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# Chickpea Desi Variety ICCL 80074 (ICCC 37)

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- High yielding
- Short-duration variety, matures in 90-100 days
- Released as "Kranthi" in 1989 for general cultivation in Andhra Pradesh, India
- Resistant to wilt and tolerant of dry root rot
- Seed color appealing and size medium large
- Easy digestibility, rich in sugar and iron.



**ICRISAT**

**Plant Material Description no. 26**

International Crops Research Institute for the Semi-Arid Tropics  
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## Purpose of Identification

ICCL 80074 (ICCC 37) has given consistently high yield over the locally adapted cultivar at research stations and in the farmers' fields in Andhra Pradesh. Due to its good yield and stability of performance, it was released in September 1989 for general cultivation by the Government of Andhra Pradesh under the name "Kranthi".

## Origin and Development

ICCL 80074 was developed from a three-way cross, P 481 x (JG 62 x P 1630), made in 1974/75 postrainy season at ICRISAT Center. Following single-plant selection in the F<sub>2</sub> and later generations except in F<sub>4</sub>, it was finally bulked in the F<sub>8</sub> generation in 1979/80 as selection number ICCX 74754-2P-LB-1P-1P-2P-BP. It was entered in the International Chickpea Screening Nursery-Desi Short Duration (ICSN-DS) as ICCL 80074 in 1980/81. In 1981/82 it was tested again in the ICSN-DS. Based on its good performance for 2 years, it was promoted to the International Chickpea Cooperative Trial-Desi Short Duration (ICCT-DS) and also contributed to the Gram Initial Evaluation Trial (GIET) of the All India Coordinated Pulses Improvement Project (AICPIP) in 1982/83, as ICCC 37.

**Synonym: ICCX 74754-2P-LB-1P-1P-2P-BP**

## Performance

For the 1980/81 and 1981/82 seasons when it was tested in the ICSN-DS, ICCL 80074 gave an average yield of 1.98 t ha<sup>-1</sup> in 1980/81 and 1.72 t ha<sup>-1</sup> in 1981/82 compared with 1.43 t ha<sup>-1</sup> and 1.61 t ha<sup>-1</sup> of Annigeri, locally the best control cultivar. In the GIET of AICPIP trials conducted at several locations in 1982/83, it ranked highest with an average yield of 2.38 t ha<sup>-1</sup> compared with 1.86 t ha<sup>-1</sup> of Annigeri. It was promoted to the Gram Coordinated Varietal Trial (GCVT) and tested multilocationally in three seasons, 1983/84 to 1985/86. On the weighted mean basis for four seasons, ICCL 80074 produced 1.50 t ha<sup>-1</sup> as against 1.27 t ha<sup>-1</sup> of Annigeri, thus registering an overall increase of 18% (Table 1). Due to its good performance in Andhra Pradesh state, it was picked up by the scientists of Andhra Pradesh Agricultural University for testing in farmers' fields as well as in research stations. In these trials, ICCL 80074 recorded an average yield of 1.17 t ha<sup>-1</sup> compared with 0.76 t ha<sup>-1</sup> of the best local variety of the state — 'Jyothi' (Table 2).

## Plant Characters

ICCL 80074 is semispreading with a somewhat upright growth habit. It has a predominantly basal branching pattern. It matures in about 100 days. Flowers are purple and anthocyanin pigment is present in all aerial parts of the plant.

**Table 1. Yields (t ha<sup>-1</sup>) of ICCL 80074 and control cultivar Annigeri in the AICPIP trials conducted in 1982/83 to 1985/86 in the peninsular zone of India.**

Variety	GIET		GCVT		Weighted mean
	1982/83	1983/84	1984/85	1985/86	
ICCL 80074	2.38 (5) <sup>1</sup>	1.70 (6)	0.79 (4)	0.79 (4)	1.50
Annigeri	1.86(3)	1.69(6)	0.77 (4)	0.68 (4)	1.27

1. Figures in parentheses are number of locations.

## Reaction to Biotic Stresses

ICCL 80074 is resistant to race 1 of *Fusarium oxysporum* wilt and fairly tolerant to root rots. *Helicoverpa* pod borer damage to this cultivar is slightly lesser than in other commonly grown cultivars.

## Seed Characters

Seeds of ICCL 80074 are light brown and are attractive. The 100 seed mass is 18.6 g which is slightly higher than that of Annigeri.

**Table 2. Yield (t ha<sup>-1</sup>) of ICCL 80074 and 'Jyothi' in farmers' fields in Andhra Pradesh in 1988/89.**

Location	Yield (t ha <sup>-1</sup> )	
	ICCL 80074	Jyothi
Chilakaluripet	1.50	0.90
Gorantla	1.35	0.60
Gottipadu-1	1.10	0.85
Gottipadu-2	1.19	0.90
Regional Agricultural Research Station, Lam, Guntur	0.70	0.56
Average	1.17	0.76

## Quality Characters

The seed protein content of ICCL 80074 is 20.6% compared with 19.4% of Annigeri. It takes 72 minutes to cook this variety, which is 10 minutes quicker than the control cultivar. The seeds of ICCL 80074 contain 6.0% sugar and 9.6% iron compared with 4.9% sugar and 5.6% iron for Annigeri. Net protein digestibility of ICCL 80074 is 64.7%, compared with 58.3% for Annigeri. That is, ICCL 80074 is better than Annigeri on nutritional grounds also.

### **Plant Material Descriptions from ICRISAT**

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- 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.

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