

AICRP on Linseed

Mandates of the center:

- Genetic enhancement for seed yield, quality traits and resistance against biotic and abiotic stresses.
- Breeding for high yielding varieties for different cropping and agro-ecological situations.

Objectives:

Breeding:

1. Collection, evaluation and maintenance of linseed germplasm at Raichur center.
2. Breeding for high seed yield types suited for Linseed growing areas of Karnataka.
3. Breeding for early maturing genotypes and their evaluation.
4. Co-ordinated varietal trials.

Pathology:

1. Survey of Linseed diseases prevailing at the Raichur center.
2. Screening of Linseed germplasm for powdery mildew disease.
3. Uniform Disease Nursery (UDN) trial for powdery mildew disease.
4. Uniform Disease Nursery (UDNA) trial for powdery mildew disease under artificial condition.
5. Screening of elite entries for powdery mildew disease.
6. Initial Disease Nursery Screening (IDSN) trial for powdery mildew disease.
7. Screening of Coordinated Breeding trials for Powdery mildew disease.
8. Monitoring of disease in Agronomy trials.

Agronomy:

1. To find out suitable moisture conservation practice for Linseed cultivation under rainfed condition.
2. To find out suitable variety of Linseed for chickpea + Linseed (4:2) intercropping system for higher productivity and profitability.
3. To find out suitable model for Phosphorus management in greengram - linseed cropping system.

4. To find out suitable model for Integrated Nutrient Management in greengram - linseed cropping system.
5. Comparative performance of linseed varieties in adoption to climate change.

Major achievements

Breeding:

- **Variety released are to be mentioned in tabular form:**

Name	Yield (kg/ha)	Oil content(%)	Oil yield (kg/ha)	Major traits	Recommended states
NL-115	800	39 – 41	320	<ul style="list-style-type: none"> • Bold seeded type • Resistant to powdery mildew disease. • Moderately resistant to wilt and bud fly • Tolerant to drought 	Zone 1, 2 and 3 of Karnataka.

1. A promising variety NL-115 resistance to powdery mildew has been identified and released in 2013 for zone-1, 2 and 3 of Karnataka state.
2. Entry RMLS-11 (Sel. From malgatti local) contributed to Co-ordinated trial and promoted to Advanced Varietal Trial first year testing under Irrigated condition for Zone-II.
3. Contributed one entry RCRL-70 (BAU 9803 x CI 1624) to coordinated Initial Varietal Trial under rainfed condition.
4. Two mutants from NL-115 and RCRL-14 (Padmini x T-397) are under pipeline for state multilocation trial.
5. RCRL-90 (Malgatti x C-429-3), RCRL-115 (NL-115 x FRW-12), RCRL-82 (NL-115 x KL-168), RCRL-7 (RL-993 x Janki), RCRL-36 (Rajgera local x RKD-3) are under station trial.
6. In the process of identifying temperature tolerant lines to our zone A-198, GS-428, KL-137, R-5-6, GS-203, BR-25, A-429, A-98, GS-54, GS-220A, GS-205, A-116, NP-RR-492, GS-64 were found to be temperature tolerant lines.
7. Entries NL-97, LSL-93, SLS-72, RLC-128 and NL-263 were found early types.
8. The germplasms GS-61, GS-64, LC-2279-4, GS-100, PCL-57, EC-22596, EC 41595, EC 99006 and EC 41636 found resistant to powdery mildew as well as promising based on the plant type or the seed yield.
9. Out of 100 germplasms screened, 22 germplasms namely, GS-61, PCL-57, GS-85, GS-111, Fatehpur, GS-64, GIF White, GS-40, ES-1476, FRW-6, Flake C-16, Gs-20, GS-41,

GS-25, Flax-16, GS-119, ES-14600, GS-138, GS-39, EX-313-23, GS-37 and GS-52 were recorded superior yield over the best check (NL-97).

10. Four local land races/ farmers' varieties were collected during the period and these will be further tested in multi location trials at Bidar, Gulbarga, Raichur and Bijapur.
11. A study on "Screening of linseed germplasm lines for drought tolerance through root biomass studies" in that 10 promising linseed genotypes identified (CI-1924, GS-105, BENGAL-70, BENGAL-46, ES-13239, A-116, GS-205, NL-97-26, EC-1388 and GS-139) with higher Water Use Efficiency and Drought Tolerance based on root parameters.