



भा.कृ.अनु.प. – राष्ट्रीय अनार अनुसंधान केन्द्र

ICAR–National Research Centre on Pomegranate

NH-65, Pune–Solapur Highway, Kegaon, Solapur – 413 255, Maharashtra, India

INDIAN COUNCIL OF AGRICULTURAL RESEARCH · DEPARTMENT OF AGRICULTURAL RESEARCH & EDUCATION

ANNUAL HIGHLIGHT 2025

वार्षिक झलक २०२५

Twenty Years of Pomegranate Research for the Nation · Highlights of 2025



Natural farming unit



Protected cultivation



Biocontrol laboratory



Pomegranate juice



Genetic
Resources



Natural &
Protected Farming



Bio-based
Protection



Value
Addition



Farmer
Outreach



औषधिगुणसम्पन्नं दाडिमं सुवर्णफलम्

"The pomegranate is a golden fruit endowed with medicinal properties."



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2025

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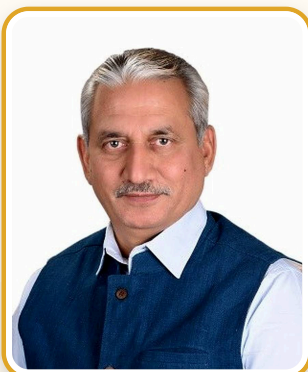
ICAR–National Research Centre on Pomegranate

Kegaon, Solapur – 413 255, Maharashtra

ANNUAL HIGHLIGHT 2025

DIRECTOR'S DESK

PREFACE · MANDATE · VISION · MISSION



Dr Rajiv Arvind Marathe
Director, ICAR-NRCP, Solapur

“

ICAR–National Research Centre on Pomegranate proudly **completed twenty glorious years on 25 September 2025**. Through consistent research, technology development and stakeholder engagement, the Centre has contributed to the growth in area, production and productivity of pomegranate across the country.

In 2025 the Centre achieved several landmarks: registration of the **first cold-desert pomegranate variety from Ladakh** (farmer Shri Kacho Vilayat, Sanjak, Kargil) under PPV&FR Act, **peel-fortified fibre-rich cookies**, **two registered trademarks**, and commercialisation of two microbial formulations — ‘**Endovita**’ for bacterial diseases and ‘**Rhizoshield**’ for fungal diseases. Under RKVY the Centre guided **over 1,000 farmers**.

With dedication, innovation and teamwork, NRCP will continue to play a significant role in establishing **India's global leadership in the pomegranate sector**.

MANDATE

- Basic, strategic and applied research on **genetic resource management, crop improvement, production and protection technology** for enhanced and sustained productivity of pomegranate.
- **Transfer of technology** and capacity building of stakeholders for enhancing and sustaining productivity.

MISSION

To establish an **international repository of genetic resources**, develop suitable technologies for pomegranate production and improve the economic status of farmers in different regions.

VISION

To transform ICAR-NRCP into an **International Centre for Pomegranate Research**.

♥ Guidance & support acknowledged



Dr M.L. Jat, Secretary (DARE) & Director General, ICAR



Dr S.K. Singh, DDG (Horticultural Science)



Dr V.B. Patel, ADG (HS) & SMD (HS) officials



RAC Chairman & members for research direction



Director welcoming the RAC Chairman



Director with dignitaries at NRCP exhibition



Director chairing the IRC



Integrity pledge led by the Director



Plantation drive with students



Director reviewing laboratory facilities



Director at National Pomegranate Growers' Meet

2025 AT A GLANCE

THE YEAR IN NUMBERS


20 yrs

Completed on 25 Sep 2025


50

Research projects handled


356

Germplasm accessions


46

New accessions collected


9

Technologies commercialised


₹20.4 L

Revenue from licensing


1

ICAR-certified technology


2

Trademarks registered


10

Research papers (2 >10 NAAS)


11

Technical bulletins


15 + 5

Trainings + workshops


>1,000

Farmers guided (RKVY)


22 · 11 · 13

 Institutional · external ·
contract projects

₹62.0 L

Revenue receipts

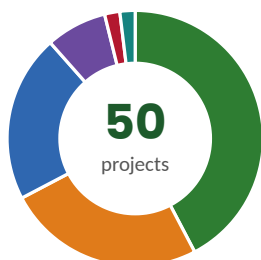

35 / 47

Staff in position / sanctioned


13

Awards & honours

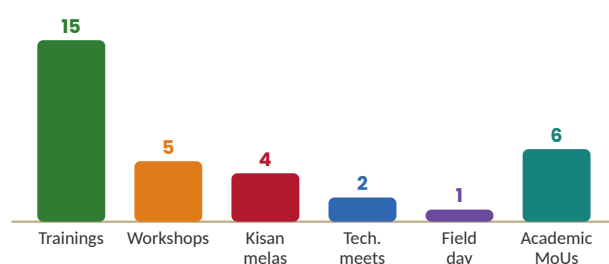
PROJECTS HANDLED IN 2025



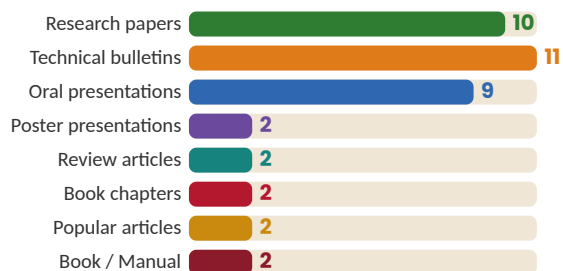
- Institutional 22
- Contract research 13
- Externally funded 11
- Inter-institutional 4
- SCSP 1
- TSP 1

5 institutional projects completed during the year.

OUTREACH EVENTS



PUBLICATIONS 2025



HIGHLIGHTS OF 2025

LANDMARK ACCOMPLISHMENTS



First cold-desert variety from Ladakh

Farmer variety developed by Shri Kacho Vilayat (Sanjak, Kargil) registered under PPV&FR Act, 2001 (02 Apr 2026) after on-site DUS testing of 'Suii' for 24 traits.



Endovita & Rhizoshield commercialised

Novel *Bacillus subtilis* strain (bacterial diseases) and *Trichoderma* consortium (fungal wilt & root rots) licensed to industry.



Rhizoshield certified by ICAR

Trichoderma consortium technology received the ICAR technology certificate on ICAR Foundation Day; licensed to 3 firms by Dec 2025.



Peel-fortified fibre-rich cookies

Pomegranate peel powder raised fibre from 3.71 to 21.44% and antioxidant activity from 13.43 to 88.15% — preservative-free.



Two trademarks registered

Brand protection for NRCP products strengthens commercialisation of institute technologies.



9 technologies, ₹20.4 lakh revenue

17 licence agreements with nurseries, agri-input firms, FPOs and NGOs; MoU with Capser Global Agro Pvt Ltd (CGAPL).



APEDA appreciation for US exports

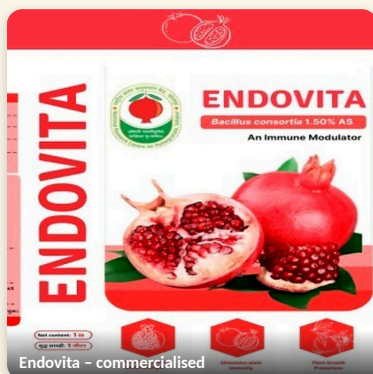
Scientists honoured for the first air & sea consignments of irradiated pomegranate to the USA (2023-24) and sea-protocol static trials.



New research infrastructure

Natural farming unit, wilt-sick plot, naturally ventilated polyhouses, farm store, fencing, well deepening and a renovated auditorium.

Twenty years of NRCP (2005–2025): the Centre celebrated its 21st Foundation Day on 25 September 2025 with the National Pomegranate Growers' Meet cum National Pomegranate Day (>700 participants), organised with SARP, Solapur.



