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**ALL INDIA COORDINATED RESEARCH  
PROJECT ON SUGARCANE**

**ANNUAL REPORT (CROP IMPROVEMENT)  
(2016-17)**

**FARIDKOT CENTRE (NWZ)**



**SUGARCANE SECTION**

**PUNJAB AGRICULTURAL UNIVERSITY  
REGIONAL STATION  
FARIDKOT – 151203**

## WEATHER AT FARIDKOT

Meteorological data, recorded during the crop season 2016-17, is given in Table 1. The highest rainfall (190.9 mm) was in month of August, 2016 followed by 91.7 mm in July, 2016; while there was 75.0 mm rain in March, 2016. The highest value of maximum temperature (40.6 °C) was in month of May, 2016 followed by June (39.4 °C); while the lowest value of maximum temperature (18.1 °C) was in month of January, 2017. The highest values of minimum temperature (28.4 °C) was in month of June, 2016 followed by July (26.6 °C); while the lowest values (7.1 °C) was in January, 2017.

**Table 1. Meteorological Data for 2016-17**  
**North West Zone**  
**Location – FARIDKOT**

| Month          | Temperature (°C) |      | R.H. (%) |      | Rainfall (mm) | No. of rainy days |
|----------------|------------------|------|----------|------|---------------|-------------------|
|                | Max.             | Min. | Max.     | Min. |               |                   |
| February 2015  | 23.0             | 8.3  | 92       | 47   | 23.2          | 2.0               |
| March 2015     | 28.1             | 14.7 | 85       | 46   | 75.0          | 4.0               |
| April 2015     | 36.5             | 20.3 | 59       | 23   | 2.0           | 0.0               |
| May 2015       | 40.6             | 25.0 | 58       | 29   | 28.5          | 2.0               |
| June 2015      | 39.4             | 28.4 | 69       | 41   | 72.7          | 3.0               |
| July 2015      | 35.3             | 27.9 | 81       | 64   | 91.7          | 5.0               |
| August 2015    | 33.8             | 26.6 | 86       | 71   | 190.9         | 8.0               |
| September 2015 | 34.4             | 25.2 | 83       | 58   | 0.0           | 0.0               |
| October 2015   | 34.0             | 18.7 | 87       | 36   | 0.0           | 0.0               |
| November 2015  | 28.6             | 10.6 | 89       | 32   | 0.0           | 0.0               |
| December 2015  | 23.4             | 8.5  | 94       | 50   | 0.0           | 0.0               |
| January 2016   | 18.1             | 7.1  | 93       | 61   | 16.7          | 2.0               |
| February 2016  | 23.8             | 8.8  | 89       | 40   | 0.0           | 0.0               |

## **ZONAL VARIETAL TRIALS**

### **1. Initial Varietal Trial (Early)**

The experiment was conducted with nine entries and two checks *viz.* entries- Co 13033, Co 13034, CoLk 13201, CoLk 13202, CoLk 13203, CoPant 13221, CoPant 13222, CoPb 13181, CoS 13231 and checks- CoJ 64, Co 0238 in RBD with three replications. Test entry CoPb 13181 (115.70 t/ha & 14.05 t/ha) was found significantly superior to the best check Co 0238 (95 t/ha & 11.36 t/ha) for cane yield & sugar yield, respectively. None of the test entries were found to be significantly superior over the quality check CoJ 64 for various quality parameters (Table 2).

**Conclusion:** CoPb 13181 was found promising for cane and sugar yield.

### **2. Advanced Varietal Trial (Early) I Plant**

The experiment was conducted with four entries and two checks *viz.* test entries- Co 12026, Co 12027, CoLk 11201, CoLk 12203, CoPant 12221 and checks- CoJ 64, Co 0238 in RBD with four replications. CoPant 12221 was recorded the highest cane yield of 116.11 t/ha followed by CoLk 12203 (115.83 t/ha); which were significantly superior to Co 0238 (106.67 t/ha). For cane yield, Co 12026 (13.73 t/ha) and Co 12027 (13.48 t/ha) were at par to best check Co 0238 (13.20 t/ha) (Table 3).

**Conclusion:** CoPant 12221 and CoLk 12203 were found promising in cane yield.

### **3. Advanced Varietal Trial (Early) II Plant**

The experiment was conducted with four entries and two checks *viz.* entries- CoH 11262, CoLk 11202, CoLk 11202, CoLk 11203 and checks- CoJ 64, Co 0238 in RBD with three replications. CoH 11262 was at par for cane yield (110.00 t/ha) and sugar yield (12.71 t/ha) over best check Co 0238 (94.81 t/ha & 11.45 t/ha); whereas CoLk 11203 was at par for sugar yield (12.08 t/ha) to the best check Co 0238. None of the test entries were found to be superior over the quality check CoJ 64 for various quality parameters (Table 4).

**Conclusion:** CoH 11262 was found promising in cane and sugar yield.

### **4. Advanced Varietal Trial (Early) Ratoon**

The experiment was conducted with four entries and two checks *viz.* entries- CoH 11262, CoLk 11201, CoLk 11202 and checks- CoJ 64, Co 0238 in RBD with three replications. CoLk 11203 was found at par for cane yield (90.00 t/ha) and sugar yield (10.67 t/ha) to the best check Co 0238 (87.78 t/ha and 10.36, respectively). None of the test entries were found to be significantly superior over both checks (Table 5).

