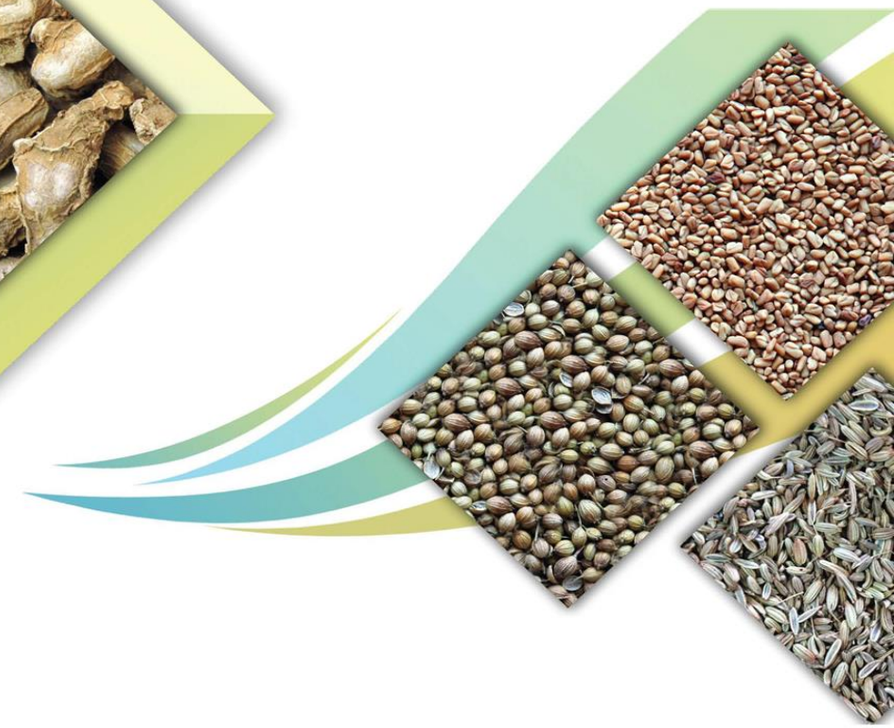
भाकृअनुप
ICAR

Technical Bulletin







# SPICES
# VARIETIES & TECHNOLOGIES
## FOR FARMERS WELFARE (2026)


भा.कृ.अनु.प –अखिल भारतीय समन्वित मसालाअनुसंधानपरियोजना
ICAR-All India Coordinated Research Project on Spices

ICAR-Indian Institute of Spices Research
Marikunnu P.O., Kozhikode- 673 012, Keralam, India



2026

Special Publication: 2026/01

**Published by**
Project Coordinator (Spices)
ICAR-All India
Coordinated Research
Project on Spices
Kozhikode – 673 012,
Keralam, India
Phone: 0495 2731954, Fax : 0495 2731954
email: aicrpspices@gmail.com
Website : https://aicrps.res.in/

**Compiled and Edited by**
S. Mukesh Sankar
Lijo Thomas
C. N. Biju
Sharon Aravind
D. Prasath

**Cover Design**
A. Sudhakaran

**Correct Citation**
Mukesh Sankar, S., Lijo Thomas, Biju, C. N., Sharon Aravind, Prasath, D., (Eds.), 2026. Spices Varieties & Technologies for Farmers Welfare (2026). ICAR-All India Coordinated Research Project on Spices, ICAR-IISR, Kozhikode, Keralam, India. 15p.

