

EVALUATION OF ICRISAT SHORT-DURATION AND DROUGHT TOLERANT GROUNDNUT VARIETIES IN MPUMALANGA 1997-99

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1. Introduction. Groundnut (*Arachis hypogaea* L.) is the most important legume component of the cropping systems practised by the dryland, smallholder farmers in the Lowveld region of Mpumalanga Province. Almost all the groundnuts produced are marketed locally as local sales provide substantially higher prices than the price offered by organised national markets. The major constraints of groundnut production in this region are foliar diseases, inaccessibility to improved seeds, drought and poor agronomic practices (Mathews and Beck, 1994). The groundnut programmes of the Lowveld Research Unit is aimed at identifying superior varieties with higher and stable yield, resistance to foliar diseases and tolerant to adverse environmental factors without causing additional input costs to the farmer.

2. Methods and materials. The replicates of the Seventh International Short-duration (VII-ISGVT97) and Fourth International Drought Resistant (VII-IDRGVT97) groundnut varieties developed at ICRISAT-India were evaluated in two separate trials during the 1997 and 1998 cropping seasons at Malekutu in Mpumalanga. The local cultivar *Anel* was used as the control in both the trials.

3. Results and discussion. In the short-duration variety trials, fourteen ICRISAT lines out yielded *Anel* (Table 1). The increases, however, were not large enough to be significant. The highest average seed yield was obtained in ICGV93420 (1662kg ha⁻¹), which was ready for harvest in 132 days after planting. This variety had lower shelling per cent and seed-mass than *Anel*. Although eight entries recorded greater seed yields than *Anel* in the drought resistant variety trials, the increases were not large enough to be significant (Table 2). ICGV92116 gave the highest average yield (1733kg ha⁻¹) and the varieties, ICGVs 92120 and 86635 recorded significantly lower shelling percentages and seed mass than *Anel* (p=0.05).

4. Conclusion. Based on the results obtained over the two seasons, the varieties ICGVs 93420, 93392, 92217, 92229, 92116, 92121, 93233 and 93261 are selected for further evaluation across the Province.

5. References.

Mathews, C., and Beck, B. D. A. 1994. Evaluation of foliar diseases resistant ICRISAT groundnut varieties in KaNgwane, South Africa. pages 73-78. in Sustainable groundnut production in southern and eastern Africa: proceedings of a Workshop, 5-7 Jul 1994, Mbabane. Swaziland (Ndunguru, B. J., Hilderbrand, G. L., and Subrahmanyam, P., eds.). Patancheru 502 324, Andhra Pradesh, India, ICRISAT.

Table 1: Performance of ICRISAT Short-duration groundnut varieties, 1997-99

SNo	Entries	1998-99				Seed Yield kg ha ⁻¹		
		SHP	HSM	DTH	PYH	98-99	97-98	97-99
1	ICGV 93420	67.67	28.44	132	3380	2287	1036	1662
2	ICGV 93392	77.33	38.41	128	2718	2096	1084	1590
3	ICGV 92217	73.33	39.15	129	2951	2164	910	1537
4	ICGV 92229	74.33	42.84	129	2952	2193	809	1501
5	ICGV 91155	75.67	37.00	129	2450	1868	1080	1474
6	ICGV 93382	77.33	45.11	128	2567	1992	949	1471
7	ICGV 92267	67.00	29.96	128	3080	2065	792	1429
8	ICGV 94361	74.67	40.67	129	2580	1917	929	1423
9	CHICO	76.33	29.86	131	2353	1794	1036	1415
10	ICGV 92218	72.00	33.03	130	2996	2158	563	1406
11	ICGV 93370	73.67	43.45	133	2815	2073	638	1356
12	ICGV 92222	76.00	37.91	131	2623	1989	719	1354
13	ICGV 93388	68.67	30.18	133	3019	2074	385	1230
14	ICGV 92206	76.33	27.79	128	2023	1545	844	1195
15	ANEL	75.67	36.39	131	2405	1824	452	1138
16	ICGV 92195	69.67	33.89	134	1847	1290	656	973
Mean		73.48	35.88	130	2672	1958	811	1385
CV %		3.60	5.84	1.58	15.59	16.41	29.5	15.94
LSD (P=0.05)		4.41	3.49	33.4	695	NS	398	NS

Table 2: Performance of ICRISAT Drought-resistant groundnut varieties, 1997-99

SNo	ENTRIES	1998-99				Seed yield: kg ha ⁻¹		
		FS	SHP	HSM	PYH	98-99	97-98	97-99
1	ICGV 92116	110	74.0	43.1	3210	2378	1088	1733
2	ICGV 92121	114	73.7	59.3	2958	2165	1245	1705
3	ICGV 93233	106	70.7	49.9	2735	1920	1131	1526
4	ICGV 93261	117	63.0	35.8	3032	2144	865	1505
5	ICGV 92126	116	70.7	49.1	2543	1815	990	1403
6	ICGV 92019	103	69.3	42.1	2639	1833	950	1392
7	ICGV 93260	105	69.3	33.3	2366	1640	918	1279
8	ANEL	134	70.3	37.8	2434	1701	715	1208
9	ICGV 93269	127	73.0	42.9	2144	1571	797	1184
10	ICGV 92118	120	73.3	37.4	2228	1643	635	1139
11	ICGV 93255	105	76.7	49.4	1649	1256	996	1126
12	ICGV 92120	124	61.7	30.8	2547	1567	676	1122
13	ICGV 92113	123	72.3	48.3	2029	1471	610	1041
14	ICGV 93277	118	66.3	32.4	1972	1309	705	1007
15	ICGV 93232	112	69.7	43.6	1287	904	970	937
16	ICGV 86635	111	60.7	31.4	881	530	286	408
Mean		115	69.7	41.6	2291	1615	849	1232
CV %		7.2	7.1	10.7	21.18	21.27	23.3	20.85
LSD (P=0.05)		13.8	8.2	6.99	809	573	330	545

FS: Final Stand at harvest; PYH: Pod yield kg/ha; SHP: Shelling per cent; HSM: Hundred seed mass