**Conclusion:** CoLk 11203 was found promising in cane and sugar yield.

**Table 2. Initial Varietal Trial (Early) 2016-17****Location – FARIDKOT (North West Zone), Design: RBD, Replications: 3, Date of Planting: 10.02.2016, Plot Size: 6 rows x 6m x 75cm**

| S. No.      | Entry        | CCS (t/ha) | Cane yield (t/ha) | CCS % (10m) | Sucrose % (10m) | Brix % (10 m) | Purity % (10m) | Pol % cane (10m) | Extraction % (10m) | Fibre % (10m) | NMC at 10m ('000/ha) |
|-------------|--------------|------------|-------------------|-------------|-----------------|---------------|----------------|------------------|--------------------|---------------|----------------------|
| 1           | Co 13033     | 12.02      | 92.04             | 13.06       | 18.85           | 21.23         | 88.78          |                  | 56.98              |               | 102.41               |
| 2           | Co 13034     | 11.28      | 88.15             | 12.80       | 18.37           | 20.47         | 89.78          |                  | 54.68              |               | 104.81               |
| 3           | CoLk 13201   | 9.90       | 80.74             | 12.29       | 17.50           | 19.17         | 91.30          |                  | 53.39              |               | 99.63                |
| 4           | CoLk 13202   | 10.93      | 101.30            | 10.78       | 15.53           | 17.43         | 89.08          |                  | 48.95              |               | 93.33                |
| 5           | CoLk 13203   | 12.61      | 101.30            | 12.45       | 17.76           | 19.53         | 90.96          |                  | 51.62              |               | 103.48               |
| 6           | CoPant 13221 | 9.23       | 100.44            | 9.20        | 13.32           | 15.13         | 88.04          |                  | 49.44              |               | 97.96                |
| 7           | CoPant 13222 | 10.69      | 105.74            | 10.09       | 14.70           | 16.87         | 87.12          |                  | 44.48              |               | 109.81               |
| 8           | CoPb 13181   | 14.05      | 115.70            | 12.14       | 17.49           | 19.63         | 89.09          |                  | 60.89              |               | 114.26               |
| 9           | CoS 13231    | 8.17       | 65.93             | 12.39       | 17.76           | 19.70         | 90.22          |                  | 44.23              |               | 106.67               |
| <b>Stds</b> |              |            |                   |             |                 |               |                |                  |                    |               |                      |
| 1           | CoJ 64       | 11.63      | 91.30             | 12.74       | 18.27           | 20.30         | 90.02          |                  | 51.84              |               | 110.96               |
| 2           | Co 0238      | 11.36      | 95.00             | 11.95       | 17.51           | 20.33         | 86.10          |                  | 53.85              |               | 93.70                |
|             | SEm          | 0.51       | 3.81              | 0.24        | 0.28            | 0.32          | 1.22           |                  | 0.90               |               | 4.07                 |
|             | CD 5%        | 1.50       | 11.25             | 0.69        | 0.83            | 0.96          | 3.59           |                  | 2.64               |               | 12.01                |
|             | CV           | 7.95       | 7.00              | 3.45        | 2.88            | 2.94          | 2.37           |                  | 2.99               |               | 6.82                 |

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| S.No.       | Entry        | Stalk Length (m) | Stalk Diameter (cm) | Single cane weight (kg) | CCS % (8 m) | Sucrose % (8 m) | Brix % (8 m) | Purity % (8 m) | No. of shoots ('000/ha) 240 days | No. of tillers ('000/ha) 120 days | Germination % (45 days) |
|-------------|--------------|------------------|---------------------|-------------------------|-------------|-----------------|--------------|----------------|----------------------------------|-----------------------------------|-------------------------|
| 1           | Co 13033     | 182.55           | 2.79                | 1.01                    | 10.26       | 14.99           | 17.30        | 86.61          | 109.95                           | 130.00                            | 22.63                   |
| 2           | Co 13034     | 246.44           | 2.41                | 1.00                    | 10.14       | 14.53           | 16.13        | 90.06          | 109.58                           | 126.85                            | 31.89                   |
| 3           | CoLk 13201   | 206.11           | 2.67                | 0.88                    | 9.15        | 13.61           | 16.30        | 83.52          | 107.82                           | 128.52                            | 29.22                   |
| 4           | CoLk 13202   | 211.44           | 2.71                | 1.18                    | 9.30        | 13.21           | 14.37        | 91.97          | 98.29                            | 115.74                            | 30.66                   |
| 5           | CoLk 13203   | 230.77           | 2.44                | 1.06                    | 9.39        | 13.27           | 14.27        | 92.82          | 121.40                           | 151.81                            | 33.95                   |
| 6           | CoPant 13221 | 262.77           | 2.55                | 1.25                    | 7.81        | 11.18           | 12.37        | 90.36          | 110.79                           | 136.11                            | 39.09                   |
| 7           | CoPant 13222 | 201.33           | 2.63                | 1.07                    | 7.50        | 11.06           | 13.03        | 84.80          | 137.08                           | 176.85                            | 56.17                   |
| 8           | CoPb 13181   | 273.77           | 2.42                | 1.20                    | 9.29        | 13.84           | 16.63        | 83.22          | 137.73                           | 173.70                            | 54.73                   |
| 9           | CoS 13231    | 180.44           | 2.24                | 0.72                    | 10.84       | 15.51           | 17.17        | 90.39          | 103.47                           | 112.78                            | 32.92                   |
| <b>Stds</b> |              |                  |                     |                         |             |                 |              |                |                                  |                                   |                         |
| 1           | CoJ 64       | 205.33           | 2.79                | 0.98                    | 10.43       | 14.98           | 16.73        | 89.57          | 125.82                           | 153.19                            | 47.94                   |
| 2           | Co 0238      | 217.22           | 2.74                | 1.12                    | 10.02       | 14.64           | 16.90        | 86.64          | 108.66                           | 136.11                            | 44.65                   |
|             | SEm          | 5.28             | 0.05                | 0.07                    | 0.35        | 0.44            | 0.40         | 1.54           | 3.38                             | 5.48                              | 0.95                    |
|             | CD 5%        | 15.58            | 0.16                | 0.21                    | 1.05        | 1.29            | 1.17         | 4.56           | 9.96                             | 16.16                             | 2.81                    |
|             | CV           | 4.16             | 3.54                | 11.60                   | 6.50        | 5.52            | 4.42         | 3.03           | 5.06                             | 6.77                              | 4.28                    |

