

MARKAZ-09: A Promising Lentil Variety



Vigorous stand establishment of **Markaz-09**.



Heavy podding of **Markaz-09**(NARC-06-1) at maturity, devoid of leaves but still green branches, indicating drought and lodging resistance.



Breeder's Nucleus Seed (BNS) production field of **Markaz-09**.



Markaz-09 at farmer's field (Fatehjang, District Attock).

Contributors:

Dr. Asghar Ali (Breeding/Variety development)

Dr. Shaukat Hussain (Pathological aspect)

Dr. Samina Khalil (Nutritional aspect)

Challenge

- All lentil varieties released in the country during last fifty years were low yielding and prone to lodging.
- None of these varieties had resistance against two major diseases; *Ascochyta* blight and rust.
- Also, those varieties were not drought tolerant.
- Country was compelled to import 50% of its domestic need.
- Challenge was to develop a high yielding variety with desirable traits like, drought tolerance, lodging and multiple disease resistance, bold-seededness in micro-sperma, red cotyledon colour, black-spotted testa, free from hard-seededness, high protein content and good taste (cooking quality).

Interventions

- Research for development of *ideotype* lentil variety was initiated in 2000 and the parental lines were acquired from ICARDA and Canada.
- The lines were evaluated and characterized before putting into crossing scheme. Shuttle breeding and other innovative approaches were adopted to minimize the time for variety development.
- Early generations were tested for quantitative and qualitative traits. After attaining homozygosity, the material was put into yield testing at multi-locations in different agro-ecological zones for wider adaptability. It took only 9 years from cross to release.

Outcome

- The NARC lentil variety, **Markaz-09**, with all desirable traits for its sustainability has been developed & released in 2009 for barani as well as irrigated areas of the country.
- The variety is currently cultivated on 6,000 ha, mainly in Potohar region.
- The variety has a yield potential of 3.2 tons per ha.
- Its average yield in field is 1.8 tons per ha which is 121-135% higher than check varieties (Masoor-93 & NIAB Masoor-06).
- The variety also has reduced cooking time by 5-10%.

Way Forward

- Development of contractual seed production system for rapid multiplication and accessibility to farmers as certified labelled seed.
- Development and release of new high yielding varieties with all desirable characteristics.