
Groundnut Variety

ICGV 87160 [ICG(FDRS) 10]



- High-yielding variety resistant to rust, and tolerant of late leaf spot
- Released for rainy-season cultivation in the states of Andhra Pradesh, Karnataka, and parts of Maharashtra in India
- Matures in 115 days in the rainy season
- Tolerant of bud necrosis disease
- Moderately resistant to leaf miner
- Tolerant of drought
- Average shelling turnover 67%
- Average oil content 48%



ICRISAT

Plant Material Description no. 30

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Purpose of Description

ICGV 87160, also known as ICG(FDRS) 10, was released in 1990 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 the states of Andhra Pradesh, Karnataka, and parts of Maharashtra in India, where rust and late leaf spot diseases cause serious problems to groundnut production. It also showed pod-yield superiority over local cultivars in Bangladesh (69% over Dacca 1), Myanmar (20% over Japanese Small), Sri Lanka (100% over Local), Thailand (19% over Tainan 9), the Philippines (67% over BPI Pn 9), and Niger (17% over 28-206).

Origin and Development

ICGV 87160 was bred and developed at ICRISAT Center, Patancheru, India. It was derived by the bulk pedigree method from a cross of a Spanish variety, Ah 65, and a rust-resistant Valencia germplasm line, NC Ac 17090. Its pedigree is (Ah 65 x NC Ac 17090) F₂-B₁-B₁-B₂-B₁-B₁-B₁-B₂. It was advanced in the rainy seasons in 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 87160 has shown an average pod-yield advantage of 20% over JL 24, 35% over TMV 2, 22% over J 11, and 9% over Kadiri 3 in All India Coordinated Research Project on Oilseeds (AICORPO) trials conducted during 1983 to 1986 (Table 1).

In large-scale demonstrations carried out jointly by ICRISAT and State Departments of Agriculture in Andhra Pradesh, Karnataka, Maharashtra, and Tamil Nadu during the 1987 and 1988 rainy seasons, ICGV 87160 substantially outyielded all the local cultivars with a pod-yield superiority ranging from 9 to 307% over the popular cultivars, Kadiri 3, JL 24, and S 206.

ICGV 87160 is resistant to rust and tolerant of late leaf spot. It has maintained its superiority in resistance to foliar diseases in India, Myanmar, Bangladesh, Thailand, Sudan, and the Republic of Guinea (Table 2).

In addition, ICGV 87160 shows resistance to/tolerance of other biotic stresses (Table 3). It shows good field tolerance of bud necrosis disease. When compared to the popular Indian cultivars, it is less susceptible to stem and pod rots caused by *Sclerotium rolfsii* and moderately resistant to groundnut leaf miner under field conditions. In a similar comparison with a popular Indian cultivar TMV 2, ICGV 87160 displayed lower leaf miner larval survival and adult acceptance rates under greenhouse conditions.

ICGV 87160 exhibits better tolerance of drought stress imposed from flowering to pod maturity, compared to the mean values for total biomass and total pod mass of 124 erect bunch varieties tested using a line-source sprinkler screening technique at ICRISAT Center.

Plant Characters

ICGV 87160, a Spanish variety (Natal cultivar group), 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. It matures in about 115 days in the rainy season, and has an average shelling turnover of 67%.

Pod/Seed Characters

ICGV 87160 has mainly 2-seeded (occasionally, 1 or 3-seeded) stubby pods, with moderate to prominent ridges, slight reticulation, and beaks and constrictions are either absent or less conspicuous. Its seeds are tan in color with a 100-seed mass of 36 g. They contain on average 48% oil, and 27% protein.

Table 1. Performance of ICGV 87160 and other control varieties in various AICORPO trials, Zone V¹, rainy seasons 1983-86.

Trial ²	Year	Number of locations	Mean yield of ICGV 87160 (t ha ⁻¹) ³	Increase over control variety (%)			
				JL 24	J 11	Kadiri 3	TMV 2
FDRVT	1983	7	P 2.57	12	22	- ⁴	-
FDRVT	1984	6	P 2.07	26	-	9	-
CVT(SB)	1985	5	P 1.98	13	-	-	29
			K 1.40	17	-	-	30
NET (SB)	1986	4	P 2.12	23	-	-	42
			K 1.45	21	-	-	32
Average increase in pod yield (%)				20	22	9	36
Average increase in seed yield (%)				17	-	-	30

1. Zone V covers the states of Andhra Pradesh, Karnataka, and parts of Maharashtra.
2. FDRVT = Foliar Diseases Resistance Varietal Trial, CVT = Coordinated Varietal Trial, NET = National Elite Trial, SB = Spanish bunch.
3. P = Pod yield, K = Kernel yield.
4. - = Not tested.

Source:

Annual Progress Reports, Groundnut, 1983/84, 1984, and 1985, Annual Kharif Oilseeds Workshops, 1984, 1985, and 1986, AICORPO. Directorate of Oilseeds Research, Rajendranagar, Hyderabad, Andhra Pradesh 500 030. pp. 209-210, p.91, and pp. 85-87.

Table 2. Reaction of ICGV 87160 and local groundnut varieties to foliar diseases in various countries.

Variety	Disease ¹	Country					
		India ²	Myan-mar ³	Bangla-desh	Thai-land	Sudan	Republic of Guinea
ICGV 87160	Rust	2.3	- ⁴	1.0	6.2	-	5.0
	Late leaf spot	6.1	6.0	8.0	8.0	2.2	5.0
Local control	Rust	6.4	-	4.0	7.5	-	7.7
	Late leaf spot	6.7	6.2	9.0	9.0	3.8	6.0
		(JL 24) ⁵	(Japanese Small)	(Dacca 1)	(Tainan 9)	(Kiriz)	(Local)

1. Scored on a 1-9 scale, where 1 = no disease and 9 = 50 to 100% foliage destroyed.
2. Average score of live Indian locations for 2 years and of ICRISAT Center for 4 years.
3. Average of two locations in Myanmar.
4. - = Not tested.
5. S. Names in parentheses refer to local varieties.

Table 3. Disease and insect pest reactions of ICGV 87160 and popular Indian cultivars.

Variety	Bud necrosis disease (%) ¹	<i>Sclerotium rolfsii</i> (%) ²		Leaf miner		
		Stem rot	Pod rot	Loca- ³ tion I	Location 2 ⁴	
					Shoots infected (%)	Larval population
ICGV 87160	11.95	11.4	7.8	5	29.1	4.7
Control	40.75 (JL 24) ⁵	70.0 (Kadiri 3)	64.4 (Kadiri 3)	8 (JL 24)	60.8 (JL 24)	11.0 (JL 24)

1. Average of two seasons at ICRISAT Center. Disease expressed as a percentage of infected plants.
2. ICRISAT Center, postrainy season 1987/88. Stem rot expressed as a percentage of infected plants and pod rot as a percentage of infected pods.
3. Location 1: ICRISAT Center, postrainy season 1987/88; scored on a 1-9 scale, where 1 = no damage, and 9 = 100% foliage damaged.
4. Location 2: Ludhiana, Punjab, India; rainy season 1985.
5. Names in parentheses refer to popular Indian cultivars.

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.