**October 2026**

**Printed at**
Digital Images
Kozhikode, Keralam

**SPICES**
**VARIETIES & TECHNOLOGIES FOR FARMERS WELFARE**
**(2026)**

# CONTENTS

## Varieties

1. Ginger 2
2. Coriander 3
3. Leafy coriander 5
4. Fenugreek 6

## Technologies

1. Black pepper 8
2. Ginger 9
3. Coriander 11
4. Cumin 12
5. Fenugreek 13

भाकृअनुप
ICAR

# SPICES
# VARIETIES
# 2026





# GINGER

## IISR Navya (HP 0.5/2)

| | |
|---|---|
| **Quality attributes** | |
| Essential oil (%) | 2.7 |
| Dry recovery (%) | 18.78 |
| Oleoresin (%) | 6.65 |
| Fiber (%) | 6.5 |
| **Morphological characters** | |
| Plant height (cm) | Short (55-65) |
| Leaf length/breadth (cm) | 25.0/2.5 |
| Number of tillers per clump | 6.3 |
| Number of leaves per tiller | 20-25 |
| Colour of rhizome core | Bluish-yellow |
| Colour of scale | Brown |
| **Reactions to biotic/abiotic factors** | |
| Rhizome rot | Field Tolerant |
| Bacterial wilt | Field Tolerant |

**Special characteristics**

High and stable yielder with field tolerance to softrot and bacterial wilt diseases. Excellent combined quality attributes (high oleoresin and essential oil).

**Specific recommendations**

Use only disease-free clonal planting material. Recommended POPs of ICAR-IISR are to be followed.

| | |
|---|---|
| **Breeding centre** | ICAR-Indian Institute of Spices Research, Kozhikode, Keralam |
| **Pedigree** | ɣ-ray mutant derived from Himachal local |
| **Areas of adoption** | Suitable for both irrigated and rainfed conditions of Kerala, Meghalaya, and West Bengal. |
| **Crop duration** | 220 to 240 days (Maturity group: Medium) |
| **Average yield (per ha)** | 15.3 tonnes fresh rhizomes |
| **Potential yield (per ha)** | 36.0 tonnes fresh rhizomes |






# Coriander

## Karan Dhaniya-1 (RCr 565/UD-565)

| | |
|---|---|
| **Quality attributes** | |
| Essential content (%) | 0.38 |
| **Morphological characters** | |
| Growth habit | Bushy and erect type |
| Plant height (cm) | 85-93 |
| Number of primary branches | 6.6 |
| Number of secondary branches | 17.9 |
| Number of umbel per plant | 42.8 |
| Number of umbellet per umbel | 5.8 |
| Number of seeds per umbel | 22.7 |
| 1000 seed weight (g) | 13.0 |
| **Reactions to biotic/abiotic factors** | |
| Powdery mildew | Moderate resistant |
| Stem gall | Highly resistant |
| Aphids | Susceptible |
| **Special characteristics** | |
| High seed yield with high volatile oil yield potential. High early growth vigour with bushy and erect plants with long and bold seeds. Resistant to stem gall and moderately resistant to powdery mildew diseases.. | |
| **Specific recommendations** | |
| Recommended POPs of SAUs are to be followed. | |

| | |
|---|---|
| **Breeding centre** | ICAR-AICRP on Spices, S.K.N. College of Agriculture, SKNAU, Jobner, Rajasthan |
| **Pedigree** | Recurrent selection from CO-1 |
| **Areas of adoption** | Rajasthan, Gujarat, UP, Bihar, MP, Andhra Pradesh, Chhattisgarh and Tamil Nadu |
| **Crop duration** | Medium, 113 days (100-110 days) |
| **Average yield (per ha)** | 1500 kg |
| **Potential yield (per ha)** | 2000 kg |





# Coriander

## Navsari Krupali (Gujarat Coriander 5 /GCo 5)

| | |
|---|---|
| **Quality attributes** | |
| Essential content (%) | 0.32 |
| Linalool content (%) | 72.54 |
| **Morphological characters** | |
| Growth habit | Erect / Semi-erect, medium tall plant type |
| Plant height (cm) | 72-106 |
| Number of primary branches | 7.68 |
| Number of secondary branches | 19.78 |
| Number of umbel per plant | 35.68 |
| Number of umbellet per umbel | 6.84 |
| Number of seeds per umbel | 42 |
| 1000 seed weight (g) | 18.6 |
| **Reactions to biotic/abiotic factors** | |
| Powdery mildew | Moderate resistant |
| Stem gall | Highly resistant |
| Aphids | Highly resistant |
| **Special characteristics** | |
| High seed yield with early maturing type. Highly resistant to stem gall and aphids and moderately resistant to powdery mildew diseases.. | |
| **Specific recommendations** | |
| Recommended POPs of SAUs are to be followed. | |

