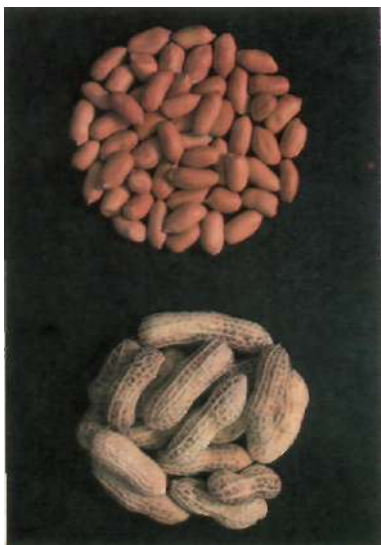


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# Groundnut Variety

## ICGV 86590

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- High-yielding variety resistant to rust, and tolerant of late leaf spot
- Released for rainy-season cultivation in Andhra Pradesh (except northern coastal districts), Karnataka, Kerala, southern Maharashtra, and Tamil Nadu in India
- Matures in 96-123 days in the rainy season in India
- Shows low field incidence of bud necrosis disease
- Shows low incidence of stem and pod rots
- Tolerant of *Spodoptera litura*
- Average shelling turnover 65%
- Average oil content 48%



ICRISAT

Plant Material Description no. 31

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

## Purpose of Description

ICGV 86590 was released in 1991 by the Central Sub-Committee on Crop Standards, Notification, and Release of Varieties, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, for rainy-season cultivation in Andhra Pradesh (except northern coastal districts), Karnataka, Kerala, southern Maharashtra, and Tamil Nadu in India, where rust (*Puccinia arachidis* Speg.) and late leaf spot [*Phaeoisariopsis personata* (Berk. and Curt.) v Arx] diseases cause significant pod yield losses in groundnut.

## Origin and Development

ICGV 86590 was bred and developed at ICRISAT Center, Patancheru, India. It derives its origin from a cross of Spanish variety, X 14-4-B-19-B, and rust- and late leaf spot-resistant Valencia germplasm line, PI 259747. Its pedigree is (X 14-4-B-19-B x PI 259747) F<sub>2</sub>-B<sub>2</sub>-**B<sub>1</sub>-B<sub>1</sub>-B<sub>1</sub>-B<sub>1</sub>-B<sub>2</sub>**. It was advanced by bulking resistant plants with uniform plant and pod characteristics in rainy-season disease nurseries that incorporate infector rows, where rust and late leaf spot occur naturally to near-epidemic proportions. It is adapted to low-input rainfed cultivation.

## Performance

ICGV 86590 has shown on average 22% pod-yield and 14% seed-yield advantages over the national control cultivar JL 24 in the All India Coordinated Research Project on Oilseeds (AICORPO) trials conducted during 1988-90 (Table 1). It has also outyielded other local cultivars; Co 2 by 30%, TMV 2 by 89%, KRG 1 by 38%, and TG 3 by 51% in the AICORPO trials.

ICGV 86590 is resistant to rust and tolerant of late leaf spot (Table 2). In addition, ICGV 86590 shows resistance to/tolerance of other biotic stresses (Table 3). It shows lower field incidence of bud necrosis disease than JL 24 at ICRISAT Center, Mainpuri (Uttar Pradesh), and Rajendranagar (Andhra Pradesh), in India. When compared with popular Indian cultivars, JL 24, Gangapuri, and Kadiri 3, it is less susceptible to stem and pod rots caused by *Sclerotium rolfsii*. It also suffered low levels of *Spodoptera* damage at ICRISAT Center and Dharwad, low levels of jassid (*Empoasca kerri* Pruthi) damage at Junagadh (Gujarat), and only slight attack by collar rot at Ludhiana (Punjab).

## Plant Characters

ICGV 86590, a Spanish variety, has an erect growth habit with sequential flowering, and medium elliptic, green to dark green leaves. It has four primary branches with occasional secondary branches. In India it matures in 96-123 days over different locations and years during the rainy season.

## Pod/Seed Characters

ICGV 86590 has mainly 3-seeded (occasionally, 4-, 2-, or 1-seeded) pods, with slight to moderate ridges, slight reticulation, and with slight to moderate beaks and constrictions. It has an average shelling turnover of 65%. Its seeds are tan-colored with a 100-seed mass of 32 g. The oil content in seeds averages 48%.