Endovita – commercialised



Rhizoshield – ICAR certified



Patented K-bio-formulation – licensed



TrichoMitra cards – licensed



21st Foundation Day & Growers' Meet



Natural farming unit visit by IAS trainees



New polyhouse – protected cultivation



Natural farming field



Farm water infrastructure



Pomegranate export consignment

RESEARCH PORTFOLIO

50 PROJECTS · PARTNERS · FUNDING

2025

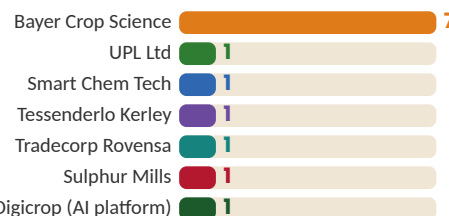
16 ONGOING INSTITUTE PROJECTS

#	Project	PI	Period
1	Development of genetic resources resistant to wilt complex	P. Roopa Sowjanya	2022–27
2	Trait mapping for fruit quality using advanced genomic tools	Prakash G. Patil	2024–28
3	Crop regulation practices for productivity & quality	K. Dhinesh Babu	2024–29
4	Biotic-stress induced biochemical & epigenetic changes	Rahul D. Damale	2021–26
5	Canopy architecture management & high-density planting	C. Awachare	2022–25
6	Fertigation scheduling of major nutrients (Bhagawa, Solapur Lal)	P.S. Shigure	2022–26
7	Quality fruit production under protected cultivation	Ranjan Kumar Singh	2025–30
8	Natural farming practices for quality production	Ranjan Kumar Singh	2025–30
9	Studies on wilt complex in pomegranate	Somnath S. Pokhare	2021–26
10	Epidemiology & management of phylloplane diseases	Manjunatha N.	2021–26
11	Sustainable management of important insect pests	Mallikarjun M.H.	2020–26
12	Quality production using axenic potting media	S.S. Dhumal	2024–29
13	Rootstock compatibility & grafting for biotic/abiotic stress	Ram Niwas	2025–28
14	Chemo-ecological strategies for key pests	Basana Gowda G.	2025–29
15	Innovative valorisation strategies	N.N. Gaikwad	2025–29
16	Functional foods from by-products & flowers	N.A. Giri	2025–29

5 COMPLETED IN 2025

- Draft genome sequencing of cv. Bhagawa (2017–25)
- Breeding for bacterial blight resistance (2019–24)
- Rootstocks for stress & quality (2020–25)
- Functional foods & waste utilisation (2020–25)
- Post-harvest & value addition for entrepreneurship (2019–24)

13 CONTRACT RESEARCH PARTNERS



Bio-efficacy of new molecules, WSF grades, kaolin (Surround-WP) vs sunburn, biostimulants, novel fertilisers & AI crop-tracking validation.

11 EXTERNALLY FUNDED PROJECTS

- MAGNET, GoM** · Spray & freeze-dried juice powder
- MAGNET, GoM** · New exportable varieties
- PPV&FRA** · DUS Centre on pomegranate
- PPV&FRA** · Field gene bank of registered varieties
- DST-SERB** · GWAS for novel genes
- DAE-BRNS** · Induced mutagenesis
- RKVY, GoM** · Biocontrol production laboratory
- RKVY, GoM** · Plant Health Clinic
- ICAR** · AICRP on Arid Zone Fruits
- GoM** · HORTSAP / CROPSAP
- ICAR** · National Agriculture Innovation Fund

4 INTER-INSTITUTIONAL

- **ICAR-CIFE, Mumbai** – fruit & vegetable waste for aquafeed
- **ICAR-VPKAS, Almora** – germplasm in humid/sub-humid Uttarakhand
- **ICAR-NIASM, Baramati** – aril browning & fruit cracking
- **ICAR-NBSS&LUP, Nagpur** – potential areas via RS & GIS



Pomegranate under protected cultivation



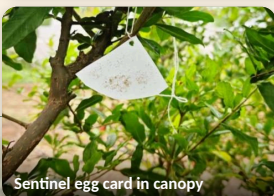
Rootstock grafting



Pollinator floral block



AICRP-AZF trial



Sentinel egg card in canopy



AICRP-AZF trial orchard



Field visit to trial plots



Orchard trial monitoring

GENETIC RESOURCES & GENOMICS

CROP IMPROVEMENT - I

356

Accessions conserved

194 + 162

Indigenous + exotic

46

New (45 J&K + 1 Meghalaya)

2.02 M

High-confidence SNPs

93.6%

Diversity in core set

01 GERMPLASM COLLECTION & CONSERVATION

- 356 accessions maintained in the Field Gene Bank (194 indigenous, 162 exotic).
- Survey-cum-exploration: 45 accessions from Jammu & Kashmir and 1 from Meghalaya; 29 sprouted and maintained in nursery.
- New breeding block of 361 plants (F_1 s of 4 crosses, 6 promising lines, ornamentals, checks) at Kegaon.

02 GENOTYPING-BY-SEQUENCING OF 278 ACCESSIONS

- Illumina NovaSeq 6000, PE 150 bp; Q20 >99%, Q30 97–98%.
- 3,706,334 SNPs called; 2,021,948 retained after filtering.
- Annotation: 75% missense, 25% silent SNPs; core-collection analysis in progress.

03 GWAS IN 95 ACCESSIONS (DST-SERB)

- 626.7 M reads → 36,471 polymorphic SNPs (98.24% intergenic).
- Two clusters separating wild & cultivated germplasm; high heritability (>0.75).
- GCV: acidity 114.8%, fruit weight 51.2%, aril number 46.8%; MTAs for fruit weight (M8469, M11579), fruit length (M2325).

04 SNP BARCODES FOR 28 CULTIVARS

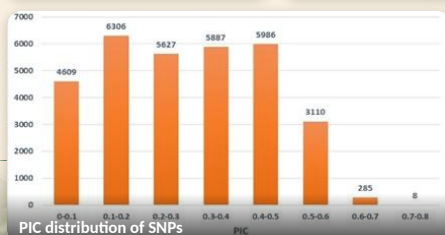
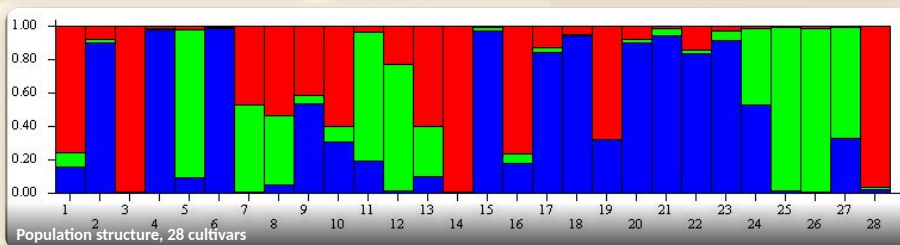
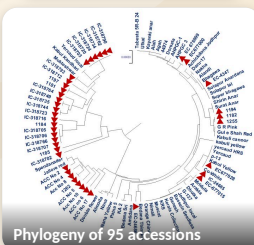
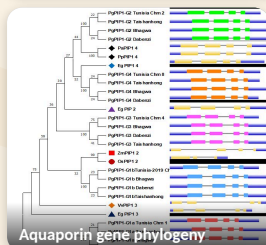
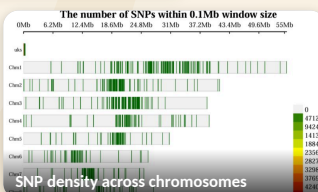
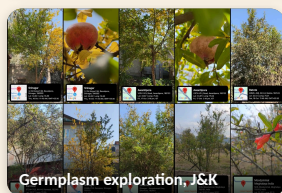
- GBS: 66,145 SNPs → 50,131 clean; 3,110 informative (PIC 0.50–0.59).
- 168 highly informative SNPs → 3–4 sub-populations.
- 62 discriminative SNPs (MAF 0.15) generate unique 2-D QR barcodes for all 28 cultivars — varietal authentication at nursery level.

05 TRAIT GENES & MARKERS

- Five aquaporin genes (PgPIP1) mapped for fruit cracking; non-synonymous SNP (T/C) in PgPIP1-G3 → allele-specific & EST-SSR primers.
- 16 & 15 polymorphic SSRs for fruit cracking & aril browning; PgSSR48 separates both traits.

06 CORE COLLECTION & MUTAGENESIS

- PowerCore: 15 of 79 genotypes (18.98%) capture 93.6% diversity (MD 7.18%, VR 121.19%).
- Gamma-ray LD₅₀: ~22.5 Gy (cuttings) and 175 Gy (seeds); 5 Gy keeps explant vigour (DAE-BRNS).



BREEDING & VARIETIES

CROP IMPROVEMENT – II

2025



330

F₁ hybrids evaluated

169

Hybrids with red flowers



31

Breeding lines for export traits



47

DUS reference varieties

01 SOLAPUR TAPORATNA – EARLY MATURING

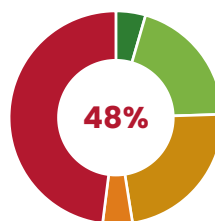


Farmer-participatory selection evaluated 2020–24 at Doddi, Solapur; proposed for institute-level release.

Trait	Taporatna	Bhagawa
Days to maturity	124–140	170–190
Juice recovery	44.01%	35.56%
Avg. fruit weight	264 g	—
Cold-storage life	up to 50 d	—

Red fruits, sweet juicy arils, soft seeds — table & processing.

02 WILT SCREENING IN SICK PLOT



- Resistant 4.5%
- Tolerant (1–15%) 20%
- Mod. tolerant (16–30%) 23%
- Mod. susceptible (31–49%) 4.5%
- Highly susceptible (>50%) 48%

- Resistant: **ACC-10, IC-1184, IC-318706**; partial: EC-677007, Spinaca Khari, EC-677014.
- Two severity peaks (~60 & 360 DAP) — long-term phenotyping essential.