| | |
|---|---|
| **Breeding centre** | ICAR-AICRP on Spices, College of Agriculture, Navsari Agricultural University, Navsari, Gujarat |
| **Pedigree** | Mass Selection from OP population GP 42 (13NCORS-POP-1-1-1-1-B) |
| **Areas of adoption** | Gujarat |
| **Crop duration** | Early, 96 days (82-108 days) |
| **Average yield (per ha)** | 1600 kg of leaf biomass |
| **Potential yield (per ha)** | 3000 kg of leaf biomass |

# Leafy Coriander

## Navsari Surabhi/GLC-2







| | |
|---|---|
| **Breeding centre** | ICAR-AICRP on Spices, College of Agriculture, Navsari Agricultural University, Navsari, Gujarat |
| **Pedigree** | Mass Selection from OP population GP 104 (13NCOR728POP-1-1-1-1-1-B) |
| **Areas of adoption** | Gujarat |
| **Crop duration** | Dates to bolting 66 days (61-68 days) |
| **Average yield (per ha)** | 16950 kg |
| **Potential yield (per ha)** | 21320 kg |

| | |
|---|---|
| **Quality attributes** | |
| Leaf essential oil content (%) | 0.36 |
| Dry weight (%) | 19.50 |
| Leaf iron content (mg/100 g) | 9.45 |
| Leaf calcium content (mg/100 g) | 245.7 |
| Leaf protein content (mg/100 g) | 3110 |
| **Morphological characters** | |
| Days taken for germination (days) | - |
| Number of leaves per plant | 21.61 |
| Plant height (cm) | 48.84 |
| Number of primary branches | 8.6 |
| Number of secondary branches | 27.4 |
| **Reactions to biotic/abiotic factors** | |
| Aphids | Highly Resistant |
| Powdery mildew | Mod. resistant |
| Fusarium wilt | Mod. resistant |
| **Special characteristics** | |
| Variety suitable for multi-cut (3 cuts). Late bolting type of 66 days with an extended vegetative phase, leaves are attractive, good aroma and keeping quality. Excellent keeping quality under refrigeration up to 9 days harvesting. | |
| **Specific recommendations** | |
| Recommended POPs of SAUs are to be followed. | |

# FENUGREEK

## Karan Methi-1
## (RMt 259/ UM 259)








| Quality attributes | |
|---|---|
| Total protein content (%) | 29.75 |
| Crude fibre content (%) | 22.01 |
| Diosgenin content (mg/100g) | 317 |
| **Morphological characters** | |
| Growth habit | Erect and U-type |
| Plant height (cm) | 66 cm (60-70 cm) |
| Number of primary branches | 6.0 |
| Number of secondary branches | -- |
| Number of pods per plant | 46 |
| Pod length (cm) | 11-12 |
| Number of seeds per pod | 17.0 |
| 1000 seed weight (g) | 12.0 |
| **Reactions to biotic/abiotic factors** | |
| Downy mildew | Moderately resistant |
| Powdery mildew | Moderately resistant |
| **Special characteristics** | |
| High yielding, indeterminate, medium maturing variety with bold attractively yellow coloured seed. Express moderately resistant to powdery mildew as well as downy mildew diseases. | |
| **Specific recommendations** | |
| Recommended POPs of SAUs are to be followed. | |

| | |
|---|---|
| **Breeding centre** | ICAR-AICRP on Spices, S.K.N. College of Agriculture, SKNAU, Jobner, Rajasthan |
| **Pedigree** | Pure line selection from local type belongs to Ramganj Mandi, Kota. |
| **Areas of adoption** | Rajasthan, Gujarat, UP, Bihar, MP, Haryana, Uttarakhand, and West Bengal |
| **Crop duration** | Medium: 121 days (116-133 days) |
| **Average yield (per ha)** | 1742 kg |
| **Potential yield (per ha)** | 2500 kg |

SPICES

# TECHNOLOGIES

2026



# Black Pepper

## Effective Insecticide for controlling pollu beetle (*Lanka ramkrishnai*) in black pepper



Three rounds of spray with chlorantraniliprole 18.5 % SC or flubendiamide 39.35 % SC at 0.3-0.5 ml/l of water during July, August and September demonstrated that berry damage dropped from 13.05%–19.37% in untreated vines down to 0.04%–5.75% with chlorantraniliprole and 1.27%–4.78% with flubendiamide achieving a favourable benefit-cost ratio of up to 2.42 (versus 1.23 for untreated vines).

