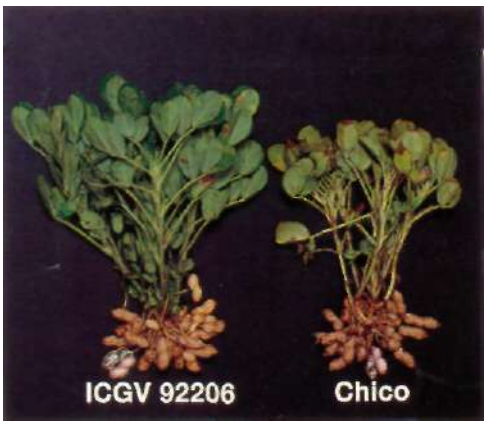
Groundnut Elite Germplasms
ICGV 92196, ICGV 92206, ICGV 92234, and ICGV 92243



- **Short-duration (<90 days in the rainy season), high-yielding varieties**
- **Average 100-seed mass 35-38 g**
- **Average shelling turnover 63-72%**
- **Average oil content 46.8-48.8%**
- **Average protein content 23.3-24.3%**

Plant Material Description no. 76

International Crops Research Institute for the Semi-Arid Tropics
Patancheru 502 324, Andhra Pradesh, India

1997

Purpose of description

ICGV 92196, ICGV 92206, ICGV 92234, and ICGV 92243 are short-duration, high-yielding varieties. ICGV 92206 and ICGV 92243 mature in 75-80 days after sowing (DAS), and ICGV 92196 and ICGV 92234 in 80-85 DAS in the rainy season.

Origin and development

These varieties were developed at ICRISAT Asia Center (IAC), Patancheru, India. ICGV 92196 originated from the cross Chico x ICGV 86052; ICGV 92206 from Chico x ICGV 86533; ICGV 92234 from ICGV 86162 x Shuikouyazai; and ICGV 92243 originated from ICGV 86093 x ICG 261. Chico is a short-duration Spanish germplasm line released in the USA. ICGV 86052, ICGV 86162, and ICGV 86093 are high-yielding Spanish varieties developed at IAC. ICGV 86533 is an insect-pest resistant variety developed at IAC. Shuikouyazai is a Spanish landrace from China, and ICG 261 is a Valencia line from Argentina. The pedigrees of these varieties are:

ICGV 92196 = Chico x ICGV 86052 F_2-B_1-B_1-B_1-B_2-B_1-B_1-B_1

ICGV 92206 = Chico x ICGV 86533 F_2-P_{11}-B_1-B_1-B_2-B_1-B_1

ICGV 92234 = ICGV 86162 x Shuikouyazai F_2-B_1-B_1-B_2-B_1

ICGV 92243 = ICGV 86093 x ICG 261 F_2-B_1-B_1-B_1-B_1-B_1-B_1-B_1-B_1

Description

Details of plant, pod, and seed characteristics of these varieties are given in Table 1.

Performance

These varieties were evaluated in two rainy and two postrainy seasons in replicated yield trials which were harvested when the crop accumulated 1240°Cd (equivalent to 75 DAS in the rainy season at IAC) and 1470°Cd (equivalent to 90 DAS in the rainy season at IAC). At 1240°Cd, ICGV 92196 had an average pod yield of 1.6 t ha^{-1}, which was 58.4% more than the short-duration popular Indian cultivar JL 24 and 83.9% more than the short-duration germplasm line Chico. ICGV 92206, at 1.83 t ha^{-1}, was 81.2% (JL 24), and 110.3% (Chico) superior. ICGV 92234 (1.56 t ha^{-1}) scored 54.5% (JL 24), and 79.3% (Chico) more, and ICGV 92243 produced an average 1.65 t pods ha^{-1}, which was 63.4% more than JL 24, and 89.7% more than Chico.

At 1470°Cd they produced, on average, 11.3-24.7% more pod yield than JL 24, and 67-87% more pod yield than Chico. The increase in pod yield from 1240°Cd to 1470°Cd was 8.1% in ICGV 92196, 2.2% in ICGV 92206, 7.1% in ICGV 92234, and 3.6% in ICGV 92243 compared to 48.5% in JL 24 and 14.9% in Chico (Table 2). The increase in shelling percentage from 1240°Cd to 1470°Cd was 15.0% in ICGV 92196, 10.7% in ICGV 92206,

6.8% in ICGV 92234, and 13.3% in ICGV 92243 compared to 32.7% in JL 24 and 9.4% in Chico. ICGV 92206 and ICGV 92234 were also evaluated at other locations in India, and in Vietnam and Malawi. ICGV 92206 produced 10-46% more pod yield, and ICGV 92234 13-27% more pod yield, and matured 1-2 weeks earlier than the local cultivars. Average shelling percentages were 69 (ICGV 92196), 72 (ICGV 92206), 63 (ICGV 92234), and 68 (ICGV 92243). Average 100-seed mass was 35-36 g for ICGV 92196, ICGV 92206, and ICGV 92234 and 38 g for ICGV 92243. Average oil content ranged from 46.8 to 48.8%, and average protein content from 23.3 to 24.3% (Table 2).

Table 1. Plant, pod, and seed characteristics of ICGV 92196, ICGV 92206, ICGV 92234, and ICGV 92243, ICRISAT Asia Center, Patancheru, India, rainy season 1992.

Characteristic	ICGV 92196	ICGV 92206	ICGV 92234	ICGV 92243
Plant characteristics				
Growth habit	Erect	Erect	Erect	Erect
Branching pattern	Sequential	Sequential	Sequential	Sequential
Stem pigmentation	Present	Present	Present	Present
Leaf shape and color	Elliptic, green	Elliptic, green	Elliptic, green	Elliptic, green
Average height of main axis (cm)	48	37	43	45
Average canopy breadth (cm)	42	54	39	42
Average number of primary branches	4-5	4-5	4-5	4-5
Average number of secondary branches	1	2	1	5
Pod characteristics				
Beak	Slight	Slight	Slight-moderate	Slight
Constriction	Slight	Slight	Moderate	Slight
Reticulation	Slight	Slight	Moderate	Slight
Length and breadth (mm)	25,12	24,11	29, 13	25,12
Seeds per pod	2-1	2-1	2-1	2-1-3 (3s are rare)
Seed characteristics				
Color	Tan	Tan	Tan	Red
Length and breadth (mm)	13,7	12,7	12,9	13,8

Table 2. Performance of ICGV 92196, ICGV 92206, ICGV 92234, and ICGV 92243, ICRISAT Asia Center, India.

Variety	Pod yield[1] (t ha^{-1})			Shelling percentage[5]	100-seed mass[5] (g)	Oil content[5] (%)	Protein content[6] (%)
	1240[2] °Cd	1470[3] °Cd	IPY[4]				
ICGV 92196	1.60	1.73	8.1	69	36	48.8	24.3
ICGV 92206	1.83	1.87	2.2	72	35	48.3	24.3
ICGV 92234	1.56	1.67	7.1	63	36	48.5	23.3
ICGV 92243	1.65	1.71	3.6	68	38	46.8	23.3
Control							
JL 24	1.01	1.50	48.5	65	42	46.5	27.3
Chico	0.87	1.00	14.9	70	30	48.8	22.3

1. Average of four seasons.
2. Equivalent to 75 days after sowing (DAS) in the rainy season at IAC.
3. Equivalent to 90 DAS in the rainy season at IAC.
4. Increase in pod yield from 1240°Cd to 1470°Cd.
5. Average of four seasons at the 1470°Cd harvest.
6. Average of three seasons at the 1470°Cd harvest.

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