03 HYBRIDISATION FOR FRUIT QUALITY

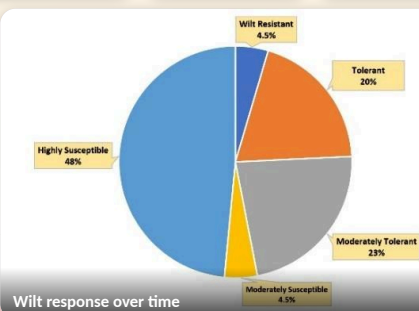
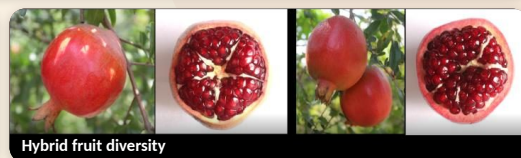
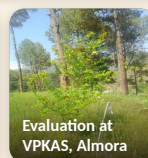
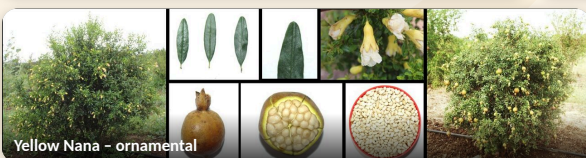
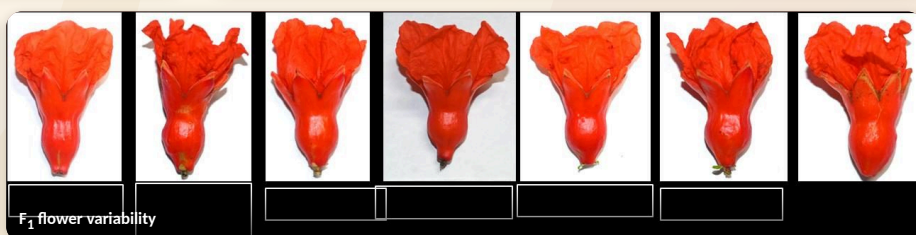


- 330 two-year-old F₁s from 7 crosses (Ganesh, G-137 × Bhagawa, Super Bhagawa, Sharad King, Solapur Taporatna).
- Promising bold red-flowered hybrids: **SPH-4-R9P30, SPH-22-R20P16, SPH-5-R15P9, SPH-4-R9P6**.
- Nine lines out-weighted Bhagawa; **14 Hy Pot-I R4 P2** — 337 g, 15.5 °Brix; SL F-2 R-16 P-48 — red rind, bold arils, soft seeds.

04 VARIETIES, DUS & FARMERS' RIGHTS



- 'Yellow Nana' dwarf ornamental filed for PPV&FR registration (03.10.2025, REG/2025/1220).
- On-site DUS of farmer variety 'Suii' (Sanjak, Kargil) — 24 traits; yellow-pink fruit, TSS 14.9 °Brix.
- DUS data of 47 reference varieties submitted; success story of farmer-bred 'Sharad King' documented.
- VPKAS Almora: 10 accessions established; Solapur Lal flowered.



CANOPY, HDP & CROP REGULATION

CROP PRODUCTION – I

2025

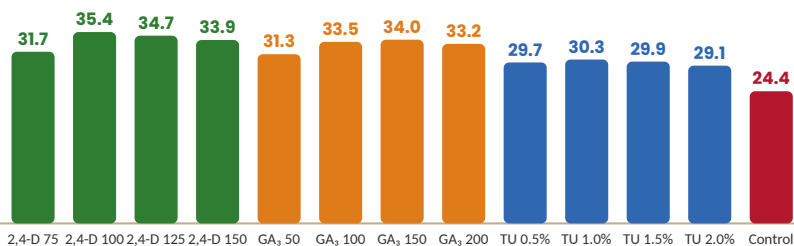
01 TRAINING SYSTEMS (CANOPY ARCHITECTURE)

- Solapur Lal: **Double-T trellis** gave most vigour (2.63 m height, 6.80 m³ volume); **Overhead Gable** most flowers (1,045) & fruits (96.4/tree).
- **Y-trellis**: highest fruit set (54.48%), fruit weight (211.8 g) & yield **19.85 kg/tree**.
- Bhagawa: OGT best canopy (3.66 m³); fruit set 59.3% under CT & OGT.
- Response is cultivar-specific — more flowers ≠ more fruit set.

02 HIGH-DENSITY PLANTING

- Five spacings from 4.5 × 3.0 m to 3.6 × 1.0 m.
- Solapur Lal @ **3.6 × 1.5 m**: 239 g fruits, **17.84 kg/tree**, 76.6% fruit set.
- Bhagawa @ **3.6 × 2.0 m**: 40.3 fruits, 267 g, **10.73 kg/tree**.
- TSS & acidity unaffected — 3.6 × 2.0/1.5 m recommended for HDP.

03 CHEMICAL THINNING AT FULL BLOOM — YIELD (KG/TREE), SOLAPUR LAL



Export-grade fruit (>250 g): 38% with GA₃ 150 ppm, 35% with 2,4-D 100 ppm vs 18% in control. TSS 17.2–17.8 °Brix.

04 CROP PHYSIOLOGY MARKERS

- Leaf catalase, SOD, PPO, peroxidase, lignin & mannitol rise under bacterial blight and wilt stress; sugars & tannins fall — **candidate biomarkers** (Ruby, Bhagawa, Ganesh).
- Five leaf biochemical traits linked to fruit cracking.



Trellis training system



High-density planting block



Heavy fruit load, Kegaon



Mature orchard, MLT



Ring method of drip irrigation



Fruit-laden canopy



Regulated bahar crop



Trained canopy with fruit load



Y-trellis training, Solapur Lal

NATURAL FARMING & PROTECTED CULTIVATION



2025

CROP PRODUCTION – II

01 NATURAL FARMING FOR QUALITY POMEGRANATE



PI: Dr Ranjan Kumar Singh · Co-PIs: P. Raigond, C. Awachare, Manjunatha N., Basana Gowda G., R.A. Marathe

- Orchard planted in H1 block, first week of Sept 2025 with Bhagawa, Solapur Lal & Ganesh.
- Input infrastructure made operational: Jeevamrit unit, NADEP unit, slurry unit and natural-insecticide preparation unit.
- 3 modules × 3 varieties: complete natural farming · NF + farmers' practice · farmers' practice (control).
- Monthly monitoring of soil nutrients, soil microbes, growth and environment; initial establishment encouraging.

Contributes to UN Sustainable Development Goals (SDGs):

2 Zero Hunger

12 Resp. Production

13 Climate Action

15 Life on Land



Jeevamrit production unit



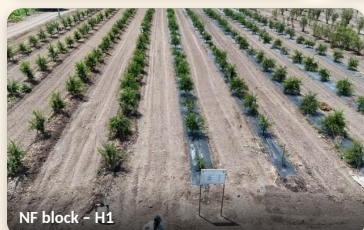
NADEP compost unit



Natural insecticide unit



Slurry unit



NF block - H1



Polyhouse facility



Plants inside polyhouse



Polyhouse planting, Aug 2025

03 ROOTSTOCK COMPATIBILITY & GRAFTING



- Rootstocks: Daru, Jalore Seedless, Patna-5, IC-318706, IC-318735, Henna & crape myrtle.
- Scions of Bhagawa, Ganesh & Solapur Lal; wedge grafting (20–25 cm scion, 3–4 buds) in CRD.
- Target: nematode, fungal wilt & drought tolerance.

04 FERTIGATION STANDARDISATION (AICRP-AZF)



- Multi-centre trial on Bhagawa: Solapur (lead), Abohar, Bikaner, Jobner.
- N doses 0–1,000 g/plant with 250 g P₂O₅ & K₂O; P-dose trials running.
- Mature-orchard data from Solapur & Bikaner in 2025.



Wedge grafting



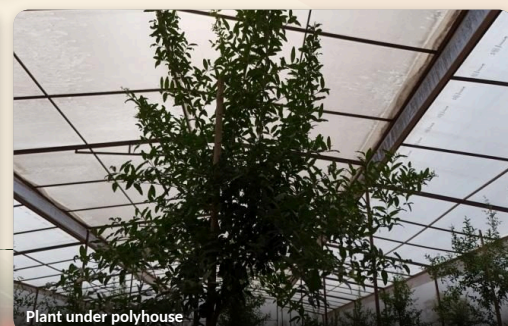
Grafted plants



NF planting, Sept 2025



Fertigation unit



Plant under polyhouse

DISEASE MANAGEMENT

CROP PROTECTION - I

2025



4.8×

Catalase induced by *B. subtilis*

26 cm

Root length with *Bacillus* consortium

15 yrs

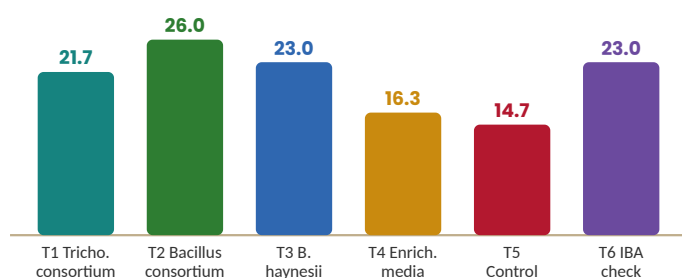
Blight-weather dataset analysed



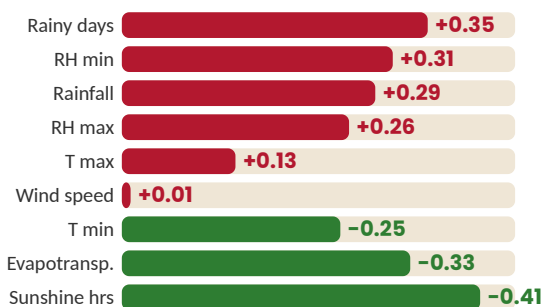
3 firms

Rhizoshield licensees

01 BIO-AGENTS FOR ROOTING OF CUTTINGS (CM)

Sprouts: T2 6.3 vs control 2.7 — *Bacillus* consortium matches/exceeds IBA.