**Table 3. Advanced Varietal Trial (Early) I Plant 2016-17**

**Location – FARIDKOT (North West Zone), Design: RBD, Replications: 3, Date of Planting: 11.02.2016, Plot Size: 8 rows x 6m x 75cm**

| S. No.      | Entry        | CCS (t/ha) | Cane yield (t/ha) | CCS % (10m) | Sucrose % (10m) | Brix % (10 m) | Purity % (10m) | Pol % cane (10m) | Extraction % (10m) | Fibre % (10m) | NMC at 10m ('000/ha) |
|-------------|--------------|------------|-------------------|-------------|-----------------|---------------|----------------|------------------|--------------------|---------------|----------------------|
| 1           | Co 12026     | 13.73      | 107.50            | 12.77       | 18.34           | 20.46         | 89.65          |                  | 52.43              |               | 108.89               |
| 2           | Co 12027     | 13.48      | 102.22            | 13.19       | 19.13           | 21.78         | 87.88          |                  | 52.45              |               | 123.75               |
| 3           | CoLk 12203   | 11.58      | 115.83            | 10.01       | 14.70           | 17.18         | 85.58          |                  | 50.01              |               | 123.75               |
| 4           | CoPant 12221 | 12.81      | 116.11            | 11.03       | 15.90           | 17.86         | 89.06          |                  | 47.39              |               | 135.42               |
| <b>Stds</b> |              |            |                   |             |                 |               |                |                  |                    |               |                      |
| 1           | CoJ 64       | 11.51      | 90.28             | 12.75       | 18.21           | 20.05         | 90.81          |                  | 50.88              |               | 107.50               |
| 2           | Co 0238      | 13.20      | 106.67            | 12.38       | 17.80           | 19.91         | 89.45          |                  | 54.90              |               | 101.67               |
|             | SEm          | 0.30       | 2.98              | 0.11        | 0.16            | 0.23          | 0.63           |                  | 0.64               |               | 3.35                 |
|             | CD 5%        | 0.92       | 8.97              | 0.34        | 0.47            | 0.68          | 1.89           |                  | 1.94               |               | 10.10                |
|             | CV           | 4.79       | 5.59              | 1.90        | 1.80            | 2.32          | 1.42           |                  | 2.50               |               | 5.74                 |

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| S. No.      | Entry        | Stalk Length (m) | Stalk Diameter (cm) | Single cane weight (kg) | CCS % (8 m) | Sucrose % (8 m) | Brix % (8 m) | Purity % (8 m) | No. of shoots ('000/ha) 240 days | No. of tillers ('000/ha) 120 days | Germination % (45 days) |
|-------------|--------------|------------------|---------------------|-------------------------|-------------|-----------------|--------------|----------------|----------------------------------|-----------------------------------|-------------------------|
| 1           | Co 12026     | 255.17           | 2.66                | 1.19                    | 11.32       | 16.24           | 18.08        | 89.86          | 122.01                           | 141.53                            | 39.24                   |
| 2           | Co 12027     | 255.58           | 2.50                | 0.94                    | 11.70       | 16.87           | 18.95        | 89.00          | 128.95                           | 140.56                            | 26.27                   |
| 3           | CoLk 12203   | 258.91           | 2.49                | 0.95                    | 7.69        | 11.49           | 13.88        | 82.92          | 137.77                           | 158.19                            | 33.91                   |
| 4           | CoPant 12221 | 305.66           | 2.36                | 1.05                    | 7.68        | 11.48           | 13.88        | 82.75          | 147.84                           | 166.67                            | 37.04                   |
| <b>Stds</b> |              |                  |                     |                         |             |                 |              |                |                                  |                                   |                         |
| 1           | CoJ 64       | 216.58           | 2.71                | 1.00                    | 9.93        | 14.61           | 17.13        | 85.27          | 110.40                           | 118.19                            | 27.55                   |
| 2           | Co 0238      | 243.41           | 2.79                | 1.21                    | 9.77        | 14.36           | 16.83        | 85.34          | 108.81                           | 122.36                            | 32.87                   |
|             | SEm          | 2.75             | 0.03                | 0.04                    | 0.28        | 0.37            | 0.39         | 0.78           | 2.86                             | 3.89                              | 0.79                    |
|             | CD 5%        | 8.29             | 0.08                | 0.11                    | 0.84        | 1.12            | 1.17         | 2.34           | 8.61                             | 11.72                             | 2.39                    |
|             | CV           | 2.15             | 2.06                | 6.70                    | 5.73        | 5.26            | 4.71         | 1.81           | 4.54                             | 5.51                              | 4.82                    |

