

VISHAL KUMAR AGRAWAL, Ph.D.

Plant Breeder | Watermelon R&D Expert | Hybrid & Trait Innovation Specialist | Global Breeding Portfolio Delivery

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PROFILE SUMMARY

Strategic Plant Breeder and Agri-Tech Innovator with 12 years of global experience spanning hybrid development, breeding program management, and market-driven R&D for major crops. Decisive leader and keen learner with proven expertise in translating scientific innovation into commercial impact. Breeder-of-record for six commercial watermelon hybrids, spearheading programs that expanded market share and delivered high-impact, high-yield products across India, Bangladesh, and East Africa. Strong command of ideotype breeding, germplasm enhancement, multi-location trials, marker-aided selection (MAS), and digital breeding tools, with deep interest in strategically applying predictive breeding strategies (genomic selections), high-throughput phenotyping, and AI integration to accelerate genetic gain. Proven track record in cross-functional collaboration (PD, seed production, QA, sales, regulatory), operational efficiency, and cost reduction. Driven by a vision to harness advanced plant genetics and precision farming approaches to empower smallholder farmers globally and ensure nutritional security. Open to global relocation and new challenges, leveraging transferable skills and scholar's mindset to drive immediate impact across crops and geographies.

CORE COMPETENCIES & TECHNICAL EXPERTISE

Hybrid Development | Breeding Program Management | Vegetable Breeding | Trial Design & Analysis (R, Excel, Phenome) | MAS & Genomics | Ideotype & Germplasm Enhancement | Digital Breeding Tools | Data Visualization | Generative AI Applications | Cross-Functional Collaboration | Market-Driven Product Advancement | Global Market Insight | Cost Optimization | Crop Agronomy | Stakeholder Alignment | Team Leadership | Transferable Skills across Crops & Global Markets

GLOBAL BREEDING IMPACT

- Commercialized 6 hybrids, expanding East-West Seed India watermelon market share from <1% to ~5%.
- Advanced 2 launch-ready watermelon hybrids (>20% yield gain) for dominant market segments in Asia & Africa.
- Achieved >10% consistent annual operating cost reduction in breeding programs.
- Successfully aligned breeding with market needs through collaboration across India, SEA, Africa and Latin America.

PROFESSIONAL EXPERIENCE & KEY ACHIEVEMENTS

East-West Seeds (India) Pvt. Ltd.

Aurangabad, India | Sep 2019 – Jun 2025

Senior Associate Breeder – Watermelon (Global Role)

May 2020 – Jun 2025

- Managed a **15–18-acre, three-cycle/year** breeding program, leading end-to-end commercial hybrid development
- Increased EWS's watermelon seed market share in India from <1% to ~5% (2020–2025) by commercializing six hybrids and creating a robust pipeline, directly addressing a **\$50M cross-region market** (India, Bangladesh & E. Africa).
- Developed and advanced 2 launch-ready hybrids with **20% higher yield**, superior eating and shipping quality.
- Delivered hybrids tailored to >75% of the Indian market segment (**Icebox Sugar Baby Oblong**) and >95% segment fit in Bangladesh/East Africa (**Family Striped Oblong**).
- Initiated **ideotype breeding**, developing novel inbred lines suitable for high-density planting (**+50% plant population**) and smallholder adoption, using conventional and **MAS** approaches.
- **Optimized the operational costs (>10% annual savings)** while maintaining research excellence & pipeline delivery.
- Orchestrated multinational and **cross-functional collaboration** (e.g., with Thailand, Philippines), **implemented digital breeding and phenotypic data management systems**, and **mentored** diverse technical teams.
- Conducted **strategic market visits in India, Bangladesh, Thailand, and the Philippines** to align breeding objectives with **farmer preferences, local adaptation, and commercial fit**.
- Strengthened regional alignment through **annual working visits and collaborative hybrid evaluation with Thailand**.
- Actively contributed to **pre-breeding programmes** in collaboration with teams in the Philippines.

