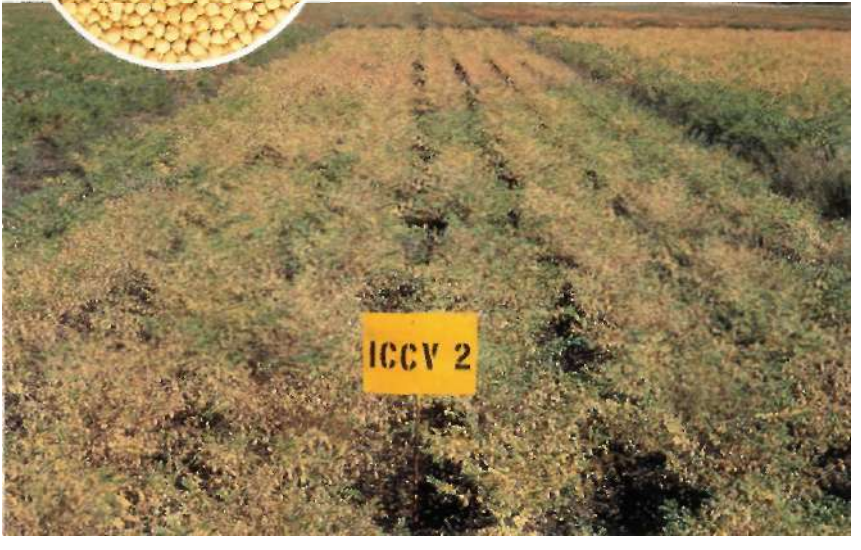
Chickpea
Kabuli Variety ICCV 2

- **Resistant to fusarium wilt**
- **Short-duration, matures in 85 days**
- **Tolerant to salinity**
- **Released as "Swetha" in 1989 for cultivation in Andhra Pradesh, India**
- **Responds to irrigation**
- **Adapted to normal and late sowing**
- **Medium large seed**
- **Commands a sales price premium**
- **Green pods preferred for vegetable use**



ICRISAT

Plant Material Description no.22

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

1990

Purpose of Identification

This is the first extra-short-duration kabuli line with fusarium wilt resistance, suitable for peninsular Indian environments, where kabulis could not be grown earlier. It was named Swetha, and released for general cultivation by the Government of Andhra Pradesh in September 1989.

Origin and Development

ICCV 2 was selected from a multiple cross, F_3 [(K 850 x GW 5/7) x P 458] x F_3 (L 550 ^{x} Guamuchil)-2 made in 1975/76. A single-plant selection was made in the F_2 generation in 1977/78, and again in the F_3 in 1978/79, both years from wilt-sick plots. It was bulked in the F_5 generation as ICCX-752770-13P-2P-BP and numbered ICCL 82001.

Synonyms. ICCX-752770-13P-2P-BP; ICCL 82001.

Performance

This variety flowers about 2 weeks earlier than the best local desi type, Annigeri, and about 4 weeks earlier than northern Indian kabuli cultivar L 550 (Table 1). It has resistance to race 1 of fusarium wilt *(Fusarium oxysporum).* It performed well both on research stations and in farmers' field trials in Andhra Pradesh, Karnataka, Orissa, Maharashtra, and Tamil Nadu (Tables 2 and 3). At ICRISAT Center under rainfed conditions, it matures in 85 to 92

Table 1. Agronomic traits of ICCV 2 and controls, ICRISAT Center, 1983/84.

Cultivar	Days to 50% flowering	Days to maturity	100-seed mass (g)
ICCV 2	33	92	24.0
Controls			
L 550 (kabuli)	59	116	21.0
Annigeri (desi)	52	100	20.1

Table 2. Seed yield (t ha^{-1}) of ICCV 2 and control in trials in Andhra Pradesh, 1986/87-1988/89.

Cultivar	1986/87 (7)[1]	1987/88 (4)	1988/89 (8)
ICCV 2	1.18	1.01	1.01
Control			
Annigeri (desi)	1.07	0.50	0.79

1. Figures in parentheses indicate number of locations.

Table 3. Seed yield (t ha^{-1}) of ICCV 2 and local (control) cultivar grown by two methods in farmer's fields in Maharashtra, Karnataka, Orissa, and Tamil Nadu, 1987/88 and 1988/89.

	Maharashtra					Karnataka		Orissa		Tamil Nadu
	1987/88	1988/89[3]				1988/89[3]		1988/89[3]		1987/88
		Parbhani region	Akola region	Improved method cultivation	Local method cultivation	Improved method cultivation	Local method cultivation	Improved method cultivation	Local method cultivation	
	(7)[1]	(4)[2]	(7)[1]	(3)[2]	(3)[1]	(1)[1]	(1)[1]	(1)[1]	(1)[1]	(1)[1]
ICCV 2	0.71	2.6	1.28	0.60	1.28	1.31	1.26	1.01	0.82	0.42
Control (local)										
Annigeri (desi)	0.57	-	0.93	0.73	0.93	1.36	0.62	0.73	0.58	0.50

1. Figures in parentheses indicate number of locations.
2. Under irrigated conditions.
3. Tests conducted by Legumes On-Farm Testing and Nursery Unit (LEGOFTEN).

Table 4. Biological value (BV), true digestibility, (TD), net protein utilization (NPU) and utilizable protein (UP) of cooked whole seed samples of ICCV 2 and control cultivars, ICRISAT Center, 1987/88.

Cultivar	Protein (%)	BV (%)	TD (%)	NPU (%)	UP (%)
ICCV 2	23.4	79.0	83.8	66.2	14.3
Controls					
ICCV 6 (ICCC 32) (kabuli)	19.6	86.6	86.0	74.4	13.5
Annigeri (desi)	19.4	72.7	80.1	58.3	10.5
SE	±0.1	±2.1	±1.2	±2.0	±0.4

days and it has been possible to grow two crops in the same field between October and March. The second crop requires irrigation for establishment. It appears to be tolerant to drought, salinity, and heat stress, and is less sensitive to daylength variations than common varieties. With water and fertilizer inputs it yielded up to 3.3 t ha^{-1} in Maharashtra in 1988/89. With such a stable variety available in kabuli types, a similar search has been successfully made in desi type chickpeas. However, its reaction to *Sclerotium rolfsii is* similar to that of common varieties.

Plant Characters

This variety has white flowers, and no anthocyanin pigmentation. It has a spreading growth habit, with few well-developed primary and secondary branches.

Seed Characters

The seed is typical kabuli, larger in size than that of Annigeri and L 550 (Table 1). It has a price premium advantage over Annigeri and L 550.

Quality Characters

The seed protein content (%) and other quality traits of ICCV 2 are better than those of the Annigeri (Table 4).

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