleus assay and alkaline single-cell gel electrophoresis. *Chemosphere*, **71**: 1823-1831.
- Kushwaha B**, Kumar R, Nagpure N S, Behera B K and Lakra W S (2008). Chromosome banding studies in two freshwater gouramies from North eastern India. *The Nucleus*, **51(1, 2)**: 61-72.
- Kushwaha B**, Yadav S K, Kumar R, Nagpure N S, Srivastava S K and Lakra W S (2009). Characterization of Freshwater Catfishes *Rita Rita* (Hamilton, 1822) and *Sperata Seenghala* (Sykes, 1839) using Fluorescent Chromosome Banding. *The Nucleus*, **51(3)**: 267-277.
- Mani I, Kumar R, Singh M, **Kushwaha B**, Nagpure N, Srivastava P, Murmu K, Rao DS K and Lakra W S (2009). Karyotypic diversity and evolution of seven mahseer species (Cyprinidae) from India. *Journal of Fish Biology*, **75**: 1079–1091.
- Singh M, Kumar R, Nagpure N S, **Kushwaha B**, Mani I, Lakra WS (2009). Extensive NOR site polymorphism in geographically isolated populations of Golden mahseer, *Tor putitora*. *Genome* **52(9)**: 783-789.
- Singh M, Kumar R, Nagpure N S, **Kushwaha B**, Gond I and Lakra WS (2009). Chromosomal localization of 18S and 5S rDNA using FISH in the genus *Tor* (Pisces, Cyprinidae). *Genetica*, **137**: 245–252.
- Singh M, Kumar R, Nagpure N S, **Kushwaha B**, Mani I, Chauhan U K and Lakra W S (2009). Population distribution of 45S and 5S rDNA in golden mahseer, *Tor putitora*: population-specific FISH marker. *J. Genet.* **88**: 315–320.
- Swaminathan T R, Lakra W S, Gopalakrishnan A, Basheer V S, **Kushwaha B**, Sjeela K A (2010). Development and characterization of new epithelial cell line PSF frpm caudal fin of Green chromide *Etroplus suratensis* (Bloch,1790) *In Vitro Cell. Dev. Biol.-Animal* **46**:647–656