02 BACTERIAL BLIGHT VS WEATHER (R)



Wet, humid spells drive blight; sunshine & ET suppress it — inputs for weather-based forecasting.

03 ENDOPHYTES & HOST DEFENCE



- *B. haynesii*: TPC 1.4×, catalase 3.4×, peroxidase 3.1×.
- *B. tequilensis*: catalase 2.4×, POX 2.0×.
- *B. subtilis*: strongest catalase (4.8×) & POX (2.5×) — basis of **Endovita**.

04 RHIZOSHIELD – TRICHODERMA CONSORTIUM



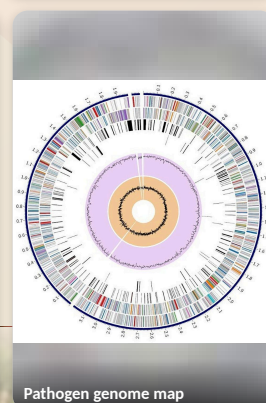
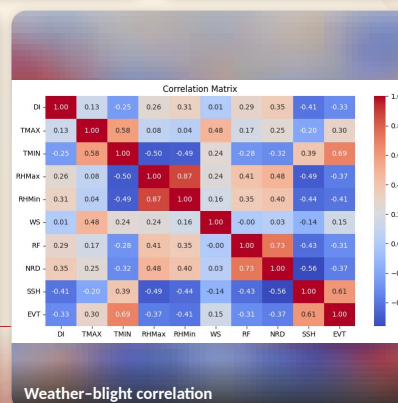
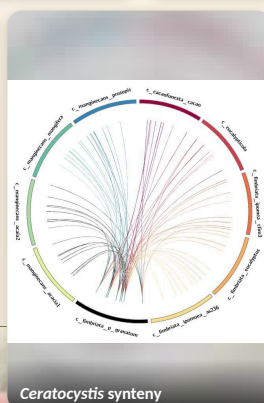
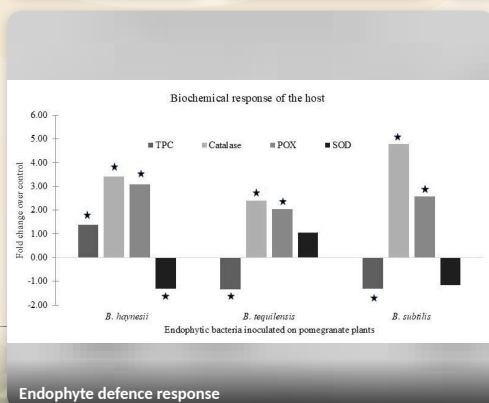
- ICAR-certified; commercialised with 3 private firms by 31 Dec 2025.
- *T. harzianum* tolerated up to 1.0% NaHCO₃ (16% inhibition at 1.3%) — best for alkaline soils.
- *T. asperellum* & *T. erinaceum* inhibited only at 5% NaCl.

05 PATHOGEN GENOMICS



- Circos synteny across *Ceratocystis* species reveals conserved & divergent regions linked to pathogenicity.
- WGS of *Xanthomonas* & *C. fimbriata* completed earlier; bioassay for *X. citri* pv. *punicae* published.

☛ Rooting of cuttings with bio-agents (T1–T6, 3 months after planting)



INSECT-PEST MANAGEMENT

CROP PROTECTION - II

2025

**90–95%**

Egg parasitism by Tricho-cards

**87.1%**

Mealybug kill with Arka Mealmelt combo

**5**

Thrips species identified

**69.4%**

Thrips kill by nano-biopesticide

01 NATIVE *TRICHOGRAMMA CHILONIS* FOR FRUIT BORER



- Native *T. chilonis* trapped with sentinel cards in Kegaon & Hiraj orchards.
- Low-cost sorghum diet for *Corcyra*; 18,000–20,000 eggs/card, ready in 6–8 days, storable 7 days at 10 °C.
- Quality: **90–95% parasitism**, **≥80% emergence**, **≥60% females**, **≥75% flight**.
- P:H 1:10–1:20 highly effective; **1:30 optimum**. Licensed to Mann Deshi Foundation.

02 CHEMICAL & BIO-RATIONAL OPTIONS



- Newer insecticides + **Arka Mealmelt**: up to 87.1% mortality & 10.71 t/ha vs 18.3% / 7.05 t/ha in control.
- Propargite 57 EC**: complete mite control within 2 days.
- Metarhizium anisopliae* reduced thrips, aphids & mealybugs.
- 3 shot-hole borer species & symbiont *Fusarium solani* submitted to GenBank.

03 MULTI-MODE BIOPESTICIDE NANO-EMULSION



Mineral oil + kaolin + allyl isothiocyanate (6% oils @ 12,000 rpm): **270 nm**, PDI 0.41, zeta **-35.2 mV** (stable).

Thrips – treated **69.4%**

Thrips – control **4.3%**

Mealybug – treated **61.2%**

Mealybug – control **5.8%**

04 TAXONOMY & ECOLOGY



- Thrips: *T. parvispinus* (invasive), *T. florum*, *T. hawaiiensis*, *Scirtothrips dorsalis*, *Frankliniella schultzei*.
- Fruit-piercing moth pupae: **59.6 g protein** & 15.3 g fat/100 g — feed potential.
- Tuberose pollinator block (B3)** set up beside B1 & B2 to boost pollination.



Sentinel egg cards



NRCP TrichoMitra card



Thrips parvispinus



Thrips taxonomy



Tuberose pollinator block



Fruit borer damage



Egg card in canopy



Corcyra rearing box



Thrips florum



T. hawaiiensis



Tuberose planting



Stable nano-emulsion



Fruit borer rearing

POST-HARVEST & VALUE ADDITION

FUNCTIONAL FOODS · VALORISATION

2025

**21.44%**

Fibre in peel cookies (3.71% control)

**88.15%**

Antioxidant activity of cookies

**3.3×**

Phenols in soy yoghurt with peel extract

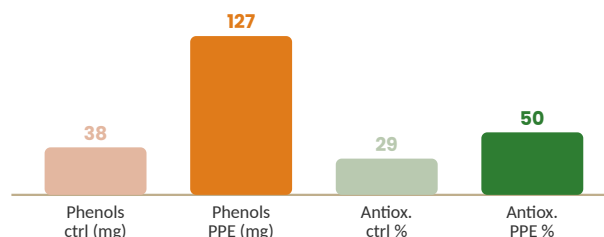
**0.5–0.9%**Aril browning with $\text{Ca}(\text{NO}_3)_2$

01 PEEL-FORTIFIED FIBRE-RICH COOKIES

Fibre (%) – control **3.71**Fibre (%) – PPP **21.44**Antioxidant (%) – ctrl **13.43**Antioxidant (%) – PPP **88.15**Phenols $\times 10$ – ctrl **8.3**Phenols $\times 10$ – PPP **36.8**

Preservative-free functional bakery product with commercial potential.

02 NON-DAIRY PEEL-EXTRACT SOY YOGHURT



- Soymilk 13 °Brix, 1% *L. bulgaricus*, 10% peel extract.
- Probiotic count held for **21 days** — ideal for lactose-intolerant consumers.

03 MICROWAVE-ASSISTED EXTRACTION OF PEEL



- Extraction yield **13.2–31.0%**; particle size is the key driver.
- TPC **404–737 mg GAE/g**; antioxidant activity peaks at 66.99% (250 μm , 350 W).

04 JUICE POWDER (MAGNET)



- Spray-dried powder with maltodextrin + gum arabic stored 12 months at 5, 25 & 40 °C.
- Quality tracked every 45 days — moisture, colour, phenols, anthocyanins, microbes.

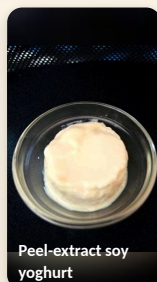
05 ARIL BROWNING & CRACKING (NIASM)



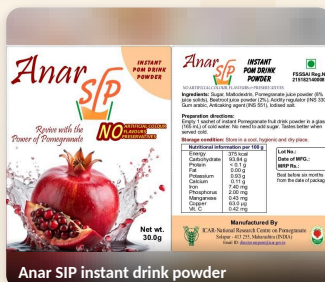
- $\text{Ca}(\text{NO}_3)_2$ foliar spray: **82% reduction** in aril browning — browning **0.9%** (Ganesh) & **0.5%** (Mridula) vs 5.1% & 3.2%.
- *Pantoea agglomerans* putative cause; 23 vs 17 volatiles in healthy vs brown arils.



