

## RESEARCH NOTE

## Yield Performance of Early Maturation Sugarcane Variety Co – 0403 in Erode District of Tamilnadu

S. Saravanakumar<sup>1</sup>

1. Scientist (Agro.), ICAR – KVK, Myrada, Erode District, Tamilnadu

Corresponding author e-mail : agrisarwan@gmail.com

Paper Received on August 09, 2020, Accepted on September 25, 2020 and Published Online on October 01, 2020

### ABSTRACT

*Sugarcane plays a pivotal role in the national economy of India. To improve the productivity of sugarcane, the field experiment was conducted using the early maturation variety CO – 0403 during the Kharif 2014 -15 and 2015 – 16 in the farmer's field of Vellode village of Erode District. The results showed that 9.33 millable cane recorded per running metre in CO – 0403 whereas 7.66 millbale cane recorded in CO – 86032. Similarly high individual cane weight of 1.436 kg/cane and inter-node length of 14.2 cm was recorded in CO- 0403 variety. The millable cane yield of 124.78 ton / ha was recorded in CO- 0403 which was 17.58 percent yield increase than the existing variety Co-86032. Considering the above facts, CO-0403 has the yield advantage and suitable for promotion in Erode District.*

**Key words :** Sugarcane; CO – 0403; CO – 86032; Growth; Yield performance;

**S**ugarcane is an important commercial crop cultivated in India both sociologically and economically and it is the chief source of sugar or sucrose in India. Sugarcane alone covers 5.14 million hectare area in India with the production of 340 million tons which shares the 22.6 per cent of the world sugar production (Anon.2015).

In Tamil Nadu, CO-86032 is the predominant variety occupies more than 90 percent of the total cultivable area. The production potential of this variety is declining year by year due to continuous cultivation of same variety, susceptibility to pests and diseases. Though TamilNadu ranked first in terms of productivity in India, this is much lower than the production potential of 212 ton/ha of the crop (Waclawovsky *et al.*2010). To meet the need of growing population expected to reach around 1.45 billion by 2025 and the increasing demand of sugar, the production and productivity of the crops needs to be increased. This can be achieved through identification of location specific varieties to enhance the production per unit area. Keeping this view in mind, ICAR-KVK, Myrada conducted on farm trial on sugarcane variety CO-0403 during the year 2014-15 and 2015-16 in order to assess the yield performance

and its suitability for the replacement of existing variety.

### METHODOLOGY

The experiments were conducted in five farmer's field during the kharif season of 2014 – 2015 and 2015-16 in Vellode village of Erode district. The village was purposively selected, since it is the famous area for sugarcane cultivation. Before starting of the experiments, the selected progressive farmers were trained on integrated crop management practices on sugarcane for improving the productivity of sugarcane. Two technological options used in this trial and the critical inputs of sugarcane sets of CO – 0403 variety were supplied to the farmers. The details of the technological options adopted in this trial presented in Table 1.

The trial plots were regularly monitored and technical advisories given to the farmers by the scientists of Kendra in association with Sakthi Sugars limited. The growth and yield observations like millable cane per running metre, Inter-node length, stem girth, yield (ton/ha) were recorded. The cost of cultivation and the profit details of both technological options collected from the farmers for working out the benefit cost ratio. The data's were statistically analyzed by using ANOVAs.

**Table 1. Details of technological options**

Technology	Variety	Source of tech.	Varietal characters
Technology option 1	CO-86032	TNAU, Coimbatore	The most popular in tropical India. Grows well in all types of soil, tolerant to red rot, smut diseases and drought. Mid late maturing variety.
Technology option 2	CO-0403	ICAR-SBI, Coimbatore	Early maturing variety. The clone shows high cane population, erectness, vigorous growth. Tolerant to drought and salinity.

## RESULTS AND DISCUSSION

The study reveals that the cultivation of CO – 0403 sugarcane variety along with integrated crop management practices increases the production potential of the crop in Erode District. Table 2 indicates that the number of millable cane per metre was recorded as 9.33 whereas 7.66 millable cane recorded in CO - 86032. Similarly the inter-node length of 14.2 cm was observed in CO – 0403 which was superior to the other technological option. The pooled data indicates that the significant effect on number of millable cane per metre, inter-node length and stem girth increases the yield of sugarcane. Similar results were reported by *Parasuraman et al. (2013)*.

**Table 2. Growth and yield parameters for both the varieties (Pooled data of two years)**

Variety	No. of millable cane /metre	Cane weight (kg /cane)	Inter-node length (cm)
Co- 0403	9.33	1.436	14.2
Co-86032	7.66	1.152	9.8
SEm±	1.18	0.20	3.11

From the data, it was evident that there was a significant variation was observed in individual cane weight of 1.436 kg was observed in CO – 0403 which is superior than the conventional method of planting and it was recorded as 1.152 kg in CO – 86032 variety. Table 2 indicates that the variety CO – 0403 recorded the yield of 124.78 ton/ha which was significantly superior than the conventional variety CO – 86032 as it

was recorded as 106.12 ton/ha. The findings were in agreement with *Parasuraman et al. (2013)*.

Table 3 reveals that the average cost of cultivation incurred for CO -0403 was Rs. 1,35,000 / ha and an average cost of Rs. 1,37,500 / ha incurred in CO – 86032 variety. The variety CO -0403 recorded the mean gross return of Rs. 2,49,832 / ha and the net return of Rs. 1,11,882 / ha with the benefit cost ratio of 2.17. These findings are line with *Sreelakshmi et al. (2012)*.

**Table 3. Cost economics details for the different technological options**

Parameters	CO - 86032	CO – 0403
Yield (ton/ha)	106.12	124.78
Percent yield increase	-	17.58
Gross cost (Rs. /ha)	137500.00	135000.00
Gross Return (Rs. /ha)	249382.00	293233.00
Net Return (Rs. /ha)	111882.00	158233.00
Benefit Cost Ratio	1.81	2.17

## CONCLUSION

There was a 17.58 per cent yield increase was noticed in CO – 0403 over the existing variety of CO – 86032. The variety CO – 0403 was well observed by the sugar mills therefore the farmers have no problems in marketing their cane to the mills. These results are clearly indicated that the cultivation and adoption of CO – 0403 variety sugarcane enhanced the production in a sustainable manner.

## REFERENCES

- Anonymous (2015). Annual Report. ICAR – Sugarcane breeding Institute, Coimbatore
- Parasuraman, P.; Jayachandran, M.; Nazeer, Ahmed S.; Paneerselvam, S.; Rajendran, P.; Appunu, C.; Annadurai, A.; Paneerselvam, R.; Rajendran, R. (2013). Performance of promising midlate clone under CAE at Paiyur centre of North-western agro climatic zone of Tamilnadu. 44<sup>th</sup> meeting of sugarcane research and development workers of Tamilnadu and Puducherry. Sugarcane breeding Institute, Coimbatore, pp: 265-266.
- Sreelakshmi, C.H.; C.V. Sameer kumar and D. Shivani. (2012). Productivity enhancement of Pigeon pea (*Cajanus canjan L.*) through improved production technology. *Madras Agril. J.*, **99** (4-6): 185-189
- Waclawovsky, A.J.; Sato, P.M.; Lembke, C.G.; Moore, P.H.; Souza, G.M. (2010). Sugarcane for bioenergy production: as assessment of yield regulation of sucrose content. *Biotech. J.*, **8**: 263 -276.

