

**NEW VARIETIES****Co 0118 (Karan 2)**

Co 0118 is a selection from the progeny of the cross Co 8347 x Co 86011. This clone was identified from seedling ratoon nursery raised at Sugarcane Breeding Institute Regional Centre, Karnal, Haryana, India. It was selected as an early clone as it had pol % juice higher than CoJ 64 in November, January and March. The cane yield and sugar yield of Co 0118 were higher than those of CoJ 64. On the basis of its better performance in the zone, Co 0118 was released in 2009 by the Central Varietal Release Committee for commercial cultivation in North Western Zone (Haryana, Punjab, Western and Central Uttar Pradesh, Uttarakhand and Rajasthan).

The clone is characterized by tall, medium thick canes with grey purple cylindrical to obconoidal internodes and self de-trashing type of leaf sheath. Bud shape is oval to obovate. Inner auricle is long lanceolate while outer is shorter. Leaf sheath has spines but stalk is free from splits and pith. The fibre content is about 12.78%. The jaggery is of A-1 quality (light yellow colour). The variety is moderately resistant to the prevalent races of red rot by plug method of inoculation. However, it showed resistant reaction by nodal method of inoculation. It is a suitable substitute for CoJ 64.

In the All India Co-ordinated Research Project trials conducted in the North Western Zone, Co 0118 ranked third in the zone for cane yield, sugar yield and sucrose % in juice. Cane yield, sugar yield and sucrose % were 78.20 t/ha, 9.88 t/ha and 18.45% respectively with 15% higher cane and sugar yields and 3.7% higher sucrose over CoJ 64. The performance of Co 0118 was better than the ruling standards under water stress and water logging conditions. It requires less nitrogen than the dose required for CoS 8436. Co 0118 gives good ratoon yield and showed better sprouting when harvested during winter.

Co 0118 was tested at 11 sugar mills in Haryana, Uttarakhand and Uttar Pradesh under normal conditions. Its juice quality (pol % in cane) was better than the respective local checks in all mill areas. The pol % in cane was higher by more than 1% during February over CoJ 64 in western Uttar Pradesh and Uttarakhand. Co 0118 was evaluated under water stress and water logging conditions at two sugar mills in Uttar Pradesh. Under normal condition, cane yield of Co 0118 was 4 t/ha higher than that of CoJ 64. Improvement in cane yield under water stress and water logging conditions was higher by more than 10 t/ha over respective standards. Pol % in cane in Co 0118 was more than 1% higher than respective standards under normal and abiotic conditions.

Bakshi Ram, N. Vijayan Nair, G Hemaprabha,  
B.K.Sahi and Narender Singh

Sugarcane Breeding Institute Coimbatore, India

**Co 0238 (Karan 4)**

Co 0238 is a high yielding, high sugared early maturing variety bred at the Sugarcane Breeding Institute Regional Centre, Karnal, Haryana, India, from the cross CoLk 8102 x Co 775. This clone was identified from seedling ratoon nursery raised at Sugarcane Breeding Institute, Regional Centre, Karnal and selected as an early clone as it had pol % juice higher than CoJ 64 in November, January and March. The cane yield and sugar yield of Co 0238 were higher than those of CoJ 64. Co 0238 was released in 2009 by the Central Varietal Release Committee for commercial cultivation in North Western Zone (Haryana, Punjab, Western and Central U.P, Uttarakhand and Rajasthan).

The canes are tall, medium thick with grey brown cylindrical internodes. It bears self de-trashing type of leaf sheath and shallow bud groove. The stalk is free from spines, splits with hollow pith but spongy

pith can be seen under water stress conditions. Though leaf tip (up to 2/3<sup>rd</sup> length) drying is common during summer months, it need not be a matter of concern for growers. The fibre content is about 13.05%. The jaggery is of A-1 quality with light yellow colour. This clone is moderately resistant to the prevalent races of red rot pathogen by plug method of inoculation and resistant by nodal method.

In the All India Co-ordinated Research Project trials conducted in North Western Zone, Co 0238 ranked first for cane yield, second for sugar yield and fifth for sucrose % in juice in the zone. The mean cane yield in the zone was 81.08 t/ha, sugar yield was 9.95 t/ha and sucrose was 17.99 % which amounted to 20%, 16% and 0.50% improvement respectively over that of CoJ 64. The performance of Co 0238 was better than the ruling standards under water stress, water logging and saline conditions. The variety requires less nitrogen than CoS 8436. It gives good ratoon and shows better sprouting when harvested during winter.

