**NEW VARIETY**

# Co 10026 (UPAHAR): NEW EARLY MATURING VARIETY RELEASED FOR CULTIVATION IN PENINSULAR ZONE

ICAR-Sugarcane Breeding Institute, Coimbatore has recently developed a high yielding and early maturing variety Co 10026 which was selected from the cross between two high yielding and quality parents (Co 86010 x Co 86011). The variety was approved in 81st meeting of Central Sub Committee on Crop standards, Notification and released for cultivation as an early variety in the States of Andhra Pradesh, Chhattisgarh, Gujarat, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Tamil Nadu and Telengana of Peninsular Zone.

**Performance of Co 10026 in Advanced Varietal Trials:** AVT (Two plant and one ratoon crops) were conducted in 16 centres of Peninsular zone during 2015-2017. Co 10026 recorded superior mean performance in comparison with three zonal checks *viz*., CoC 671, Co 94008 and Co 85004 for cane yield and sugar yield. The mean CCS yield (commercial cane sugar yield) of Co 10026 in Peninsular Zone was 13.85 t/ha with 11.80 % improvement over CoC 671. Co 10026 with an overall mean cane yield of 109.01 t/ha was superior to CoC 671 (90.73 t/ha), Co 85004 (92.48 t/ha) and Co 94008 (91.47 t/ha) with an improvement of 20.15 %, 17.87% and 19.18 % respectively (Table 1). The entry Co 10026 topped in 10 centres compared to all the standards and other entries for sugar yield (t/ha). For cane yield also it ranked number one in 10 centres. Out of 16 locations tested, the entry topped in Padegaon for juice sucrose % and CCS %. Co 10026 ranked first in 3 locations for Pol % cane. The entry performed well across the zone for both cane yield and sugar yield. Out of 33 trials conducted across 16 centres, it ranked in top three in 21 trials for Cane yield (t/ha), 23 trials for Commercial Cane Sugar (t/ha) and 8 and 7 trials for juice Sucrose % and Pol % cane respectively. It recorded juice sucrose of 15.41 % at 240 days in comparison with CoC 671 (15.51%) and with an improvement of 9.18 and 5.37 % over other checks Co 94008 and Co 85004 respectively. The clone had an improvement of 3.99 % over the check Co 94008 for sucrose % at 300 days and 13.58 % of Pol in cane at harvest (300 days).

Co 10026 was the best entry in the ratoon trials and is an excellent ratooner with an improvement of 9.86 % and 16.40 % for sugar yield and cane yield respectively over the best standard Co 85004. It recorded 17.97 % improvement for sugar yield and 27.36 % for cane yield in ratoon crop over the standard CoC 671.

**Table 1. Performance of Co 10026 at 300 days crop age across 16 centres in Peninsular zone**

| Entries/ Standards | CCS (t/ ha) | Cane Yield (t/ha) | Sucrose % |
|---|---|---|---|
| Co 10026 | 13.85 | 109.01 | 17.98 |
| CoC 671 | 12.39 | 90.73 | 18.95 |
| Co 94008 | 11.17 | 91.47 | 17.29 |
| Co 85004 | 11.86 | 92.48 | 18.25 |
| % improvement over CoC 671 | 11.80 | 20.15 | -5.12 |
| % improvement Over Co 94008 | 23.99 | 19.18 | 3.99 |
| % improvement Over Co 85004 | 16.78 | 17.87 | -1.48 |

In Peninsular Zone, early varieties are not popular because of poorer yield in comparison with the predominant midlate variety Co 86032. This variety is crushed in the early period of the crushing season due to the non-availability of suitable early maturing varieties. The identified early variety Co 10026 was compared with Co 86032 for its juice sucrose % and cane yield at 300 days. It combines high yield and quality in comparison with Co 86032 at ten months of age indicating its potential as a high yielding early clone for the peninsular zone. The variety recorded 17.98 % sucrose in comparison with Co 86032 (16.16 % sucrose) at 10 months. It recorded a cane yield of 109.01 t/ha at 10 months which was higher than Co 86032 (106. 50 t/ha at 12 months) indicating its suitability as high yielding early clone for the zone.

The variety has distinct morphological characters (Fig 1). It has very tall, semi-erect, medium thick, pink orange wax coated canes with long internodes, corky patches, ivory marks, greenish orange growth ring and brown dewlap. Prominent bud groove, medium ovate buds with semi compact erect leaves, greenish purple sheath with no spines are the key features in identification of this variety. The clone also combined early vigour, high tillering and good ratooning ability. This variety is resistant to red rot in all centres and smut in all centres except Coimbatore and Navsari. However, no natural incidence of smut was observed during the evaluation period. It was less susceptible to moderately susceptible for early shoot borer (except in Pune), internode borer (except in Padegaon) and scale insect (except in Padegaon). The clone showed no natural incidence of wooly aphid during the evaluation period. The clone was tolerant to drought and salinity conditions, the major yield limiting abiotic stresses in Peninsular zone.

**Fig. 1.** Morphological descriptors of Co 10026
Field stand, internode shape, bud size, bud shape, bud groove, dewlap color

Considering its overall superiority as a promising high yielding early clone with moderate quality, resistance to red rot, smut diseases and tolerance to SWWA (Sugarcane white wooly aphid), Co 10026 is recommended as an early sugarcane variety for commercial exploitation and expected to produce increased yield at ten months of age and increase cane productivity in normal, drought and red rot prone regions of the Peninsular zone.

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Received: August, 2019; Revised & Accepted: September, 2019