High-fibre pome cookies



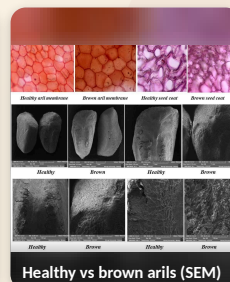
Peel-extract soy yoghurt



Anar SIP instant drink powder



Pome juice powder



Healthy vs brown arils (SEM)



Osmo-dried arils



Pome fruit drink



Seed oil



Pome-karonda jam



Processing facility

COLLABORATIVE & FUNDED PROJECTS

DUS • MAGNET • BRNS • AICRP-AZF • NIASM

2025

01 DUS CENTRE (PPV&FRA)



- On-site DUS of 'Suii' at Sanjak, Kargil: tall spreading tree (3.9 m), thin rind, deep-pink sweet arils, 180–185 days.
- 47 reference & example varieties maintained and database submitted.
- Workshop on PPV&FR Act, 2001 (10 Aug 2025; 60 participants).

02 EXPORTABLE VARIETIES (MAGNET)



- 31 hybrids, advanced & mutant lines evaluated for 15 fruit traits (ambe bahar).
- Fruit weight 90–343 g; TSS 14.1–17.7 °Brix; aril 46–63%.
- Checks: Bhagawa 272 g; Solapur Lal 139 g, 16.8 °Brix.

03 INDUCED MUTAGENESIS (DAE-BRNS)



- LD₅₀: 22.54 Gy (Bhagawa) & 22.47 Gy (Solapur Lal) cuttings; 175 Gy seeds.
- 20 Gy cut plant length 6.03 → 3.72 cm; 5 Gy explants kept vigour.

04 AICRP ON ARID ZONE FRUITS



- NRCP is the lead centre for pomegranate MLTs.
- Solapur Lal MLT** at Solapur + APHU Ananthapuram, CIAH Bikaner, IIHR Bengaluru, MPKV Rahuri — tallest & widest canopy (250 cm).
- MLT on **Solapur Anardana** & multi-centre fertigation trials.

05 INTER-INSTITUTIONAL



- VPKAS Almora**: 10 exotic/indigenous accessions established; Solapur Lal flowered.
- CIFE Mumbai**: fruit waste as aquafeed.
- NBSS&LUP**: RS-GIS mapping of potential areas.

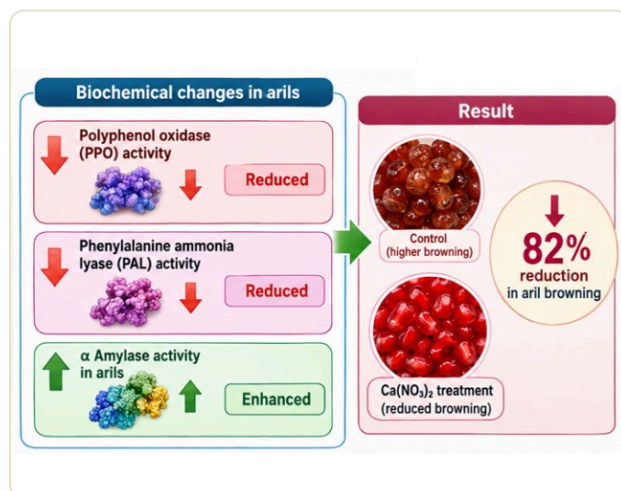
06 ARIL BROWNING & FRUIT CRACKING — WITH ICAR-NIASM, BARAMATI



Inter-institutional project: *Unravelling mechanism and developing mitigation strategies for aril browning and fruit cracking in pomegranate* · PI: Dr Pinky Raigond

① Management of aril browning

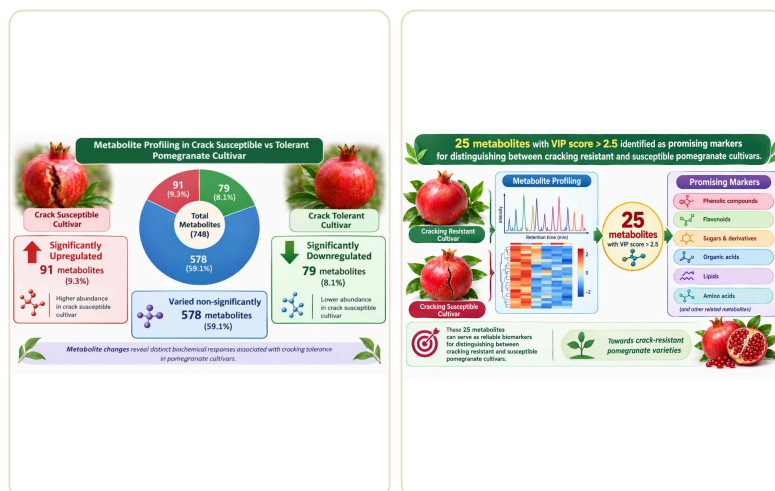
Calcium nitrate foliar spray at 4 stages — before flowering · after full flowering · lemon-size fruit · one month before maturity.



PPO & PAL activity ↓ **reduced**, α-amylase ↑ **enhanced** → **82% reduction** in aril browning.

② Metabolites linked to fruit-cracking tolerance

Of 748 metabolites profiled in crack-susceptible vs crack-tolerant germplasm: **91 up-regulated**, **79 down-regulated**, 578 non-significant.



25 metabolites (VIP > 2.5) identified as promising markers to distinguish crack-contrasting cultivars — useful for **molecular breeding**.

07 CONTRACT RESEARCH — TRADECORP ROVENSA



Evaluation of bio-efficacy of **calcium, biostimulant & silicon-based products** on pomegranate quality, yield & ROI, funded by **Tradecorp Rovensa India Pvt Ltd, Pune**.

₹15,96,805 project budget · PI: Dr Pinky Raigond



SURVEILLANCE & BIOCONTROL

HORTSAP (GOM) · RKVY

2025

6

Districts surveyed

25

Villages

91

Orchards

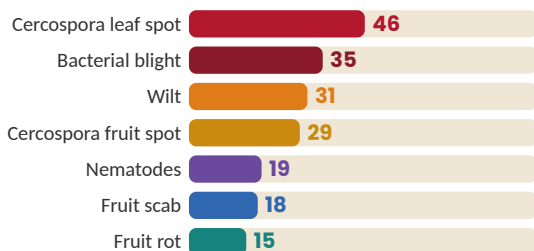
416.25

Acres covered

2

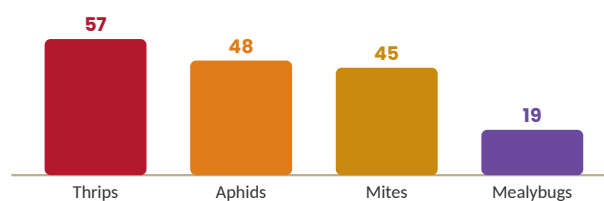
National biocontrol trainings

01 HORTSAP 2025–26: ORCHARDS AFFECTED (OF 91)



Districts: Solapur (146.5 ac), Sangli (128), Satara (48), Nashik (37), Pune (36.75), Ahilyanagar. Blight higher in new orchards & parts of Pune; wilt traced to infected nursery stock.

02 INSECT-PEST PREVALENCE (ORCHARDS)



Fruit & stem borers caused notable quality and vigour losses.

03 SURVEY INSIGHTS FOR ADVISORIES



- Fruit rot higher where fruits were bagged with newspaper.
- Nematodes higher in heavy black, waterlogged soils.
- Timely fungicide schedules key to scab control.

04 RKVY BIOCONTROL PRODUCTION LABORATORY



- State-of-the-art lab built at ICAR-NRCP: 100 *Corcyra* rearing boxes, BOD incubators, autoclaves, UV chamber, RT-PCR, GelDoc, ball mill, imaging microscope.
- Collection & characterisation of native bio-agents against key pests and pathogens.
- National trainings on biocontrol agents: 25–27 Sep 2025 & 9–11 Feb 2026.
- Plant Health Clinic (RKVY) for pomegranate-growing regions of Maharashtra.