**Table 4. Advanced Varietal Trial (Early) II Plant 2016-17**

**Location – FARIDKOT (North West Zone), Design: RBD, Replications: 3, Date of Planting: 09.02.2016, Plot Size: 8 rows x 6m x 75cm**

| S. No.      | Entry      | CCS (t/ha) | Cane yield (t/ha) | CCS % (10m) | Sucrose % (10m) | Brix % (10 m) | Purity % (10m) | Pol % cane (10m) | Extraction % (10m) | Fibre % (10m) | NMC at 10m ('000/ha) |
|-------------|------------|------------|-------------------|-------------|-----------------|---------------|----------------|------------------|--------------------|---------------|----------------------|
| 1           | CoH 11262  | 12.72      | 110.00            | 11.56       | 16.68           | 18.80         | 88.72          |                  | 51.34              |               | 97.22                |
| 2           | CoLk 11201 | 10.47      | 84.07             | 12.43       | 17.92           | 20.17         | 88.85          |                  | 52.22              |               | 96.48                |
| 3           | CoLk 11202 | 11.38      | 93.33             | 12.19       | 17.52           | 19.60         | 89.40          |                  | 58.73              |               | 97.22                |
| 4           | CoLk 11203 | 12.08      | 94.07             | 12.84       | 18.68           | 21.40         | 87.33          |                  | 47.14              |               | 121.67               |
| <b>Stds</b> |            |            |                   |             |                 |               |                |                  |                    |               |                      |
| 1           | CoJ 64     | 10.69      | 82.96             | 12.88       | 18.50           | 20.63         | 89.67          |                  | 54.41              |               | 108.70               |
| 2           | Co 0238    | 11.46      | 94.81             | 12.07       | 17.33           | 19.33         | 89.66          |                  | 56.01              |               | 96.11                |
|             | SEm        | 0.70       | 4.93              | 0.16        | 0.20            | 0.24          | 0.68           |                  | 0.33               |               | 2.66                 |
|             | CD 5%      | 2.21       | 15.52             | 0.50        | 0.63            | 0.76          | 2.13           |                  | 1.04               |               | 8.37                 |
|             | CV         | 10.60      | 9.15              | 2.21        | 1.96            | 2.09          | 1.32           |                  | 1.07               |               | 4.47                 |

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| S.No.       | Entry      | Stalk Length (m) | Stalk Diameter (cm) | Single cane weight (kg) | CCS % (8 m) | Sucrose % (8 m) | Brix % (8 m) | Purity % (8 m) | No. of shoots ('000/ha) 240 days | No. of tillers ('000/ha) 120 days | Germination % (45 days) |
|-------------|------------|------------------|---------------------|-------------------------|-------------|-----------------|--------------|----------------|----------------------------------|-----------------------------------|-------------------------|
| 1           | CoH 11262  | 217.88           | 2.99                | 1.31                    | 9.61        | 14.26           | 17.00        | 83.86          | 117.41                           | 141.30                            | 23.15                   |
| 2           | CoLk 11201 | 185.33           | 2.82                | 0.90                    | 10.29       | 14.93           | 17.00        | 87.81          | 128.98                           | 164.81                            | 33.64                   |
| 3           | CoLk 11202 | 222.55           | 2.81                | 1.03                    | 9.93        | 14.47           | 16.63        | 87.03          | 113.94                           | 135.74                            | 32.10                   |
| 4           | CoLk 11203 | 217.66           | 2.48                | 0.79                    | 10.64       | 15.43           | 17.57        | 87.86          | 129.31                           | 142.78                            | 37.81                   |
| <b>Stds</b> |            |                  |                     |                         |             |                 |              |                |                                  |                                   |                         |
| 1           | CoJ 64     | 219.00           | 2.47                | 0.93                    | 11.92       | 17.21           | 19.40        | 88.69          | 124.21                           | 143.89                            | 32.87                   |
| 2           | Co 0238    | 218.00           | 2.91                | 1.15                    | 9.99        | 14.49           | 16.50        | 87.85          | 122.38                           | 152.78                            | 36.42                   |
|             | SEm        | 3.23             | 0.05                | 0.04                    | 0.12        | 0.17            | 0.22         | 0.41           | 3.06                             | 3.42                              | 1.53                    |
|             | CD 5%      | 10.19            | 0.16                | 0.13                    | 0.37        | 0.53            | 0.68         | 1.31           | 9.65                             | 10.78                             | 4.81                    |
|             | CV         | 2.63             | 3.23                | 7.26                    | 1.94        | 1.94            | 2.16         | 0.82           | 4.32                             | 4.03                              | 8.09                    |

**Table 5. Advanced Varietal Trial (Early) Ratoon 2016-17**

**Location – FARIDKOT (North West Zone), Design: RBD, Replications: 3, Date of Ratooning: 04.01.2016, Plot Size: 8 rows x 6m x 75cm**

| S. No.      | Entry      | CCS (t/ha) | Cane yield (t/ha) | CCS % (9 m) | Sucrose % (9 m) | Brix % (9 m) | Purity % (9 m) | Pol % cane (9 m) | Extraction % (9 m) | Fibre % (9 m) |
|-------------|------------|------------|-------------------|-------------|-----------------|--------------|----------------|------------------|--------------------|---------------|
| 1           | CoH 11262  | 4.25       | 44.07             | 9.68        | 14.34           | 17.03        | 84.15          |                  | 49.90              |               |
| 2           | CoLk 11201 | 7.10       | 55.19             | 12.84       | 18.43           | 20.53        | 89.73          |                  | 50.96              |               |
| 3           | CoLk 11202 | 8.14       | 85.19             | 9.56        | 13.94           | 16.07        | 86.81          |                  | 58.48              |               |
| 4           | CoLk 11203 | 10.67      | 90.00             | 11.84       | 17.26           | 19.87        | 86.89          |                  | 42.72              |               |
| <b>Stds</b> |            |            |                   |             |                 |              |                |                  |                    |               |
| 1           | CoJ 64     | 7.69       | 60.74             | 12.68       | 18.38           | 20.90        | 87.94          |                  | 51.14              |               |
| 2           | Co 0238    | 10.36      | 87.78             | 11.80       | 17.33           | 20.23        | 85.63          |                  | 53.64              |               |
|             | SEm        | 0.39       | 3.20              | 0.24        | 0.31            | 0.28         | 0.61           |                  | 0.91               |               |
|             | CD 5%      | 1.23       | 10.09             | 0.77        | 0.98            | 0.88         | 1.92           |                  | 2.88               |               |
|             | CV         | 8.40       | 7.87              | 3.70        | 3.25            | 2.53         | 1.22           |                  | 3.09               |               |