Co 0238 was evaluated under water stress and water logging conditions at two sugar mills in UP. Performance of the variety was better with respect to cane yield and pol % in cane. Under normal conditions, Co 0238 had 12 t/ha higher yield than CoJ 64. Improvement in cane yield under water stress and water logging conditions was higher by more than 20 t/ha over respective standards. Pol % in cane in Co 0238 was slightly better than respective standards under normal and abiotic conditions.

When evaluated for ratoonability during winter, Co 0238 was found suitable for harvest during the season with a minimal decrease of 4.66% in comparison to the spring harvested crop, in contrast to CoJ 64 that exhibited 41.29% reduction in cane yield. Hence, this variety would be suitable for raising as a second ratoon crop under sub-tropical conditions of the country.

Bakshi Ram, N. Vijayan Nair, G Hemaprabha,  
B.K.Sahi, Narender Singh, R. Viswanathan and  
M. Balamuralikrishnan

Sugarcane Breeding Institute, Coimbatore, India

### Co 0218 (Shreyas)

Co 0218 named as 'Shreyas' was evolved through hybridization and selection of the high yielding parent Co 8353 with Co 86011, a proven parent for high juice quality. This is a mid-late maturing clone identified as Co cane in 2002 from Sugarcane Breeding Institute, Coimbatore, for Peninsular Zone. The clone was tested in IVT (2005-2006) at 11 centres of Peninsular zone and due to its superior performance for CCS t/ha, cane yield, CCS % and sucrose content, it was promoted to Advanced Varietal Trials during 2007-2009 (two plant and one ratoon) at 11 centres of peninsular zone. Co 0218 performed well across the zone for CCS t/ha, CCS % and sucrose % in comparison with Co 86032 and Co 7219 and was on par with Co 86032 for cane yield.

The variety gives A<sub>1</sub> quality jaggery and has 14.70 % fibre. It is a good ratooner with excellent field stand, erect tall and thick canes, dark green foliage and moderate spines. The variety exhibits 10% flowering during mid November at Coimbatore conditions. It is expected that this variety will improve productivity in normal, drought prone and red rot prone factory zones of Tamil Nadu, Karnataka, Maharashtra and Gujarat.

The variety is characterized by erect, thick, yellow purple heavily wax coated zig zag canes, green leaf sheath with reddish purple blotches with moderate spines, falcate ligular process and medium flat ovate buds.

The overall mean (two plant and ratoon crops) sugar yield of Co 0218 was 15.30 t/ha in comparison with 12.67 t/ha in Co 7219 and 14.69 t/ha in Co 86032 amounting to 20.78% improvement over Co 7219 and 4.19% over Co 86032. Cane yield of 104.53 t/ha was recorded from three crops with an improvement of 12.37% over Co 7219. Its mean CCS was 14.58 % as against 13.68% in Co 7219 and 13.92 % in Co 86032 with an improvement of 6.64% and 4.75% over the standards respectively. Co 0218 had a high sucrose content of 20.63% as against 19.50% in Co 7219 and 19.65% in Co 86032

with an improvement of 5.82% and 5.00% over the standards respectively. Co 0218 performed well in Coimbatore, Akola, Kolhapur, Navasari, Padegaon, Pravaranagar, Pune and Sankeshwar, thus exhibiting high quality in almost all the centers of the zone.

Based on the trials conducted at all the centres of Peninsular zone, Co 0218 ranked among top three in 21 trials for CCS t/ha, 13 trials for cane yield, 20 trials for CCS % and 22 trials for sucrose % thus exhibiting clear superiority for both yield and quality. The clone had performed better than Co 7219 in all the centres and was better than Co 86032 at Coimbatore, Akola, Kolhapur, Navasari,

Pravaranagar, Pune and Sankeshwar centres, thus expressing its wide adaptability across varied environments of Peninsular zone. Besides being a high yielding and good quality clone, Co 0218 is also moderately resistant to red rot at Coimbatore, Navasari and Thiruvalla. It is resistant to smut disease and tolerant to drought and salinity.

U.S. Natarajan, R. Nagarajan, G. Hemaprabha,  
S. Alarmelu, R.M. Shanthi, N. Balasundaram,  
S. Dhamodaran, P. Govindaraj, K. G.Somarajan,  
M.N. Premachandran, P. Padmanabhan, D. Mohan Raj,  
S. Vasantha, R. Gomathi and N. Vijayan Nair  
Sugarcane Breeding Institute, Coimbatore, India