Biocontrol laboratory – exterior



Laboratory interior



Formulation facility



Tricho-card packs



Field survey of orchards



Biosafety cabinets



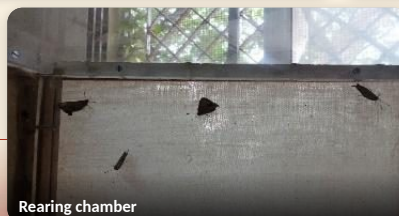
Fruit borer rearing cage



Borer-infested fruit



Egg-card deployment



Rearing chamber



Trichogramma card packs

TECHNOLOGY TRANSFER

LICENSING · MOUS · REVENUE



9

Technologies commercialised



17

Licence agreements



₹20.4 L

Revenue generated



7

MoUs with academia & FPO

TECHNOLOGY LICENSING IN 2025 (₹ INCL. 18% GST)

#	Technology	Licensee	MoU date	Fee (₹)
1	In-vitro propagation of cv. Bhagawa	Krishi Bounty Pvt Ltd, Chennai	08.04.2025	2,36,000
2	Two-stage hardwood cutting incl. bio-hardening	Pravin Dalimb Hi-tech Nursery, Madha	29.04.2025	59,000
3	<i>P. pinophilum</i> K-bio-formulation (patented)	Kusani Grogreen Agri, Pusad	16.06.2025	1,18,000
4	Trichoderma consortium (Rhizoshield)	Kusani Grogreen Agri, Pusad	16.06.2025	1,47,500
5	<i>P. pinophilum</i> K-bio-formulation (patented)	Freshta Farmers Producer Co., Indapur	07.07.2025	1,18,000
6	Trichoderma consortium (Rhizoshield)	Freshta Farmers Producer Co., Indapur	07.07.2025	1,47,500
7	Air-layer propagation – Solapur Anardana	Mohite Farm, Indapur	25.07.2025	59,000
8	Air-layer propagation – Solapur Anardana	Shree Nursery Farm, Manegaon	25.07.2025	59,000
9	Air-layer propagation – Solapur Anardana	Gavali Nursery, Kasegaon	25.07.2025	59,000
10	Air-layer/cutting propagation – Solapur Lal	Shree Nursery Farm, Manegaon	25.07.2025	1,18,000
11	Air-layer/cutting propagation – Solapur Lal	Gavali Nursery, Kasegaon	25.07.2025	1,18,000
12	Low-cost native <i>T. chilonis</i> production	Mann Deshi Foundation, Mhaswad	25.09.2025	1,47,500
13	<i>Bacillus haynesii</i> – PSB/KSB solubiliser	GreenKare Agro (OPC) Pvt Ltd, Pune	25.09.2025	1,18,000
14	Trichoderma consortium (Rhizoshield)	GreenKare Agro (OPC) Pvt Ltd, Pune	25.09.2025	1,47,500
15	<i>P. pinophilum</i> K-bio-formulation (patented)	GreenKare Agro (OPC) Pvt Ltd, Pune	25.09.2025	1,18,000
16	Osmotic-assisted convective drying of arils	GreenKare Agro (OPC) Pvt Ltd, Pune	25.09.2025	1,18,000
17	Low-cost native <i>T. chilonis</i> production	Mann Deshi Foundation, Mhaswad	23.12.2025	1,47,500

MOUS WITH ACADEMIC INSTITUTIONS

- Sinhgad Institute (N B Navale SCOE), Solapur – 04.03.2025
- D.B.F. Dayanand College, Solapur – 23.04.2025
- Walchand Institute of Technology – 07.05.2025
- MIT Vishwapyrayag University – 08.05.2025
- D.Y. Patil Agri. & Tech. University, Talsande – 18.07.2025
- Sangameshwar College, Solapur – 30.09.2025

INDUSTRY, FPO & CERTIFICATION

- Southern Region Pomegranate Growers Producer Co., Banavara (Karnataka) – technical support MoU, 12.12.2025.
- MoU with Capser Global Agro Pvt Ltd (CGAPL) for wider outreach.
- ICAR-certified technology: Rhizoshield (S.S. Pokhare, Manjunatha N., Mallikarjun M.H., R.A. Marathe).
- Kisan Day & MoU ceremony at Mann Deshi, Mhaswad (>1,000 farmers).



Licensing MoU exchange



MoU with Mann Deshi Foundation



Technology licensing MoU



Licence agreement exchange



MoU signing with firm



MoU signing ceremony



MoU exchange with industry



MoU with partner

OUTREACH & EXTENSION

TRAININGS • MELAS • VKSA • SCSP/TSP



15

Trainings

5

Workshops

4

Kisan melas / exhibitions

90

Villages under VKSA

>26,000

Stakeholders reached*

01 LARGEST OUTREACH EVENTS (PARTICIPANTS)

Pusa Kisan Mela, IARI New Delhi	10,000
National Horticulture Fair, IIHR	8,000
XVII Agri Science Congress, Pantnagar	5,000
Technical meet, SRPG-FPO Kadur	1,000
Kisan Day, Mann Deshi Mhaswad	1,000
National Pomegranate Growers' Meet	700
National Conf. on Rural Tech., Solapur	500
Corteva farmer training, Sangola	250
Field day, Bidal & Nirningaon	210
Mandeshi drought-area training	200

*Sum of reported participants at major events, melas and trainings.

02 VIKSIT KRISHI SANKALP ABHIYAN

- 29 May – 12 June 2025 with KVKs.
- 45 villages, 6 talukas of Solapur (KVK Mohol).
- 45 villages, 9 talukas of Latur (KVK Latur).
- Guidance on pests, diseases & disease-free planting material.

03 SCSP & TSP

- SCSP input distribution: Karamba (150), Gaudwadi-Sangola (49), Bhalwani-Mangalwedha (150).
- Tadpatri, brush cutters, sprayers, fertilisers & pesticides.
- TSP: pomegranate for tribal farmers of Nashik; Janjatiya Gaurav Pakhwada (1-15 Nov).

04 CAPACITY BUILDING HIGHLIGHTS

- Export-quality production (Valagro, 36) • IIPM-KAPPEC Bengaluru (50) • GHP for export (Syngenta).
- APEDA buyer-seller meet, Balotra, Rajasthan (6-7 Jan) & advanced training for Balothra growers (136).
- Farmer-scientist workshop (SERB, 62) • Parthenium week (100) • Stakeholders' meet at NASC, New Delhi.

05 VISITORS

- 35 progressive farmers, Vijayapura (KA); growers from Anantapur (AP).
- 77 B.Sc. (Agri) students + RAWE trainees, Lokmangal College.
- Dr H.P. Singh (Ex-DDG) & Dr S.D. Shikhamany.



NRCP stall, Kisan Mela



Farmers' training



VKSA 2025



Training programme



Tribal outreach



Exhibition visitors

INSTITUTIONAL ACTIVITIES

RAC · IRC · IMC · OBSERVANCES

2025

01 18TH RAC · 19 MAY 2025



Chairman: **Dr C.D. Mayee**, former Chairman, ASRB. Key recommendations:

- Barcode commercial varieties with higher marker density; standardise clonal-fidelity protocol.
- Grafting with related/wild species; study graft-union physiology.
- Breed for quality traits besides disease resistance.
- Develop & validate **organic and natural farming** practices.
- Guidelines for **certification of disease-free nurseries** with state departments.
- Microbial consortia & commercialisation of bio-formulations and value-added products.

02 19TH IRC · 23 JUNE 2025



Chaired by Dr R.A. Marathe with external expert **Dr D.P. Waskar**, former DR, VNMKV Parbhani; all ongoing projects reviewed.

03 INSTITUTE MANAGEMENT COMMITTEE



- Approved: Qubit & nanopore sequencer, IRGA, insect-proof net house, 60 HP tractor, video wall.
- Boundary wall, 3 bore wells, pond lining; cashless-treatment MoU for staff.

04 OBSERVANCES & CAMPAIGNS



- World IP Day seminar (1 May) · International Day of Yoga (21 Jun, 60 participants).
- **Ek Ped Maa Ke Naam** (5 Jun) — “Plant for Mother” tree plantation · Parthenium Awareness Week (16–22 Aug).
- Vigilance Awareness Week (27–31 Oct) · Janjatiya Gaurav Pakhwada (1–15 Nov) · Kisan Diwas.

05 SWACHHATA HI SEVA & SWACHH BHARAT



Cleanliness pledges, campus & village drives, student rallies and *Swachhata ki Pathshala* in schools.

06 POSHAN PAKHWADA



7th Poshan Pakhwada (8–23 April 2025) promoting pomegranate for nutrition and health.

07 OTHER OBSERVANCES



International Women's Day · Hindi Pakhwada · Independence Day · PM-Kisan Samman Nidhi telecast with farmers.