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| S. No.      | Entry      | NMC at 9 months ('000/ha) | Stalk Length (cm) | Stalk Diameter (cm) | Single cane weight (kg) | No. of shoots ('000/ha) 180 days | No. of tillers ('000/ha) 90 days |
|-------------|------------|---------------------------|-------------------|---------------------|-------------------------|----------------------------------|----------------------------------|
| 1           | CoH 11262  | 55.74                     | 168.33            | 2.90                | 1.08                    | 56.53                            | 65.93                            |
| 2           | CoLk 11201 | 72.41                     | 148.22            | 2.81                | 0.86                    | 83.29                            | 102.78                           |
| 3           | CoLk 11202 | 93.15                     | 197.44            | 2.01                | 1.02                    | 98.29                            | 112.04                           |
| 4           | CoLk 11203 | 96.67                     | 199.22            | 2.00                | 1.08                    | 117.37                           | 146.67                           |
| <b>Stds</b> |            |                           |                   |                     |                         |                                  |                                  |
| 1           | CoJ 64     | 82.41                     | 175.89            | 2.53                | 0.86                    | 107.18                           | 140.56                           |
| 2           | Co 0238    | 97.22                     | 173.88            | 2.67                | 0.91                    | 104.77                           | 120.93                           |
|             | SEm        | 4.66                      | 2.72              | 0.03                | 0.09                    | 3.75                             | 3.23                             |
|             | CD 5%      | 14.67                     | 8.57              | 0.11                | 0.28                    | 11.80                            | 10.19                            |
|             | CV         | 9.72                      | 2.66              | 2.38                | 15.80                   | 6.86                             | 4.88                             |



## 5. Initial Varietal Trial (Mid late)

The experiment was conducted with thirteen entries and three checks *viz.* entries- Co 13035, Co 13036, CoH 13261, CoH 13262, CoH 13263, CoLk 13204, CoLk 13205, CoPant 13223, CoPant 13224, CoPb 13182, CoPb 13183, CoS 13232, CoS 13233 and checks- CoS 767, CoS 8436 CoPant 97222 in RBD with two replications. Test entries CoS 13233 (152.78 t/ha), CoH 13263 (144.44 t/ha), CoLk 13205 (142.22 t/ha), CoPb 13182 (140.56 t/ha) and CoPb 13183 (136.11 t/ha) gave the significantly higher cane yield over to best check CoPant 97222 (114.44 t/ha), in descending order. CoH 13263 (19.59 t/ha) exhibited significantly highest sugar yield over the best check CoPant 97222 (16.09 t/ha); whereas CoPb 13182 (18.34 t/ha), CoPb 13183 (18.28 t/ha), CoS 13233 (17.95 t/ha), CoLk 13205 (17.21 t/ha), CoS 13232 (16.94 t/ha) and CoPant 13224 (16.46 t/ha) were observed at par to the check CoPant 97222 (Table 6).

**Conclusion:** CoH 13263, CoPb 13182, CoPb 13183, CoS 13233 and CoLk 13205 were found promising for cane yield and sugar yield.

## 6. Advanced Varietal Trial (Mid late) I Plant

The experiment was conducted with six entries and three checks *viz.* entries- Co 12029, CoH 12263, CoLk 11205, CoPant 12226, CoPb 12211, CoS 12232 and checks- CoS 767, CoS 8436, CoPant 97222 in RBD with three replications. Test entries *viz.* CoPant 12226 (133.33 t/ha & 17.47 t/ha), CoS 12232 (121.85 t/ha & 14.84 t/ha) and CoPb 12211 (124.07 t/ha & 14.79 t/ha) were at par to best check CoPant 97222 (119.63 t/ha & 14.86 t/ha) for cane yield & sugar yield, respectively. CoPant 12226 (17.47 t/ha) exhibited significantly highest sugar yield over the best check CoPant 97222 (Table 7).

**Conclusion:** CoS 12232 was found promising in cane and sugar yield.

## 7. Advance Varietal Trial (Mid late) II Plant

The experiment was conducted with six entries and three checks *viz.* test entries- Co 11027, CoH 11263, CoLk 11204, CoLk 11206, CoPb 11214, CoS11232 and checks- CoS 767, CoS 8436, CoPant 97222 in RBD with three replications. Test entry CoLk 11206 gave the highest cane yield (123.70 t/ha) followed by best check CoPant 97222 (121.11 t/ha). None of the test entries were found to be superior over the checks for quality parameters (Table 8).