**This technology is recommended for black pepper regions of Karnataka and Kerala**



















# GINGER

## Intercropping systems in ginger for improving farm productivity

| Intercropping Practices | Recommended States |
|---|---|
| Intercropping ginger with Elephant foot yam (2:2) (Grow taro in *Kharif*) | Andhra Pradesh, Bihar and West Bengal |
| Intercropping ginger with Maize (2:1 or 2:2) (Grow sweet corn in *Kharif*, and *Rabi*) | Odisha, Nagaland, Himachal Pradesh and Mizoram |
| Intercropping ginger with french bean (2:2) (Grow Dolichos bean in *Kharif*; French bean, in *Rabi*) | West Bengal |
| Intercropping ginger with coriander followed by leafy vegetables (Grow ginger and coriander in 2:2 ratio. After harvesting coriander, grow leafy vegetables in place of coriander) | Sikkim |

**Intercropping systems produced higher ginger crop equivalent yields, showing incremental yield increases ranging from 6% to over 300% over respective state averages. B:C Ratio improved significantly under optimized intercropping practices, reaching up to 4.02 (West Bengal) and 3.47 (Mizoram) compared to sole cropping.**







# GINGER

## PGPR, *Bacillus safensis* for enhanced phosphorous and zinc utilisation efficiency

**Application of *Bacillus safensis based PGPR* biocapsules permits a 25% replacement of P-fertilizer and 50% Zn-fertilizer with an overall mean yield advantage of 18.80%, with a benefit-cost (B:C) ratio of 2.49, applied at a dose of 1 biocapsule dissolved in 100 litres of water with 3-5 litres of the solution applied per bed measuring 3×1 m.**

**This technology is recommended for Kerala, Andhra Pradesh, West Bengal, Uttar Pradesh, Arunachal Pradesh and Odisha**



# Coriander

## Growth regulators for improving the yield and quality of coriander

| Agro-Climatic Region | Recommended States | Recommended PGR Technology | Yield Advantage v/s Control | Increment in Income per Invested |
|---|---|---|---|---|
| Northern India (Semi-arid region) | Rajasthan, Haryana | SA@ 100 ppm | 12.00% – 16.50% | ₹ 10.25 |
| Central India (Central plateau, sub-tropical, mild winters) | Madhya Pradesh, Chhattisgarh | BA@ 20 ppm | 54.53% | ₹ 0.63 |
| Southern India (Warm, humid tropics, short/mild winters) | Tamil Nadu, Andhra Pradesh | SA@ 50 ppm | 27.67% | ₹ 21.52 |

Where SA: Salicylic acid; BA: Benzyladenine

**Location-specific foliar application of PGRs (Salicylic Acid and Benzyl Adenine) at 30 and 60 DAS significantly boosts coriander seed yield ranging from 12.00% to 54.53% over untreated control. The technology demonstrates high economic viability, delivering substantial returns of up to ₹ 21.52 per rupee invested in Southern India and ₹ 10.25 in Northern semi-arid tracts.**

# CUMIN

## Eco-friendly management of cumin blight




**Cumin growers of Gujarat and Rajasthan are advised for seed treatment with *Bacillus subtilis* @ 10 g / kg seed along with *Pseudomonas fluorescens* @ 10 g / kg seed and four precautionary foliar sprays of *B. subtilis* 1.15 WP ($1x10^8$ cfu/g) @ 40 g / 10 L water + *P. fluorescens* 1.15 WP ($1x10^8$ cfu/g) @ 50 g / 10 L water for eco-friendly management of cumin blight.**

