

Department of Agronomy

College of Agriculture, NAU, Campus Bharuch

RESEARCH, INNOVATION & AGRICULTURAL IMPACT

Five Years of Knowledge, Innovation and Impact | 2021–22 to 2025–26

Our five-year journey reflects a strong commitment to translating agricultural research into practical solutions, strengthening intellectual property, and expanding the reach of scholarly knowledge. From field-oriented AGRESKO recommendations for farmers to registered designs and quality-rated research publications, these achievements demonstrate a sustained culture of research, innovation and societal impact.

1. RESEARCH THAT REACHES THE FARMER

Transforming Scientific Findings into Practical Agricultural Solutions

Through AGRESKO recommendations, scientific research has been translated into practical guidance for the farming community. Over the period from **2021–22 to 2025–26**, a total of **12 recommendations** were developed for farmers, addressing crop production, weed management, nutrient management, drought mitigation, crop diversification and profitable farming practices under South Gujarat conditions.

Year-wise AGRESKO Recommendations

Academic Year	Recommendations for Farming Community
2021–22	2
2022–23	2
2023–24	3
2024–25	3
2025–26	2
Total	12

Highlights of Agricultural Recommendations

2021–22 — Building Better Crop Establishment and Productivity

Research focused on the **allelopathic effects of facultative weed species** on wheat germination and crop vigour. Wheat growers were advised to manage weeds such as *Parthenium hysterophorus*, *Alternanthera sessilis*, *Euphorbia geniculata* and *Achyranthes aspera* before wheat sowing. Research also addressed the response of cotton to green manuring and fertility levels under rainfed conditions, with recommendations supporting appropriate nitrogen management for improved yield and profitability.

2022–23 — Strengthening Cotton Production Systems

Recommendations focused on **weed management in cotton**, including stale seedbed techniques and suitable herbicide-based interventions. Research also addressed tillage and intercropping systems for rainfed cotton in South Gujarat, recommending improved tillage practices and intercropping with blackgram or greengram for higher and profitable production.

2023–24 — Improving Pigeonpea Productivity

Three recommendations were developed for pigeonpea production. These covered **row and plant spacing, land configuration and drought-mitigation strategies, and fertility management**. The recommendations aimed to improve pigeonpea productivity and profitability under South Gujarat conditions.

2024–25 — Advancing Crop and Nutrient Management

Recommendations addressed **weed management in cotton**, nutrient management and bio-fertilizer application in rabi sweet corn, and balanced nutrient management in dill seed. These practices were designed to support higher crop yields and improved monetary returns under South Gujarat conditions.

2025–26 — Promoting Diversification and Efficient Fertilizer Use

Research supported **pigeonpea-based intercropping with small millets** under rainfed conditions and recommended optimized NPS fertilizer management for mustard production. These recommendations contribute to crop diversification, improved productivity and better economic returns for farmers.

Key Recommendation Areas

- Sustainable and effective weed management
- Improved crop spacing and establishment
- Rainfed crop productivity
- Drought-mitigation strategies
- Integrated nutrient management
- Bio-fertilizer application
- Intercropping and crop diversification
- Higher farm profitability

2. IDEAS ENGINEERED INTO INNOVATION

From Research Concepts to Registered Intellectual Property

Innovation is strengthened when scientific ideas are transformed into useful designs and technologies. During **2024–25**, one design registration was recorded, representing an important milestone in institutional intellectual property development.

Registered Design: Sustainable Vermiwash Collector

Title: Sustainable Vermiwash Collector

Design Registration Number: 456105-001

Date of Registration: 21 April 2025\

Class: 15-03

Registration Authority: Patent Office, Government of India / Controller General of Patents, Designs and Trade Marks

The design was registered under the **Designs Act, 2000 and Designs Rules, 2001**.

Registered Applicants / Proprietors / Authors

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Innovation Highlight

The design entitled “**Sustainable Vermiwash Collector**” was registered under the Designs Act, 2000 and Designs Rules, 2001 with **Design Registration No. 456105-001**, dated **21 April 2025**, in Class 15-03. The registration was issued by the Patent Office, Government of India through the Controller General of Patents, Designs and Trade Marks.

The registered design represents an institutional effort to develop and protect innovative solutions with relevance to sustainable agricultural practices.

3. KNOWLEDGE PUBLISHED, IMPACT MULTIPLIED

Building a Stronger Research and Scholarly Footprint

Research publications provide an important measure of scholarly contribution and knowledge dissemination. During the five-year period from **2021–22 to 2025–26**, research outputs were recorded across publications with and without NAAS/Thomson & Reuters ratings.

Year-wise Publication Profile

Academic Year	Without NAAS Rating	NAAS / Thomson & Reuters <5	NAAS / Thomson & Reuters 5.0–7.5	NAAS / Thomson & Reuters >7.5
2021–22	–	7	6	–
2022–23	2	4	7	–
2023–24	1	7	7	1
2024–25	1	1	6	1
2025–26	0	3	9	–
Total	04	22	35	02

Five-Year Publication Snapshot

Across the reported five-year period, the publication profile records:

- **04** publications without NAAS rating
- **22** publications in the **<5** rating category
- **35** publications in the **5.0–7.5** rating category
- **02** publications in the **>7.5** rating category

The publication profile reflects continued scholarly engagement and research dissemination across recognized publication platforms.

4. FIVE YEARS OF KNOWLEDGE, INNOVATION AND IMPACT

Connecting Research Excellence with Real-World Agricultural Needs

The achievements recorded between **2021–22 and 2025–26** demonstrate a multifaceted research ecosystem built around three interconnected pillars: **field-level agricultural recommendations, intellectual property and scholarly publications.**

At a Glance

Key Indicator	Achievement
AGRESKO recommendations for the farming community	12
Registered design during 2024–25	1
Publications across the reported rating categories	63
Continuous research and innovation period	5 Years

Our Impact

The five-year record illustrates how research can move beyond laboratories and academic publications to address practical agricultural challenges. AGRESKO recommendations have provided crop- and region-specific guidance to farmers, while intellectual property development has supported the protection of institutional innovation. At the same time, research publications have strengthened the dissemination of scientific knowledge through recognized scholarly channels.

The combined achievements demonstrate a continuing commitment to **agricultural research, innovation, knowledge creation and societal relevance.**

RESEARCH. INNOVATION. APPLICATION. IMPACT.