VISHAL KUMAR AGRAWAL, Ph.D.

Plant Breeder | Agri-Tech Innovator | Genetics & Product Innovation
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PROFILE SUMMARY

Strategic Breeding Professional and Agri-Tech Innovator with a Ph.D. in Genetics & Plant Breeding and 12 years of global experience driving hybrid innovation across maize, millets, cotton, and vegetables. I integrate genetics, digital tools, and market insight to build breeding programs that are data-driven, climate-resilient, and commercially scalable. Known for translating research into impact—developing high-performing hybrids, leading cross-functional teams, and shaping next-generation breeding strategies that deliver value across markets and stakeholders.

CORE COMPETENCIES & TECHNICAL EXPERTISE

Research Program Management | Multi-Location Trial Design & Analysis (R, Excel, Phenome) | Ideotype Development & Germplasm Enhancement | Marker-Assisted Selection (MAS) & Genomics | Climate-Resilient Breeding Strategies | Agronomic Best Practices | Data-Driven & AI-Enabled Decision Support | Digital Breeding Tools & Data Visualization | Market-Driven Product Advancement | Global Market Insight | Cost & Resource Optimization | Team Leadership | Cross-Functional Collaboration | Stakeholder Training & Knowledge Transfer | Transferable Skills across Crops & Global Markets

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

- Released **six commercial watermelon hybrids** as breeder-of-record, expanding EWS's watermelon **seed market share in India from less than 1% to ~5% (2020—2025)** and creating a robust pipeline of market-ready hybrids **addressing a $50M multi-regional market** (S&SE Asia, East Africa and Latin America).
- Advanced **breeding efficiency** through data-driven selection and digital phenotyping systems, achieving **15–20% faster product advancement** and over **10% annual cost savings** while maintaining research rigor.
- Initiated **high-density (2x to normal) breeding strategies** to enhance smallholder profitability; **established a research pipeline for seedless and speciality** (yellow/orange/white flesh) watermelons in India.
- Provided **pre-breeding support** and field validation for discovery projects, including **TILLinG** and **Pan-Genome** initiatives, contributing to trait discovery and germplasm enrichment for future product pipelines.
- Orchestrated **cross-functional collaboration** across breeding, product development, seed production, and marketing to ensure **alignment between genetic improvement and commercial strategy**.
- Led and **mentored diverse technical teams** (3–4 technicians, 12–18 seasonal staff), fostering a performance-driven and collaborative R&D environment.

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

- Led the tomato breeding component under the National Innovation in Climate Resilient Agriculture (NICRA) Project, **targeting resilience to heat, drought, and transient flooding stress** through hybrid and inbred line development.
- **Managed a multidisciplinary team of 8–10** research and technical staff, overseeing field experimentation, phenotyping, data management, and reporting activities.
- Oversaw an **operational budget of approximately ₹40 lakh annually**, optimizing resource use across manpower, consumables, and field operations to ensure smooth project execution.
- Identified **two heat-tolerant hybrids that were later released from the program (2023),** demonstrating continuity and lasting genetic impact of early-phase selections.
- Developed mapping populations and initiated marker identification for heat tolerance, **strengthening integration of molecular tools** into trait improvement.
- **Directed grafting-based studies** (with eggplant rootstock) to assess submergence and root-zone stress tolerance.
- Supported the Principal Investigator in coordinating **technical reviews, presentations, and reports** for ICAR and NICRA steering committees.
- Built strong linkages between phenotyping, data analytics, and program delivery—laying the **foundation for scalable, data-driven stress breeding in vegetables**.

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

- 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 and crop management, gaining comprehensive exposure to seed industry.

EDUCATION

- **Ph.D. Genetics & Plant Breeding** – Banaras Hindu University (**BHU**), Varanasi, IN | **GPA 8.22/10** | 2009 — 2014
  - ✓ Thesis: *Genetics of yield and quality traits in Quality Protein Maize (QPM)*
- **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
- 90+ LinkedIn Learning courses and certifications on **technical, organizational, interpersonal & leadership skills**
- Participated in **EWS's Advanced Plant Breeding (APB) Program** (completed four of six modules) | 2023 — 2025

LANGUAGES

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