

## ALR 2 - A NEW GROUNDNUT VARIETY FOR POLLACHI TRACT

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### ABSTRACT

An attempt to evolve a groundnut variety with superior yield, high oil content and resistant to abiotic and biotic stresses has resulted in the isolation of a promising culture ALG 56. It is a pureline selection from ICGV 86011 (DH 3-20 x USA 20) (NcAc 2232). This bunch groundnut matures in 105 days and is suitable for *Chitraipattam* (April). It out yielded the checks Co 2 and VRI 2 with substantiated yield and field tolerance to diseases and pests. High oil content of 52% and a seed dormancy period of 15 days are the additional advantages of this variety. It is a good quality fodder too. Hence it was released as ALR 2 for rainfed and irrigated conditions of Pollachi tract.

In Coimbatore district, Pollachi is the only taluk which is benefitted by summer showers besides South West and North East monsoon rains. Groundnut is being raised in a total area of 27,000 ha and 60 per cent of which is rainfed. This tract is an endemic area for rust and late leaf spot diseases and the pests like leafminer, thrips and leaf hoppers. The varieties grown at present are highly susceptible for the above said diseases and pests. Hence efforts were made at the Agricultural Research Station, Aliyarnagar to evolve a groundnut variety combining superior yield, high oil content and resistance to the diseases and pests and the outcome is the variety ALR 2.

### MATERIALS AND METHODS

The groundnut culture ICG 86011 was received from ICRISAT through AICORPO network during the year 1986. It was a double cross derivative of (DH 3-20 x USA 20) x NcAc 2232). The population when raised was found to be heterogeneous with morphological deviants which warranted a critical study of it. From the evaluation, 20 single plants were selected and studied under station trials during 1986-89. Among those, studied, an elite line was isolated and designated as ALG 56. Later on the culture was tested in multilocation trials at different Research Stations of Tamil Nadu during 1990-1993 and in adaptive research trials in the farmers' holding of Pollachi tract during 1991-93.

The evaluation was carried during both *khari* and *rabi* seasons, with the checks Co 2 and VRI 2 and the recommended agronomic and management practices were followed. The biometrical observations on plant stand (initial and final), initial

flowering and 50 per cent flowering, dry pod yield dry haulms yield, oil content, 100 kernel weight were recorded. The culture ALG 56 was also tested for its reaction to rust and late leaf spot under controlled conditions. Incidence of rust and late leaf spot diseases were scored based on 9 point disease scale (Subrahmanyam *et al.*, 1980).

### RESULTS AND DISCUSSION

The results of yield trials conducted during 1986-93 at Agricultural Research Station, Aliyarnagar are furnished in Table- 1. The improved groundnut culture ALG 56 recorded consistently higher pod yield over the checks Co 2 and VRI 2. The mean pod yield of ALG 56 was 1983 kg/ha which was 21 and 22 per cent higher than Co 2 and VRI 2 respectively.



**Table 1. Performance of groundnut Culture ALG 56**

Year and season	Pod Yield (kg/ha)		
	ALG 56	Co2	VRI 2
1986 <i>Kharif</i>	1815	1505	-
1987 <i>Kharif</i>	1950	1800	-
1988 <i>Kharif</i>	2250	1792	-
1989 <i>Kharif</i>	1748	1680	1690
1989-90 <i>Rabi</i>	2250	1907	1950
1990 <i>Kharif</i>	2048	1695	1714
1990-91 <i>Rabi</i>	3475	3308	3142
1991 <i>Kharif</i>	763	758	686
1991-92 <i>Rabi</i>	2553	1864	1910
1992 <i>Kharif</i>	1374	675	663
1992-93 <i>Rabi</i>	1457	1079	1213
1993 <i>Kharif</i>	2115	1655	1695
Mean	1983	1643	1629
Percentage increase over		21	22

In the multilocation trials conducted during 1990-1993 at different research stations in Tamil Nadu, the culture ALG 56 recorded a mean pod yield of 1428 Kg/ha representing an increase of 19 per cent and 6 per cent over Co 2 and VRI 2 respectively. Based on the consistent performance in research stations, the culture ALG 56 was promoted to adaptive research trials and a total of 24 trials was conducted in Pollachi tract during

1991-93. It registered a pod yield of 1915 kg/ha against 1623 and 1641 kg/ha of Co 2 and VRI 2 respectively.

The better yield realised by the culture ALG 56 is due to its field tolerance to rust, late leaf spot and pests like jassids, thrips and leaf miner as compared to checks. ALG 56 is possessing a high oil content upto 52 per cent as against 49.1 and 47.6 per cent possessed by the checks Co 2 and VRI 2 respectively. ALG 56 remains green even after its maturity and yields a good quality fodder. The dormancy period of 15 days possessed by this culture is a boon to the farmers of Pollachi tract where the non dormant varieties may germinate in the field itself due to untimely monsoonic rains at late maturity and harvest phases.

Based on the above desirable features, the culture ALG 56 was approved by the state variety release committee of Tamil Nadu during January, 1994 and released as an improved groundnut variety ALR 2 by the Tamil Nadu Agricultural University, Coimbatore for large scale cultivation.

#### REFERENCES

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## ECONOMICS OF RICE CULTIVATION UNDER DIFFERENT LEVELS OF NITROGEN AND WATER MANAGEMENT PRACTICES

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#### ABSTRACT

Results of field experiment on the economics of water and N management practices on low land rice indicated that grain yield increased upto 150 kg N ha<sup>-1</sup> in the South West Monsoon (SWM) and Summer seasons. Continuous 5 cm submergence (I<sub>1</sub>) or recouping submergence one day after disappearance (I<sub>2</sub>) did not influence grain yield during SWM whereas continuous submergence was necessary to record more grain yield during summer. Straw yield recorded were highest with continuous submergence in both the seasons and with 225 kg N ha<sup>-1</sup> in SWM season and 150 kg N ha<sup>-1</sup> in summer season. Gross and net returns as well as benefit cost ratio were highest with 150 kg N ha<sup>-1</sup> in both the seasons. A gross return of Rs.7121/- and 7432 ha<sup>-1</sup> were obtained with continuous submergence in SWM and summer seasons, respectively, whereas, net return and benefit cost ratio were highest with submergence one day after disappearance of water. The variety IR 50 outyielded CO37 in all the aspects of study. Recouping submergence one (SWM) or three (Summer) days after disappearance of water recorded more return per rupee invested on water and N in both the seasons. Application of N at 150 kg ha<sup>-1</sup> gave higher return per rupee on water, whereas, the net return per rupee on N decreased beyond 75 kg N ha<sup>-1</sup>.

Continuous land submergence during the growth period of rice is widely practiced in most of

the rice growing areas of our country. But this leads to considerable loss of water through deep