**Conclusion:** CoLk 11206 was found promising in cane yield.

## 8. Advanced Varietal Trial (Mid late) Ratoon

The experiment was conducted with six entries and three checks *viz.* test entries- Co 11027, CoH 11263, CoLk 11204, CoLk 11206, CoPb 11214, CoS 11232 and checks- CoS 767, CoS 8436, CoPant 97222 in RBD with three replications. Test entries CoLk 11204 and Co 11027 gave the highest cane yield (100.37 t/ha & 98.15 t/ha, respectively); which were at par to the best check CoPant 97222 (97.04 t/ha). None of the test entries were found to be superior over the checks for quality parameters (Table 9).

**Conclusion:** CoLk 11204 was found promising in cane yield.

**Table 6. Initial Varietal Trial (Mid late) 2016-17****Location– FARIDKOT (North West Zone), Design: RBD, Replications: 2, Date of Planting: 16.02.2016, Plot Size: 6 rows x 6m x 75cm**

| S. No.      | Entry        | CCS (t/ha) | Cane yield (t/ha) | CCS % (12 m) | Sucrose % (12 m) | Brix % (12 m) | Purity % (12 m) | Pol % cane (12m) | Extraction % (12 m) | Fibre % (12 m) | NMC at 12 m ('000/ha) |
|-------------|--------------|------------|-------------------|--------------|------------------|---------------|-----------------|------------------|---------------------|----------------|-----------------------|
| 1           | Co 13035     | 17.28      | 121.11            | 14.26        | 20.30            | 22.20         | 91.44           |                  | 55.78               |                | 98.61                 |
| 2           | Co 13036     | 15.87      | 116.11            | 13.65        | 19.70            | 22.20         | 88.74           |                  | 51.59               |                | 101.67                |
| 3           | CoH 13261    | 15.43      | 113.33            | 13.62        | 19.58            | 21.90         | 89.41           |                  | 58.55               |                | 107.50                |
| 4           | CoH 13262    | 13.89      | 103.89            | 13.36        | 19.16            | 21.30         | 89.96           |                  | 59.33               |                | 106.11                |
| 5           | CoH 13263    | 19.59      | 144.44            | 13.56        | 19.48            | 21.75         | 89.56           |                  | 59.34               |                | 130.00                |
| 6           | CoLk 13204   | 16.04      | 126.67            | 12.66        | 18.55            | 21.55         | 86.07           |                  | 52.69               |                | 125.56                |
| 7           | CoLk 13205   | 17.21      | 142.22            | 12.10        | 17.37            | 19.35         | 89.77           |                  | 57.36               |                | 135.28                |
| 8           | CoPant 13223 | 13.98      | 122.78            | 11.40        | 16.38            | 18.30         | 89.51           |                  | 54.42               |                | 129.44                |
| 9           | CoPant 13224 | 16.46      | 120.56            | 13.66        | 19.42            | 21.20         | 91.60           |                  | 54.33               |                | 99.44                 |
| 10          | CoPb 13182   | 18.34      | 140.56            | 13.05        | 18.54            | 20.20         | 91.78           |                  | 56.38               |                | 90.00                 |
| 11          | CoPb 13183   | 18.28      | 136.11            | 13.43        | 19.34            | 21.70         | 89.13           |                  | 51.22               |                | 111.11                |
| 12          | CoS 13232    | 16.94      | 121.67            | 13.92        | 19.82            | 21.70         | 91.34           |                  | 56.20               |                | 125.56                |
| 13          | CoS 13233    | 17.95      | 152.78            | 11.75        | 17.03            | 19.35         | 87.99           |                  | 59.90               |                | 108.33                |
| <b>Stds</b> |              |            |                   |              |                  |               |                 |                  |                     |                |                       |
| 1           | CoS 767      | 12.56      | 98.89             | 12.70        | 18.18            | 20.15         | 90.22           |                  | 57.07               |                | 109.72                |
| 2           | CoS 8436     | 12.33      | 92.78             | 13.29        | 18.96            | 20.85         | 90.94           |                  | 57.16               |                | 87.22                 |
| 3           | CoPant 97222 | 16.09      | 114.44            | 14.06        | 20.16            | 22.40         | 89.98           |                  | 58.49               |                | 96.39                 |
|             | SEm          | 0.96       | 7.03              | 0.07         | 0.07             | 0.14          | 0.54            |                  | 1.22                |                | 3.31                  |
|             | CD 5%        | 2.89       | 21.19             | 0.20         | 0.22             | 0.44          | 1.63            |                  | 3.66                |                | 9.97                  |
|             | CV           | 8.42       | 8.08              | 0.70         | 0.55             | 0.97          | 0.85            |                  | 3.06                |                | 4.25                  |