18th RAC meeting



19th IRC



Ek Ped Maa Ke Naam plantation



Plant for Mother drive



International Day of Yoga



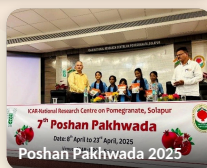
Parthenium Awareness Week



Swachhata Hi Seva 2025



Swachhata rally with students

7th Poshan Pakhwada
Date: 8th April to 23rd April, 2025
Poshan Pakhwada 2025

Vigilance week in schools



Janjatiya Gaurav Pakhwada



Kisan Diwas with KVK Solapur



Independence Day 2025



PM-Kisan programme

HUMAN RESOURCE DEVELOPMENT

CAPACITY BUILDING · LEARNING



525

IGOT Karmayogi courses completed



28

Staff completing courses



47

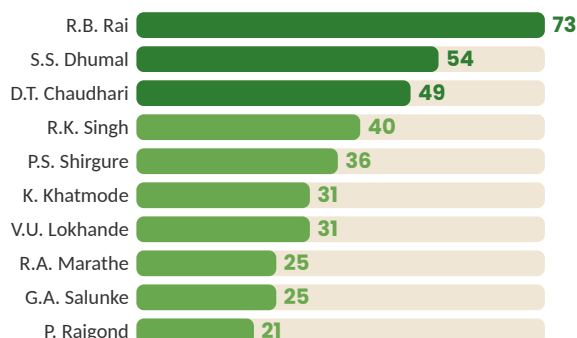
Meetings attended



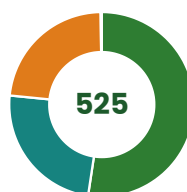
8

Students guided (Ph.D./PG/UG)

01 IGOT LEADERS — COURSES COMPLETED



COURSES BY STAFF CATEGORY



- Scientific 275
- Technical 127
- Administrative 122
- Supporting 1

04 TEACHING & GUIDANCE



- **Dr Mallikarjun M.H.** — Ph.D. co-guide for 3 students (MPKV Rahuri, VNMKV Parbhani); course UENT-102 (NIASM hub).
- **Dr Shilpa P., Dr P. Roopa Sowjanya & Dr Prakash G. Patil** — guided PG/UG projects in genetics & biotechnology.
- **Dr P. Roopa Sowjanya** — course associate, Fundamentals of Plant Breeding (B.Sc. Agri).

02 TRAININGS ATTENDED



- **Dr N.N. Gaikwad, Dr Pinky Raigond, Dr Manjunatha N., Dr Mallikarjun M.H., Dr Namrata A. Giri & Dr P. Roopa Sowjanya** — ISO/IEC 17025:2017 implementation & internal auditing (online 17–18 Feb; physical 5–7 Mar 2025).
- **Dr Mallikarjun M.H.** — GlobalG.A.P. IFA v6 training, Pune (21–25 Apr 2025).
- **Dr Mallikarjun M.H.** — Agricultural Mapper under PM-RKVY (DPR), online.
- **Dr P. Roopa Sowjanya** — NAAS brainstorming on genome editing in agriculture (31 Dec 2025).

03 CONFERENCES, SYMPOSIA & WORKSHOPS



- **Dr R.A. Marathe, Dr K. Dhinesh Babu, Dr S.S. Dhumal, Dr N.N. Gaikwad, Dr Manjunatha N., Dr Ram Niwas, Dr Shilpa P., Dr N.A. Giri, Dr Mallikarjun M.H. & Dr P. Roopa Sowjanya** — 11th Indian Horticulture Congress and IAHS-NRCP workshop on pomegranate, UAS-GKVK Bengaluru (6–9 Nov).
- **Dr N.N. Gaikwad, Dr N.A. Giri, Dr S.S. Pokhare, Dr P.G. Patil, Dr Mallikarjun M.H., Dr Shilpa P., Dr P. Roopa Sowjanya & Dr K. Dhinesh Babu** — National Conference on Innovative Technologies for Rural Development, Solapur (3–5 Mar).
- **Dr P. Roopa Sowjanya** — Intl. Conference on Innovations in Biotechnology, Solapur (10–11 Mar).
- **Dr Mallikarjun M.H.** — National Symposium on Mites, UAS Bengaluru (20–21 Nov).
- **Dr Pinky Raigond** — NAAS International Workshop on agricultural cooperatives (15–16 Dec).



ICAR South Zone Sports Meet, Coimbatore



Student training at NRCP



Capacity-building session



Review meeting



Scientific interaction



Interaction meeting



Visit to input unit



Students' field visit



Student awareness rally

PUBLICATIONS 2025

PAPERS · BOOKS · BULLETINS

10

Research papers

2

Reviews

1 + 2

Book + chapters

11

Oral + poster

11

Bulletins

2

Videos

01 ALL RESEARCH PAPERS & REVIEWS (NAAS RATING)

#	Authors (2025)	Journal	NAAS
1	Raigond P. et al.	<i>J. Food Compos. Anal.</i> 141:107343	10.6
2	Babu S.B. ... Basana-Gowda G. et al.	<i>Entomologia Generalis</i> 45(5)	10.6
3	Pattnaik K.P. ... Basana Gowda G. et al.	<i>Physiologia Plantarum</i> 177(3)	9.6
4	Abhang S., Roopa Sowjanya P. et al.	<i>South African J. Botany</i> 179	8.27
5	Agarwal R., Sowjanya P.R. et al.	<i>Current Protocols</i> 5:e70269	8.2
6	Basana Gowda G. et al.	<i>J. Applied Genetics</i>	7.9
7	Priyadarshini S.S. ... Basana-Gowda G.	<i>Annals of Applied Biology</i>	7.8
8	Awachare C. et al.	<i>Plant Physiology Reports</i>	7.5
9	Kulkarni D.S., Patil P.G. et al.	<i>NZ J. Crop & Hort. Science</i> 54	7.5
10	Babu K.D. et al. (review)	<i>Indian J. Fertilisers</i> 21(4)	5.29
11	Ganeshamurthy A.N., Babu K.D. et al. (review)	<i>Indian J. Fertilisers</i> 21(4)	5.29
12	Giri N.A., Gaikwad N. & Marathe R.	<i>J. Horticultural Sciences</i> 20(2)	6.4

02 BOOKS, REVIEWS & MANUALS

- An Atlas for Biotic & Abiotic Stress in Pomegranate (70 pp).
- Reviews in Indian J. Fertilisers on conservation horticulture & carbon storage.
- Chapter on calcium, antioxidants & enzymes in post-harvest (NIPA).
- E-manual on biocontrol agents (87 pp).

03 BULLETINS (SELECTED)

- Vision 2047 – Shaping the Future, Honouring the Legacy.
- Package of Practices for IPM & IDM (36 pp).
- Field Diagnostic Keys for Pomegranate (64 pp).
- Hindi / Marathi extension bulletins for farmers.

04 PRESENTATIONS AT 11TH IHC-2025 & OTHER FORA

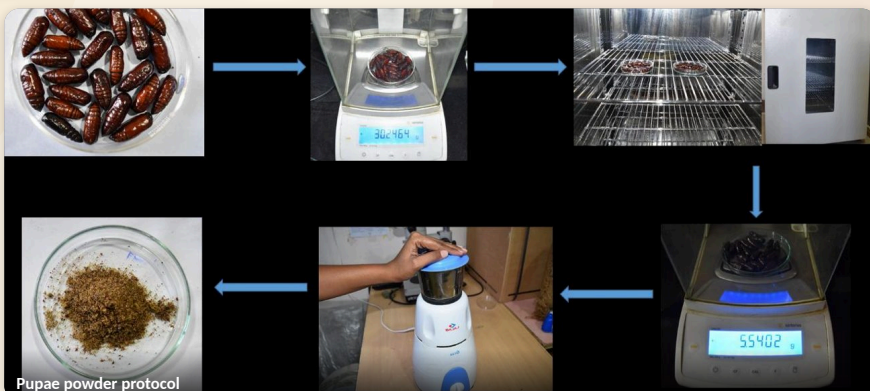
- GBS-GWAS SNPs for fruit traits (**best oral**) · Bahar treatment for higher yield (**best oral**) · peel-extract soy yoghurt (**best oral**).
- Bio-fortified, climate-resilient varieties (**best poster**) · shot-hole borer IPM · early-maturity indicators · pollen donors.
- Solar light traps for fruit fly (IAHS digital-horticulture conference, IARI).

05 POPULAR & MEDIA

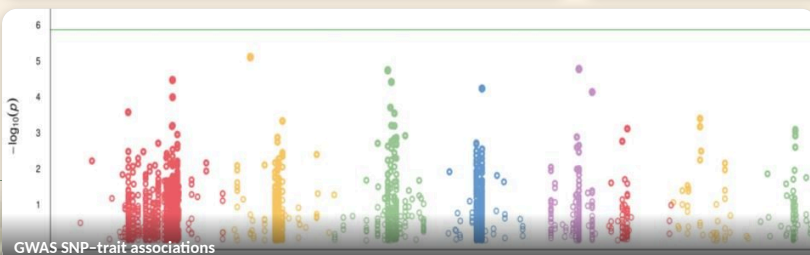
- *Krishi Science*: bioinformatic tools for fruit genomics.
- *Kerala Karshakan*: pomegranate for nutrition & livelihood.
- Institute film in English & Hindi.