**Table 1. Performance of ICGV 86590 and control varieties in various AICORPO trials, Zone V<sup>1</sup>, rainy seasons 1988-90 in India.**

Trial <sup>2</sup>	Year	Number of locations	Mean yield of ICGV 86590 (t ha <sup>-1</sup> ) <sup>3</sup>	Increase over control variety (%)				
				JL 24	TMV 2	ICGV 87157	ICGV 87160 <sup>5</sup>	Girnar 1
IVT	1988	9	P 1.82	27.9	56.4	- <sup>4</sup>	-	-
			K 1.22	23.8	46.9	-	-	-
AVT-I	1989	9	P 1.94	15.3	-	28.2	-	-
			K 1.23	2.8	-	21.3	-	-
AVT-II	1990	7	P 1.62	25.0	-	-	42.8	15.1
			K 1.10	17.7	-	-	47.9	11.2
Average increase in pod yield (%)				22.0	56.4	28.2	42.8	15.1
Average increase in seed yield (%)				13.7	46.9	21.3	47.9	11.2

1. Zone V covers Andhra Pradesh (except northern coastal districts), Karnataka, Kerala, southern Maharashtra, and Tamil Nadu.

2. IVT = Initial Varietal Trial; AVT-I = Advanced Varietal Trial-I; AVT-II = Advanced Varietal Trial-II.

3. P = Pod yield; K = Kernel yield.

4. - = Not tested.

5. Yield comparisons based on five common locations only.

Sources:

Annual Progress Reports, Groundnut, 1988, 1989, and 1990. All India Coordinated Research Project on Oilseeds (AICORPO), Directorate of Oilseeds Research, Rajendranagar, Hyderabad, Andhra Pradesh 500 030. pp. B 37-38, pp. B 77, and pp. B 118.

**Table 2. Reaction of ICGV 86590 and control varieties to foliar diseases in AICORPO trials in India in 1988/89.**

Variety	Disease <sup>1</sup>	1988	1989		
			Dharwad	Latur	Aliyarnagar
ICGV 86590	Rust	3.66	1.4	1.4	3.5
	Late leaf spot	4.82	4.0	1.9	4.4
Local control	Rust	6.0	- <sup>4</sup>	4.3	6.2
		(JL 24) <sup>3</sup>	-	(Girnar 1)	(Co 2)
	Late leaf spot	6.25	9.0	4.7	8.2
		(JL 24)	(Dh 3-30)	(Girnar 1)	(Co 2)

1. Scored on a 1-9 scale, where 1 = no disease and 9 = 50-100% foliage destroyed.

2. Average of six locations for rust and 16 locations for late leaf spot.

3. Names in parentheses refer to local varieties.

4. - = Not tested.

**Table 3. Reaction of ICGV 86590 and popular Indian cultivars to other diseases and insect pests.**

	Bud necrosis disease <sup>1</sup>			Stem rot <sup>2</sup>			Pod rot <sup>3</sup>		<i>Spodoptera litura</i> <sup>4</sup>	
	ICRISAT Center		Main-puri	Rajendra-nagar	Dharwad	Latur	ICRISAT Center	ICRISAT Center		Dharwad
	1987/88	1988	1990	1990	1988	1988	1987/88	1987/88		1989
ICGV 86590	17.5	0	35.2	23.8	2.93	0.50	0.10	5.2	17.5	
Controls										
JL 24	50.8	25.0	48.3	82.2	13.35	23.70	19.0	9.2	52.5	
Gangapuri	.5	-	-	-	-	-	18.0	76.2	-	
Kadiri 3	-	-	-	-	-	-	8.0	64.4	-	
Dh 3-30	-	-	-	-	-	-	-	-	65.0	

1. Percentage of plants affected by bud necrosis disease.
2. Percentage of plants affected by stem rot caused by *Sclerotium rolfsii*.
3. Percentage of pods affected by *Sclerotium rolfsii*.
4. Percentage of leaflets damaged by *Spodoptera litura*.
5. - = Not tested.

## Plant Material Descriptions from ICRISAT

Leaflets in this series provide brief descriptions of crop genotypes identified or developed by ICRISAT, including:

- germplasm accessions with important agronomic or resistance attributes;
- breeding materials, both segregating and stabilized, with unique character combinations; and
- cultivars that have been released for cultivation.

These descriptions announce the availability of plant material, primarily for the benefit of the Institute's cooperators. Their purpose is to facilitate the identification of cultivars and lines and promote their wide utilization. Requests should be addressed to the Director General, ICRISAT, or to appropriate seed suppliers. Stocks for research use issued by ICRISAT are sent to cooperators and other users free of charge.

ICRISAT is a nonprofit, scientific, research and training institute receiving support from donors through the Consultative Group on International Agricultural Research. Its major mandate is to serve as a world center for the improvement of grain yield and quality of sorghum, millet, chickpea, pigeonpea, and groundnut, and to act as a world repository for the genetic resources of these crops. The plant materials announced in these leaflets are end-products of this work, which is aimed at enhancing the agricultural productivity of resource-poor farmers throughout the semi-arid tropics.