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| S. No.      | Entry        | Stalk Length (cm) | Stalk Diameter (cm) | Single cane weight (kg) | CCS % (10 m) | Sucrose % (10 m) | Brix % (10 m) | Purity % (10 m) | No. of shoots ('000/ha) 240 days | No. of tillers ('000/ha) 120 days | Germination % (45 days) |
|-------------|--------------|-------------------|---------------------|-------------------------|--------------|------------------|---------------|-----------------|----------------------------------|-----------------------------------|-------------------------|
| 1           | Co 13035     | 297.67            | 2.50                | 1.39                    | 11.69        | 16.77            | 18.65         | 89.94           | 127.89                           | 164.17                            | 27.78                   |
| 2           | Co 13036     | 267.17            | 2.42                | 1.31                    | 10.79        | 15.69            | 17.95         | 87.44           | 113.58                           | 130.00                            | 27.55                   |
| 3           | CoH 13261    | 229.34            | 2.62                | 1.23                    | 11.93        | 17.26            | 19.55         | 88.26           | 122.33                           | 144.17                            | 42.36                   |
| 4           | CoH 13262    | 222.17            | 2.55                | 1.15                    | 11.10        | 15.81            | 17.30         | 91.36           | 115.78                           | 129.72                            | 20.60                   |
| 5           | CoH 13263    | 283.67            | 2.51                | 1.23                    | 10.75        | 15.48            | 17.35         | 89.19           | 158.44                           | 193.33                            | 40.74                   |
| 6           | CoLk 13204   | 231.84            | 2.35                | 1.10                    | 8.80         | 13.00            | 15.35         | 84.67           | 157.49                           | 193.33                            | 37.96                   |
| 7           | CoLk 13205   | 308.67            | 2.27                | 1.14                    | 9.76         | 14.16            | 16.15         | 87.67           | 180.01                           | 227.78                            | 40.05                   |
| 8           | CoPant 13223 | 313.00            | 2.13                | 1.00                    | 9.17         | 13.15            | 14.60         | 90.04           | 151.19                           | 176.39                            | 30.56                   |
| 9           | CoPant 13224 | 316.33            | 2.33                | 1.35                    | 10.76        | 15.50            | 17.40         | 89.08           | 111.91                           | 130.83                            | 34.49                   |
| 10          | CoPb 13182   | 316.67            | 2.77                | 1.76                    | 11.86        | 17.01            | 18.90         | 89.98           | 110.28                           | 135.83                            | 35.65                   |
| 11          | CoPb 13183   | 294.00            | 2.40                | 1.38                    | 10.91        | 15.87            | 18.15         | 87.41           | 124.53                           | 142.22                            | 42.82                   |
| 12          | CoS 13232    | 250.59            | 2.43                | 0.99                    | 9.93         | 14.66            | 17.30         | 84.76           | 150.19                           | 178.61                            | 39.35                   |
| 13          | CoS 13233    | 306.00            | 2.63                | 1.57                    | 9.65         | 13.83            | 15.35         | 90.05           | 118.66                           | 132.78                            | 31.48                   |
| <b>Stds</b> |              |                   |                     |                         |              |                  |               |                 |                                  |                                   |                         |
| 1           | CoS 767      | 290.50            | 2.35                | 1.09                    | 11.06        | 16.02            | 18.20         | 88.02           | 128.72                           | 154.17                            | 31.48                   |
| 2           | CoS 8436     | 208.50            | 2.72                | 1.24                    | 10.61        | 15.27            | 17.10         | 89.27           | 96.11                            | 110.28                            | 29.63                   |
| 3           | CoPant 97222 | 228.50            | 2.60                | 1.24                    | 11.34        | 16.29            | 18.15         | 89.72           | 107.03                           | 121.94                            | 30.32                   |
|             | SEm          | 5.38              | 0.06                | 0.09                    | 0.19         | 0.26             | 0.32          | 0.74            | 2.80                             | 4.12                              | 1.33                    |
|             | CD 5%        | 16.23             | 0.17                | 0.27                    | 0.56         | 0.78             | 0.97          | 2.22            | 8.43                             | 12.43                             | 4.02                    |
|             | CV           | 2.79              | 3.19                | 10.08                   | 2.48         | 2.40             | 2.63          | 1.18            | 3.05                             | 3.78                              | 5.56                    |

**Table 7. Advanced Varietal Trial (Mid late) I Plant 2016-17****Location – FARIDKOT (North West Zone), Design: RBD, Replications: 3, Date of Planting: 11.02.2016, Plot Size: 8 rows x 6m x 75 cm**

| S. No.      | Entry        | CCS (t/ha) | Cane yield (t/ha) | CCS % (12 m) | Sucrose % (12 m) | Brix % (12 m) | Purity % (12 m) | Pol % cane (12 m) | Extraction % (12 m) | Fibre % (12 m) | NMC at 12 m ('000/ha) |
|-------------|--------------|------------|-------------------|--------------|------------------|---------------|-----------------|-------------------|---------------------|----------------|-----------------------|
| 1           | Co 12029     | 14.31      | 115.19            | 12.42        | 17.90            | 20.10         | 89.05           |                   | 55.88               |                | 107.96                |
| 2           | CoH 12263    | 14.00      | 109.26            | 12.82        | 18.42            | 20.57         | 89.56           |                   | 55.17               |                | 107.22                |
| 3           | CoLk 12205   | 12.62      | 104.07            | 12.12        | 17.38            | 19.30         | 90.04           |                   | 58.11               |                | 112.22                |
| 4           | CoPant 12226 | 17.47      | 133.33            | 13.10        | 18.67            | 20.50         | 91.09           |                   | 55.48               |                | 105.37                |
| 5           | CoPb 12211   | 14.79      | 124.07            | 11.92        | 17.08            | 18.93         | 90.20           |                   | 62.33               |                | 111.11                |
| 6           | CoS 12232    | 14.84      | 121.85            | 12.20        | 17.54            | 19.60         | 89.47           |                   | 57.92               |                | 127.59                |
| <b>Stds</b> |              |            |                   |              |                  |               |                 |                   |                     |                |                       |
| 1           | CoS 767      | 12.32      | 98.89             | 12.46        | 18.03            | 20.43         | 88.26           |                   | 57.04               |                | 111.30                |
| 2           | CoS 8436     | 12.10      | 87.04             | 13.91        | 19.85            | 21.83         | 90.91           |                   | 54.63               |                | 97.04                 |
| 3           | CoPant 97222 | 14.86      | 119.63            | 12.43        | 17.70            | 19.37         | 91.39           |                   | 58.53               |                | 102.04                |
|             | SEm          | 0.62       | 5.30              | 0.14         | 0.19             | 0.20          | 0.47            |                   | 0.75                |                | 5.15                  |
|             | CD 5%        | 1.86       | 15.88             | 0.42         | 0.56             | 0.60          | 1.41            |                   | 2.24                |                | 15.44                 |
|             | CV           | 7.58       | 8.15              | 1.94         | 1.78             | 1.73          | 0.91            |                   | 2.26                |                | 8.17                  |