Associate Breeder – Okra

Sep 2019 – Apr 2020

- Managed yield and disease-resistance trials; advanced hybrids in collaboration with cross-functional teams.
- Gathered field and market insights to refine breeding goals for smallholder adoption and evolving market demands.

Breeder – Marigold, Country Crop Team (Additional Assignment)

Apr 2022 – Mar 2023

- Appointed R&D representative for India Marigold Country Crop Team; **coordinated product trials and advancement** between commercial, seed production, and Thai breeding teams.

ICAR – Indian Institute of Vegetable Research (IIVR)**Research Associate – Tomato (NICRA Project)**

Varanasi, India | Sep 2017 – Sep 2019

- Coordinated climate-resilient tomato product development (abiotic stress tolerance) using conventional breeding, molecular methods, and interspecific grafting to deliver robust, adaptable varieties.
- Managed end-to-end project lifecycle—including operational planning, resource allocation, and annual budget oversight (~ ₹40 lakhs)—while centrally coordinating a team of 8–10 research staff under direct supervision of the PI and Co-PIs.
- Led biochemical analysis, biotech lab work (genotyping), data analysis, and grafting programme, generating actionable insights for breeding advancement.
- Developed mapping populations for GBS (Genotyping-by-Sequencing) targeting heat stress tolerance, and advanced two novel tomato hybrids to field deployment (released post-tenure).
- Prepared detailed technical reports & presentations and contributed to scientific documentations.

Namdhari Seeds Pvt. Ltd.**Assistant Breeder – Cabbage**

Sirsa/Kullu, India | Jun 2016 – Mar 2017

- Led evaluations, maintenance and advancement of germplasm for suitability through comprehensive field testing and phenotyping; performed selections, planned crossing programme and supported advancements in breeding trials.

Monsanto Holdings Pvt. Ltd. (now part of Bayer Crop Science)**Research Associate – Cotton Breeding**

Gandhinagar/Udaipur, India | May 2014 – May 2016

- Independently managed end-to-end breeding operations for a 40-acre cotton line development breeding program.
- Led in-field selections for senior breeder, ensuring robust genetic advancement and trait development.
- Drove key projects on photoperiod response to flowering, disease and sucking pest resistance, mapping population development and high-density cotton ideotype development.
- Leveraged advanced digital breeding tools for efficient data management and decision-making; trained technical staff, established breeding best practices and safety protocols (ESH policies) among technical teams.

Nuziveedu Seeds Pvt. Ltd.**Management Trainee – Millet Breeding**

Hyderabad, India | Jun 2008 – Mar 2009

- Supported germplasm maintenance, breeding, field trials, and data analysis for sorghum and pearl millet programs.
- Executed foundational breeding tasks, report writing, and crop management, gaining comprehensive exposure to seed industry practices.

EDUCATION

- **Ph.D. Genetics & Plant Breeding** – Banaras Hindu University (BHU), Varanasi, IN | **GPA 8.22/10** | 2009 – 2014
- **M.Sc. (Ag.) Genetics & Plant Breeding** – BHU | **GPA 8.65/10** | 2006 – 2008
- **B.Sc. (Agriculture)** – BHU | **GPA 8.15/10** | 2002 – 2006

PUBLICATIONS

11 peer reviewed publications & 2 theses. ([Full list available here](#))

CERTIFICATIONS & CONTINUOUS LEARNING

- **Council for Scientific and Industrial Research (CSIR)** – NET (JRF) in Life Science | 2010
 - 30+ LinkedIn Learning certifications on **technical, organizational, interpersonal & leadership skills** | 2021 – 2025
 - Participated in **EWS's Advanced Plant Breeding (APB) Program** (completed four of six modules) | 2023 – 2025
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LANGUAGES

- English (Fluent/Professional Working Proficiency)
- Hindi (Native/Bilingual Proficiency)