Groundnut Elite Germplasm ICGV 87165

- **High-yielding interspecific derivative resistant to rust and late leaf spot**
- **Resistant to bacterial wilt disease in Indonesia and Vietnam**
- **Less susceptible to leafminer and tobacco caterpillar than popular Indian cultivars**
- **Matures in 117 days in the rainy season in India**
- **Average shelling percentage 60**
- **Average oil content 46%**

ICRISAT
Plant Material Description no. 67

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

1996

Purpose of Description

ICGV 87165 is a high-yielding interspecific derivative resistant to rust and late leaf spot. It is also resistant to bacterial wilt disease in Indonesia and Vietnam, and tolerant of the leafminer (*Aproaerema modicella*) and the tobacco caterpillar (*Spodoptera litura*).

Origin and Development

ICGV 87165 is an interspecific derivative of a cross between *Arachis hypogaea* subsp *fastigiata* var *fastigiata* (PI 261942) and *A. cardenasii.* It was developed through repeated selections from a cytologically unstable interspecific population of this cross received from the North Carolina State University, USA. The stabilized line was designated CS 9, and after further testing for yield potential and other agronomic characters, redesignated ICGV 87165.

Performance

This cultivar was tested in 1983 and 1984 for pod yield in All-India Coordinated Research Project on Oilseeds (AICORPO) trials, and proved superior to the Indian cultivar Kadiri 3 (Table 1). It also outyielded local cultivars in Myanmar, the Philippines, and the Republic of Guinea.

ICGV 87165 is resistant to rust and late leaf spot, and showed higher resistance levels than local cultivars in India, the Republic of Guinea, Myanmar, Sudan, and northern Vietnam (Table 2). It is also resistant in Indonesia and Vietnam to bacterial wilt disease (Table 3). This variety, in addition, is tolerant of the leafminer and the tobacco caterpillar (Table 4).

Table 1. Pod yields in ICGV 87165 and local cultivars in four countries.

Country[1]	Mean pod yield (t ha^{-1})		Superiority (%) over local cultivar
	ICGV 87165	Local cultivar[2]	
India	2.39	1.72 (Kadiri 3)	39
Myanmar	0.92	0.45 (Japanese Small)	104
Republic of Guinea	1.98	1.53 (Local)	29
Philippines	2.21	1.45(BPN Pn-9)	52

1. Data are averages from multi-season, multilocational trials. India—12 trials, 3 years, 7 locations. Myanmar—3 trials, 2 years, 2 locations. Republic of Guinea—2 trials, 2 years, 1 location. Philippines—1 trial, 1 location.
2. Cultivar names in parentheses.

Table 2. Reactions (1-9 scale) of ICGV 87165 and local cultivars to foliar diseases in five countries.[1]

Genotype	Disease	India[2]	Republic of Guinea	Myanmar	Sudan	Northern Vietnam
ICGV 87165	Late leaf spot	3.11	2.50	5.8	1.10	3.0
	Rust	3.07	2.85			2.0
Local control[3]	Late leaf spot	6.89	5.55	8.7	3.8	7.0
	Rust	6.94 (Kadiri 3)	7.35 (Local)	(Japanese Small)	(Kiriz)	7.0 (Sen Lai)

1. Disease scores On a 1-9 scale, where 1 = no disease, 9 = 50-100% foliage destroyed.
2. Data averaged over multiseason, multilocational trials. **India:** Late leaf spot—3 seasons at ICRISAT Asia Center, 2 seasons at 4 Indian locations, and 1 season at 2 other Indian locations. Rust—3 seasons at ICRISAT Asia Center, 2 seasons at 4 other Indian locations, and 1 season at another Indian location. **Guinea:** 2 seasons at 1 location. **Other countries:** 1 season at 1 location.
3. Cultivar names in parentheses.

Table 3. Bacterial wilt incidence in ICGV 87165 and control cultivars Chico, Sen Nghe An, Do Ba Giang, and U4-47-7 in Indonesia and Vietnam.

Country	Genotype	Wilt incidence (%)				
		1988	1989	1991[1]	1992	1993
Indonesia	ICGV 87165	76.4	33.4			
	Chico	100.0	100.0			
Vietnam	ICGV 87165			30.2	3.2	0.0
	Sen Nghe An			61.3		
	Do Ba Giang				26.9	29.0
	U4-47-7				68.3	100.0

1. Average of two locations.

Sources:

Hong, N.X., and Mehan, V.K. 1993. Pages 219-220 *in* Bacterial wilt: proceedings of an International Conference, Taiwan. ACIAR Proceedings no. 45.

Hong, N.X., Mehan, V.K., Ly, N.T., and Vinh, M.T. 1994. Pages 135-141 *in* Groundnut bacterial wilt in Asia: proceedings of the Third Working Group Meeting, China. ICRISAT.

Sharma, D., and Soekarno, B. 1992. International Arachis Newsletter 11:23-25.

Plant Characters

ICGV 87165 belongs to the Virginia group and has a decumbent 3 growth habit, alternate branching, and small, elliptic green leaves. It has 10 primary and several secondary branches. It matures in about 117 days in the rainy season in India.

Pod/Seed Characteristics

ICGV 87165 has slightly reticulated pods with moderate beak and ridges. The majority of pods are two-seeded. The seeds are red, with an average 100-seed mass of 41 g, and contain an average of 46% oil and 22% protein. The shelling percentage is 60.

Table 4. Insect pest reactions in ICGV 87165 and controls TMV 2, ICGS 44, and J 11 in India.

		Leaf miner		Tobacco caterpillar
Location	Genotype	Number of larvae plant^{-1}	Percentage of leaflets damaged	Percentage of leaves damaged
India[1]	ICGV 87165	4.3	10.2	
	TMV 2	10.5	25.6	
Dharwad[2,3]	ICGV 87165			20.0
	ICGS 44			35.0
Jalgaon[3]	ICGV 87165			19.9
	J 11			31.1
ICRISAT	ICGV 87165			69.2
Asia	TMV 2			99.2
Center	ICGS 44			99.2

1. Average data from 5 locations, 3 seasons.
2. Average of 2 seasons.
3. Source: AICORPO Annual Progress Reports, Groundnut, 1991 and 1992.

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Plant Material Descriptions

from the

International Crops Research Institute for the Semi-Arid Tropics

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
- 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 breeding lines and to promote their wide utilization. Requests for seed should be addressed to the Director General, ICRISAT, or to appropriate seed suppliers. Materials for research are sent by ICRISAT to cooperators and other users free of charge.

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