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A Note on CoC.671, an Early Maturing Wonder Sugarcane Variety

Sugarcane (*Saccharum officinarum*) is one of the major cash crops in India. The present day choice is the early maturing sugarcane varieties. An early ripening (maturing) variety is defined as one which irrespective of date of planting and environments, provided it has had opportunities for normal growth with normal fertilisation in time and free from the epidemics of diseases and offers a sucrose content of 16 per cent in juice and 86 percent purity at 10 to 10½ months and which is economically viable in sugar factory. This definition does not necessarily imply that the peak sucrose content has been reached. CoC.671 gives one percent higher sugar than Co.419 even in the early period of crushing and hence grouped in the early group (Tembhekar, 1987).

CoC.671 (Coimbatore-Cuddalore), a high sugar wonder cane, is a selection from Q. 63 x Co.775. It is one of the

rare hybrids which had transgressively inherited the high quality traits of its parents. It exhibits all the desirable early growth characteristics and has distinct genetic potentiality to build up sugar early (Sahi, 1987). The Sugarcane Breeding Institute, Coimbatore, identified this as an early maturing cane in 1977 and later it was released in Tamil Nadu. Sugar Factories in Tamil Nadu exploited this cane variety from the year 1981-82 and it is creating history boosting the sugar recovery in the factories. It has revolutionised sugar industry in peninsular India which was considered as a low recovery zone by enabling sugar mills to increase the recoverable sugar from 9-10 to 11-12.50 per cent increase (Krishna Reddiar Perumal, 1987). It is a prominent cultivar in Gujarat, M. P. and Orissa. It is spreading to Karnataka and Maharastra States resulting in high sugar recovery.

CoC.671 has remarkable traits like early vigour, thick stalk, broad green foliage, self stripped trash, temperature insensitivity and high quality with adequate yield at a very early age of 8-9 months. It yields good quality jaggery with satisfactory yield at 9 months. It has recorded the highest CCS % (13.69) at 10½ months in Tamil Nadu. Cane yield and sugar yield per month of crop duration is higher in 8th month crop of CoC.671 than 12 months crop of Co.419 (Sahi and Sundara, 1987). It is known to maintain its quality even upto 13 months (Tembhekar, 1987). It is used as a parent to evolve short duration early rich varieties. It is resistant to smut and comparatively

resistant to post harvest deterioration than Co.7219 and Co.419.

CoC.671 is known to fit well in cropping system of 3 crops in 24 months i.e. one planted crop plus two ratoons. This variety is more appealing to the growers and sugar factories in respect of yield and quality (Sanjeevi, 1987). It is well suited to the widely divergent agro-climatic conditions of the country and recommended for June-July and January planting. It needs shallow planting i.e. 6 cm. depth with 60 cm row to row spacing. Planted cane gives higher yields than ratoon cane and its performance in comparison with Co.7219 and Co.419 is given in Table 1.

Table 1. Performance of CoC.671 in comparison with Co.7219 and Co.419 (1987-88)

Sl. No.	Variety	Cane yield (tonne / ha)	Cane wt. (kg/cane)	CCS% (tonne/ha)	Duration (months)
1.	CoC.671	92.50	2.10	13.69	8-9
2.	Co.7219	85.74	1.20	14.74	11-12
3.	Co.419	65.51	0.95	13.37	12-14

Co.671 has some undesirable traits like tendency to lodging due to shallow root system, sparse tillering, profuse flowering in some places (Tamil Nadu). It is susceptible to red rot and grassy shoot diseases. It needs shallow planting and it is a poor ratooner.

CoC.671, an early ripening rich cane, assumes greater importance for increasing the sugar recovery. But the negative association between yield and quality attributes is standing in the way of commercial acceptance of this variety

and the Sugarcane Breeding Institute is trying to identify plant types to overcome the difficulty. Good early varieties coupled with proper management practices are bound to increase cane yield in high quality early varieties which are to be properly encouraged (Mohan Naidu *et al.*, 1987).

With the advent of high sugar variety, CoC.671 and its introduction in T.B.P area in recent years has registered considerable improvement in the sugar recovery in sugar factories of this area.

Sugarcane farmers and factories of this area are preferring this wonder cane. In the cultivators fields it has recorded cane yield of 162.5 t/ha (1983-84 in Hos-

kera) and 160 t/ha (1986-87 in kampli) in the operational area of Gangavati sugars Ltd. and Kampli Co-operative sugar factory Ltd. respectively.

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Study on Heterosis in F_1 , F_2 and F_3 Generations of Safflower (*Carthamus Tinctorius* L.)

Commercial exploitation of hybrid vigour in recent years has led to remarkable yield advances in several agricultural crops irrespective of their breeding systems. Available reports suggest the presence of considerable non additive genetic variance for yield and its important components in safflower (Ranga Rao 1982). The population mean

(level of heterosis) in generations subsequent to F_1 depends on the method of mating allowed. Present study is aimed at comparing the level of heterosis for seed yield in four crosses of safflower.

Material consisted of two crosses involving Indian \times Indian viz., S 144 \times 6 Spl, S 144 \times A 1 and two crosses involving Indian \times Exotic viz., A 1 \times AC 1,