**This technology is recommended for Rajasthan and Gujarat**

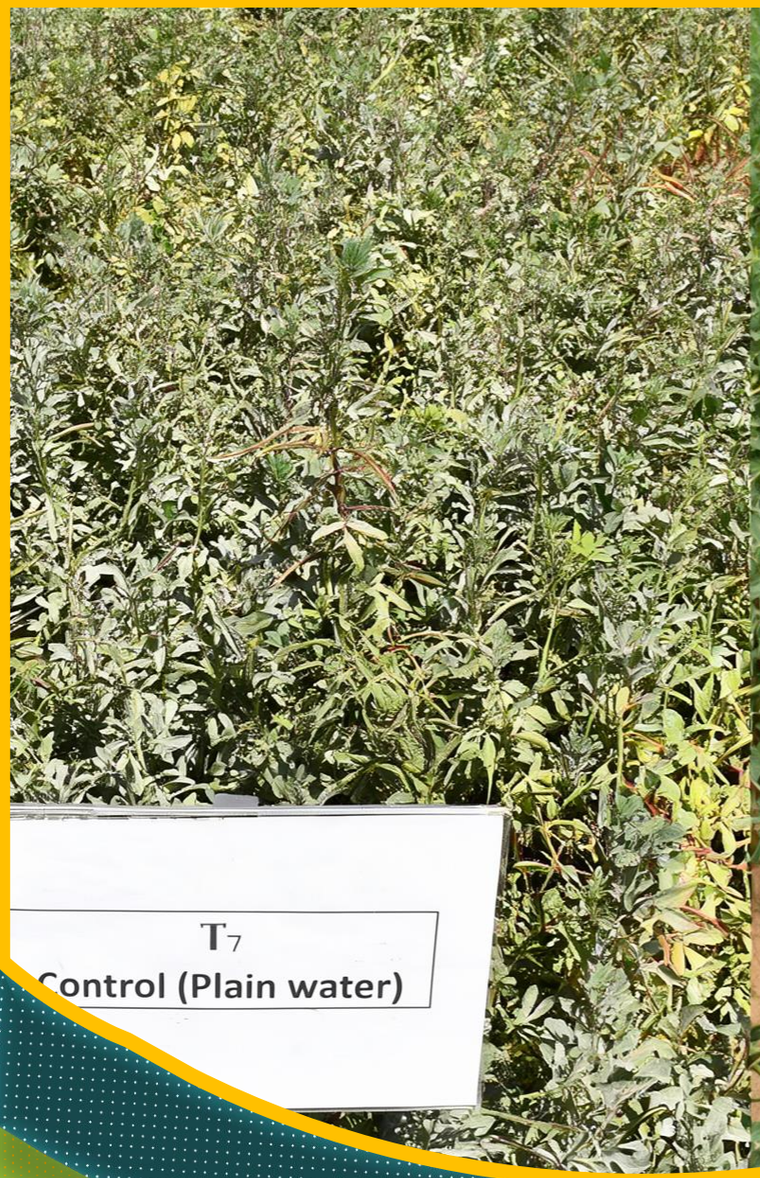


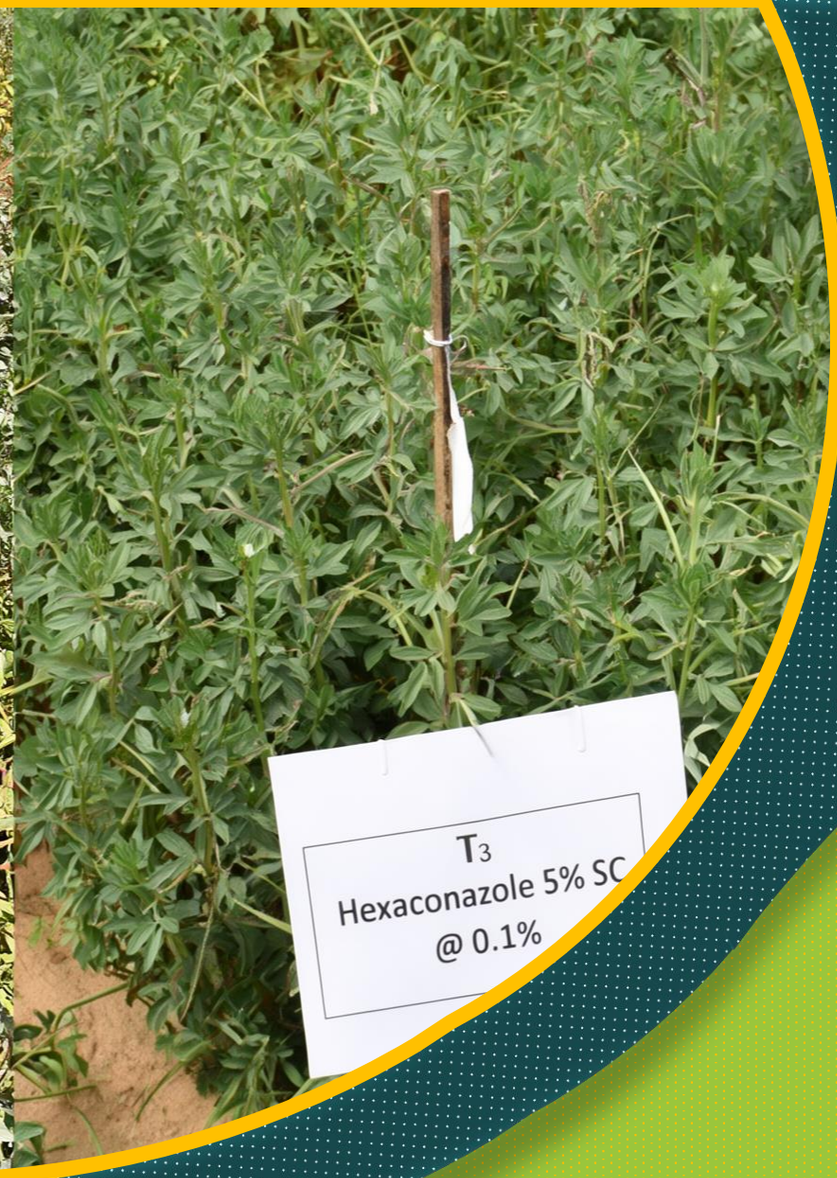
# Fenugreek

## Foliar application of growth regulators for maximizing seed yield and profitability in fenugreek

**Two foliar sprays of Brassinosteroid 1.0 ppm or Benzyl Adenine 20 ppm at 30 and 60 DAS to improve the seed yield by 25-30 % and net returns by Rs. 15000-17000/ha.**

**This technology is recommended for Rajasthan, Bihar, Haryana and Uttar Pradesh.**




# Fenugreek

## Management of powdery mildew

| States | Recommended Fungicide -Spray Schedule & Application Details |
|---|---|
| Gujarat | Foliar spray of Hexaconazole 5% SC @ 0.1% at the time of initial appearance of powdery mildew in fenugreek followed by second spray after 15 days |
| Rajasthan | Foliar spray of Hexaconazole 5% SC @ 0.1% or Tebuconazole 25.9% EC @ 0.1 % at the time of initial appearance of powdery mildew in fenugreek followed by second spray after 15 days |
| Madhya Pradesh | Foliar spray of Tebuconazole 25.9 % EC @ 0.1% at the time of initial appearance of powdery mildew in fenugreek followed by second spray after 15 days |

**Timely foliar application of recommended triazole fungicides (Hexaconazole 0.1%, Tebuconazole 0.1%, or Propiconazole 0.1%) initiated at the very first appearance of white powdery patches, followed by a second spray at 15 days, provides highly effective, economical disease control and protects seed yield significantly compared to untreated fields.**




**ICAR-All India Coordinated Research Project on Spices (AICRPS)**

**ICAR-Indian Institute of Spices Research**

Post bag No. 1701, Marikunnu P. 0.,
Kozhikode- 673 012, Keralam, India.
Phone: 0495-2731794/2731410, Fax: 0495-2731794,
e-mail: aicrpspices@gmail.com
Web site: www.aicrps.res.in