

AICRP on Groundnut

Year of Start: 1993



Background Information

Groundnut (*Arachis hypogaea* L.) belongs to the genus *Arachis* under family fabaceae. It is one of the important legume crop and cash crop of tropical and sub-tropical areas of world. Being a legume crop, it is valued for its nitrogen fixing capacity through the root nodule bacterium (*Rhizobium*). It contains 48 to 50 per cent of oil and 26 to 28 per cent of protein. It is the rich source of vitamins and minerals, so it is also called as poor man's almond. The ground nut cake can be used as food for animals and for manufacturing artificial fiber. The residual oil cake is rich sources of NPK and it is used as fertilizer.

Groundnut is adapted to various agro climatic conditions and soils. It is primarily grown during rainy (*kharif*) season under rainfed conditions in India, which accounts for 83 per cent of the total area. The remaining 17 per cent of the area is cultivated mostly in post rainy (*rabi/summer*) season with irrigation or residual soil moisture.

North- Eastern dry zone of Karnataka comprising Raichur, Gulbarga and Koppal is predominant groundnut producing tract with area of about 1.50 lakh ha with a production of 1.14 lakh tones and productivity of 742 kg/ha.

AICRP on Groundnut, Raichur center was started in the year 1993. In the recent years Raichur centre has emerged as a hot spot for late leaf spot and Peanut Bud Necrosis Disease.

Mandates of the centre

- Development of varieties with high yield and oil for rabi/summer irrigated and rice fallow situation.
- Development of high yielding varieties tolerant to foliar fungal diseases.
- Development of high yielding varieties tolerant to viral (PBND, PSND) diseases.
- Development of high yielding varieties tolerant to sucking and defoliators.
- Breeding for mid-season drought.
- Integrated management of foliar and soil borne diseases.

Staff position

Sr. No.	Position Sanctioned	Nos.	Name and Designation	Contact No. and Email ID
1.	Jr. Pathologist	1	Dr. Sreedevi S. Chavan Scientist (Pathology) and (Scheme Head)	9449263992 shrisatya@gmail.com headaicrpguasr@gmail.com
2.	Jr. Breeder	1	Dr. Rajanna B. Scientist (Breeding)	9739109267 raj.gpbr@gmail.com
4	Field/Technical Assistant	1	Mr. Budappa Attanur Sr. Field Assitant	9535207582
		2	Mr. Mallappa Ari, Sr. Field Assistant	9741179873
5	Field men	1	-	-

Technologies Developed

- A high yielding variety, **R-8808 (Apoorva)** with high Oil content of 48.5 %, resistant to pests diseases was released during the year 1994. It is recommended for rabi/summer season.
- A high yielding variety, **R-9251** with high oil content of 49.0 %, resistant to pests diseases was released during the year 1996. It is recommended for *kharif* season.
- A high yielding variety, **R-2001-3 (Ajeya)** with high oil content of 46.0 - 48.0 %, resistant to pests and diseases was released during the year 2008. It is a drought tolerant variety which recommended for *kharif* season.
- A high yielding variety, **R-2001-2 (Vijetha)** with high oil content of 46.0 - 48.0 %, resistant to pests and diseases was released during the year 2010. It is recommended for *kharif* season. It is used as a national check in the AICRP breeding programmes.
- A high yielding variety, **Kadiri-9** with high oil content of 48.0-50.0%, adopted in the year 2015. Moderately resistant to pests and diseases. It is recommended for *kharif* and rabi/summer season. It is tolerant to drought.
- A high yielding variety, **KDG-128** with high oil content of 48.0-50.0%, adopted in the year 2018. Moderately resistant to pests and diseases. It is recommended for *kharif* season.
- **Management of stem rot of groundnut through bio-agent:** Seed treatment of groundnut with Trichoderma @ 4 g/kg seed
- **Management of stem rot of groundnut :** Seed treatment with combi fungicide Carbendazim+ Mancozeb (Sprint) @ 3 g/kg seed
- **Management of PBNB through cultural practices:** Intercropping of groundnut with bajra or pignon pea or Jowar in the ratio of 3:1 to reduces the incidence of peanut bud necrosis disease of groundnut
- **Integrated management of stem rot of groundnut:** seed treatment with Trichoderma @ 4 g/kg seed with deep ploughing during summer
- **Management of stem rot of groundnut:** Seed treatment with Tebuconazole (1.5 g/kg) or Propiconazole (2ml/lit) or Vitavax (2 g/lit)
- **Chemical control of rust of groundnut:** Spraying of Hexaconazole (0.1%) at 35 and 50 DAS.
- **Chemical control of stem rot of groundnut:** Seed treatment of Tebuconazole @ 1 g/kg seed
- **Bio-intensive management of major foliar diseases and stem rot of groundnut** by seed treatment with Trichoderma @ 5 g/kg seed + Pseudomonas @ 5 g /kg seed + soil application of

FYM enriched with Trichoderma and Pseudomonas 4 kg each at the time of sowing followed by foliar application of Trichoderma @ 5 g/lit + Pseudomonas @ 5 g /lit at 30 and 45 days after sowing.

- **Management of Wilt/Root rot complex of groundnut** by seed treatment with combi fungicide Carbendazim+ Mancozeb(Sprint) @ 3 g/kg seed.
- **Management of stem rot of groundnut:** Seed treatment with Tebuconazole (1.5 g/kg) or Propiconazole (2ml/lit) or Vitavax (2 g/lit)
- **Management of soil borne and foliar diseases:** Seed treatment with Trichoderma (10 g/kg), soil application of Castor cake (250 kg/ha) and spraying of Hexaconazole (1ml/lit) at 45 and 60 DAS or seed treatment with Tebuconazole (1.5 g/kg) and spraying of Tebuconazole (1 ml/lit) at 45 and 60 DAS or Seed treatment with Mancozeb (3 g/kg seed) and spraying of Hexaconazole 1ml/lit) at 45 and 60 DAS.
- **Management of PBNB through botanicals and monocrotophos in groundnut:** Spraying of sorghum leaf extract (1:10) + Monocrotophos (1.25 ml/lit) at 20 and 30 DAS to reduce incidence of PBNB and leaf miner in groundnut in PBNB endemic
- **Management of groundnut leaf miner through chemical:** spraying 2 ml of Profenophos 50 C per litre of water on 30th and 45th days after sowing
- **Integrated management of insect pests in irrigated groundnut:** Application of neem cake @ 500 kg/ha, boarder cropping with pearl millet, castor as a sprinkle crop, pheromone traps for Spodoptera @ 5/ha, need based application of insecticides monocrotophos/quinolphos.
- **Management of defoliators** through Flubendiamide 48SC @ 0.075ml/lit and Spinosad 45 SC @ 2ml/lit
- **Management of groundnut defoliator pests using botanicals (R/S):** Pongamia oil @ 3 ml/l or Azadirachtin 3% @ 3 ml/lit or Neem oil @ 3.0 ml/lit or Pongemia oil 50% plus Neem oil 50% @ 3 ml/l were found effective.
- **The entries namely** NRCGCS-83, NRCGCS-124, NRCGCS-180, NRCGCS-222, NRCGCS-21, NRCGCS-77, NRCGCS-85 and NRCGCS-86 identified as multiple disease resistant groundnut genotypes. Registered at National Bureau of Plant Genetic Resources (NBPGR), New Delhi in collaboration with DGR, Junagadh.