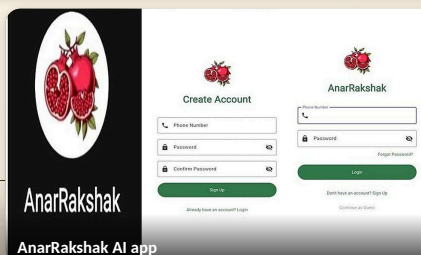
Wedge grafting - extension poster Grafting



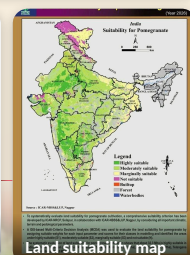
Pupae powder protocol



GWAS SNP-trait associations



AnarRakshak AI app



Land suitability map

AWARDS & RECOGNITIONS

HONOURS TO THE NRCP TEAM



NESA Eminent Scientist of the Year Award-2025

Dr Mallikarjun M.H.
National Environmental Science Academy



Dr R.S. Paroda Young Scientist Award-2024

Dr Shilpa Parashuram
ISPGR, New Delhi (19.12.2025)



Best Research Publication Award-2025

Dr Pinky Raigond
ICAR-NRCP, 21st Foundation Day



APEDA appreciation – export of irradiated pomegranate to USA

Dr R.A. Marathe, Dr N.N. Gaikwad, Dr N.A. Giri
APEDA, Govt. of India



Sir M. Visvesvaraya Eminent Engineer Award 2025

Dr Nilesh N. Gaikwad
Institution of Engineers (India)



NAAS Associateship (Plant Protection)

Dr Basana Gowda G.
NAAS, New Delhi



Prof. T.N. Ananthakrishnan-Kannan Nagarajan Young Scientist Award (1st)

Dr Basana Gowda G.
TNA Foundation, Chennai



Netaji Subhas ICAR International Fellowship – Ph.D., Ghent University

Mr Rahul D. Damale
ICAR Education Division



Fellowship of Society for Promotion of Horticulture (FSPH-2025)

Dr K. Dhinesh Babu
SPH, ICAR-IIHR (17.10.2025)

BEST PRESENTATION AWARDS · 11TH IHC-2025, BENGALURU



- **Best Oral** – Dr N.A. Giri et al.: non-dairy peel-extract fortified yoghurt.
- **Best Oral** – Dr K. Dhinesh Babu et al.: bahar treatment for higher yield & quality.
- **Best Oral** – Dr P. Roopa Sowjanya et al.: GBS-GWAS SNPs for fruit traits.
- **Best Poster** – Dr K. Dhinesh Babu et al.: bio-fortified, climate-resilient varieties & their protection.



13

Awards & honours in 2025



4

Best oral / poster awards



3

Scientists honoured by APEDA



Paroda Young Scientist Award



FSPH-2025 Fellowship



Award felicitation



Award function

FINANCE & STAFF

BUDGET · REVENUE · PERSONNEL

2025



₹62.0 L

Revenue receipts 2025-26



47

Sanctioned posts



35

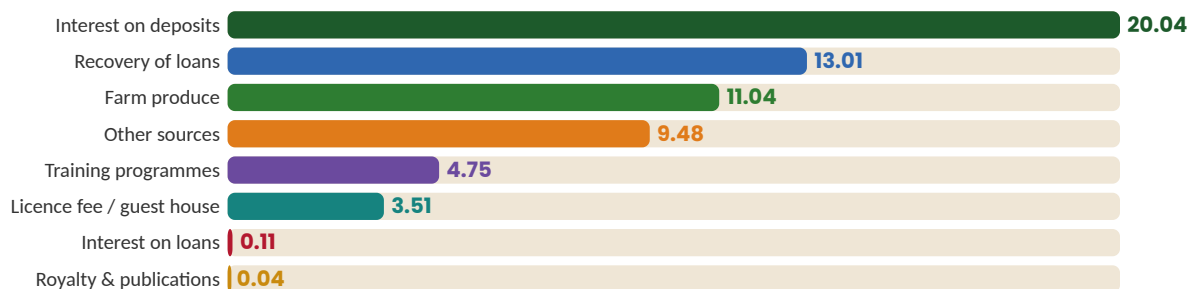
Staff in position



5

New joinings in 2025

01 REVENUE RECEIPTS 2025-26 (₹ LAKH) — TOTAL 62.0



02 STAFF POSITION



Category	Sanctioned	In position	Vacant
RMP	1	1	0
Scientific	22	17	5
Administrative	16	9	7
Technical	6	6	0
Supporting	2	2	0
Total	47	35	12

03 JOINING, PROMOTION & RELIEVING



- Joined: **Dr Basana Gowda G.** (Sr. Scientist, Entomology, 15.04.2025) and **Dr Ram Niwas** (Sr. Scientist, Hort., 28.04.2025).
- Assistants joined: Sandeep Joshi, Vishal Saroha, Vishal Hinghe (Aug-Sep 2025).
- Dr Prakash G. Patil promoted to Principal Scientist; Dr Shilpa P. & Dr C. Awachare joined as Sr. Scientists (DR).
- Relieved: Kuldeep Vaishya, transferred to ICAR-NIASM.

04 OUR PEOPLE — ICAR-NRCP STAFF 2025



RMP: Dr Rajiv Arvind Marathe, Director

Scientific staff (17)

Dr P.S. Shingure
Pr. Scientist (L&W Mgt. Engg.)

Dr Ranjan Kumar Singh
Pr. Scientist (Fruit Science)

Dr Prakash G. Patil
Pr. Scientist (Biotechnology)

Dr Pinky Raigond
Sr. Scientist (Plant Physiology)

Dr Somnath S. Pokhare
Sr. Scientist (Nematology)

Dr Shilpa Parashuram
Sr. Scientist (Genetics & PB)

Dr Basana Gowda G.
Sr. Scientist (Entomology)

Dr Namrata A. Giri
Scientist (Food Technology)

Mr Rahul D. Damale
Scientist (Biochemistry)

Dr K. Dhinesh Babu
Pr. Scientist (Fruit Science)

Dr Sangram S. Dhumal
Pr. Scientist (Fruit Science)

Dr N.N. Gaikwad
Sr. Scientist (AS & PE)

Dr Manjunatha N.
Sr. Scientist (Plant Pathology)

Dr Chandrakant Awachare
Sr. Scientist (Fruit Science)

Dr Ram Niwas
Sr. Scientist (Fruit Science)

Dr Mallikarjun M.H.
Scientist (Agril. Entomology)

Dr P. Roopa Sowjanya
Scientist (Genetics & PB)

Technical staff (6)

Sh. D.T. Chaudhari, Technical Officer

Sh. Yuvaraj Shinde, Technical Officer

Sh. Bhausaheb Naikwadi, Sr. Technical Assistant

Sh. Vijay Lokhande, Technical Assistant

Sh. Mahadev Gogaon, Senior Technician

Sh. Govind Salunke, Senior Technician

Administrative staff

Sh. R.B. Rai, Administrative Officer

Sh. V.A. Shinde, Finance & Accounts Officer

Ms Sweety Singh, Assistant

Sh. Sandeep Joshi, Assistant

Sh. Vishal Hinghe, Assistant

Sh. Vishal Saroha, Assistant

Sh. Kiran Khatmode, UDC

Sh. A.S. Babar, LDC

Supporting staff (2)

Sh. Shailesh Bayas, SSS

Sh. Vishal Gangane, SSS

WAY FORWARD

ROADMAP GUIDED BY RAC 2025



2025



Genomics-led breeding

Finalise core collection, validate GWAS SNPs & deploy SNP barcodes for nursery certification.



Natural & protected production

Generate multi-season evidence on NF modules and polyhouse cultivation for climate-resilient quality fruit.



Bio-based protection

Scale Endovita, Rhizoshield & Tricho-cards through the RKVY biocontrol lab and licensees.



Clean planting material

Guidelines for certification & registration of disease-free nurseries with state departments.



Digital & precision farming

Validate AI-enabled crop tracking, sensor-based fertigation & weather-based blight forecasting.



Value chain & exports

Commercialise functional foods, juice powders & peel products; support export protocols.



Farmers first

Expand FPO partnerships, SCSP/TSP outreach and multilingual advisories.

अनार अनुसंधान से किसान समृद्धि — विकसित भारत @2047



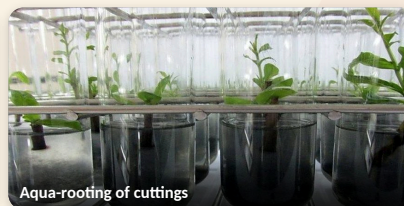
Quality planting material



Genomics & biotechnology laboratory



Automatic weather station - digital farming



Aqua-rooting of cuttings



Export-grade pomegranates



Natural farming block



Drone-based precision spraying



20

Years of NRCP

356

Accessions

50

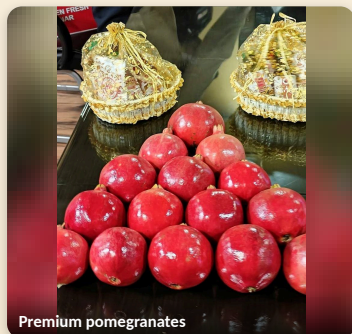
Projects

9

Technologies licensed

>26k

Stakeholders reached



Premium pomegranates



Natural farming unit



Germplasm fruit diversity



Young pomegranate plant



भा.कृ.अनु.प. – राष्ट्रीय अनार अनुसंधान केन्द्र, सोलापुर

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