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| S. No.      | Entry        | Stalk Length (cm) | Stalk Diameter (cm) | Single cane weight (kg) | CCS % (10 m) | Sucrose % (10 m) | Brix % (10 m) | Purity % (10 m) | No. of shoots ('000/ha) 240 days | No. of tillers ('000/ha) 120 days | Germi nation % (45 days) |
|-------------|--------------|-------------------|---------------------|-------------------------|--------------|------------------|---------------|-----------------|----------------------------------|-----------------------------------|--------------------------|
| 1           | Co 12029     | 268.33            | 2.79                | 1.18                    | 10.82        | 15.55            | 17.37         | 89.54           | 121.42                           | 139.44                            | 41.98                    |
| 2           | CoH 12263    | 237.22            | 2.86                | 1.12                    | 10.88        | 15.66            | 17.53         | 89.29           | 114.96                           | 128.15                            | 37.04                    |
| 3           | CoLk 12205   | 296.67            | 2.55                | 1.07                    | 9.53         | 13.80            | 15.67         | 88.09           | 120.05                           | 133.33                            | 32.41                    |
| 4           | CoPant 12226 | 313.33            | 2.70                | 1.38                    | 10.97        | 15.86            | 17.93         | 88.44           | 108.02                           | 116.11                            | 33.95                    |
| 5           | CoPb 12211   | 327.22            | 2.55                | 1.24                    | 10.67        | 15.35            | 17.20         | 89.26           | 129.47                           | 152.22                            | 30.25                    |
| 6           | CoS 12232    | 277.78            | 2.49                | 1.06                    | 11.00        | 15.82            | 17.70         | 89.38           | 152.45                           | 181.48                            | 35.49                    |
| <b>Stds</b> |              |                   |                     |                         |              |                  |               |                 |                                  |                                   |                          |
| 1           | CoS 767      | 266.11            | 2.62                | 1.04                    | 11.84        | 17.00            | 18.93         | 89.77           | 121.62                           | 136.11                            | 34.88                    |
| 2           | CoS 8436     | 185.55            | 2.60                | 0.93                    | 11.85        | 17.06            | 19.13         | 89.17           | 112.71                           | 132.59                            | 31.17                    |
| 3           | CoPant 97222 | 284.44            | 2.71                | 1.17                    | 11.81        | 17.02            | 19.10         | 89.09           | 125.25                           | 151.67                            | 37.96                    |
|             | SEm          | 6.97              | 0.06                | 0.09                    | 0.13         | 0.17             | 0.16          | 0.42            | 4.70                             | 5.31                              | 1.33                     |
|             | CD 5%        | 20.91             | 0.18                | 0.27                    | 0.40         | 0.52             | 0.49          | 1.27            | 14.10                            | 15.91                             | 3.99                     |
|             | CV           | 4.42              | 3.86                | 13.53                   | 2.11         | 1.88             | 1.58          | 0.82            | 6.63                             | 6.51                              | 6.59                     |

**Table 8. Advanced Varietal Trial (Mid late) II Plant 2016-17****Location**–FARIDKOT (North West Zone), **Design:** RBD, **Replications:** 3, **Date of Planting:** 08.02.2016, **Plot Size:** 8 rows x 6m x 75 cm

| S. No.      | Entry        | CCS (t/ha) | Cane yield (t/ha) | CCS % (12 m) | Sucrose % (12 m) | Brix % (12 m) | Purity % (12 m) | Pol % cane (12m) | Extraction % (12 m) | Fibre % (12 m) | NMC at 12 m ('000/ha) |
|-------------|--------------|------------|-------------------|--------------|------------------|---------------|-----------------|------------------|---------------------|----------------|-----------------------|
| 1           | Co 11027     | 15.19      | 109.63            | 13.85        | 20.01            | 22.60         | 88.57           |                  | 53.58               |                | 86.48                 |
| 2           | CoH 11263    | 16.07      | 115.93            | 13.85        | 20.01            | 22.60         | 88.57           |                  | 50.00               |                | 97.22                 |
| 3           | CoLk 11204   | 14.26      | 108.15            | 13.18        | 19.06            | 21.57         | 88.39           |                  | 59.87               |                | 105.00                |
| 4           | CoLk 11206   | 16.69      | 123.70            | 13.49        | 19.25            | 21.17         | 90.95           |                  | 51.55               |                | 108.52                |
| 5           | CoPb 11214   | 14.86      | 118.15            | 12.57        | 18.11            | 20.33         | 89.09           |                  | 50.63               |                | 110.93                |
| 6           | CoS 11232    | 14.19      | 109.63            | 12.94        | 18.45            | 20.23         | 91.19           |                  | 54.75               |                | 106.85                |
| <b>Stds</b> |              |            |                   |              |                  |               |                 |                  |                     |                |                       |
| 1           | CoS 767      | 13.41      | 106.30            | 12.62        | 17.99            | 19.73         | 91.17           |                  | 59.11               |                | 116.30                |
| 2           | CoS 8436     | 13.28      | 94.44             | 14.06        | 20.12            | 22.27         | 90.38           |                  | 57.41               |                | 104.81                |
| 3           | CoPant 97222 | 16.93      | 121.11            | 13.98        | 20.16            | 22.67         | 88.93           |                  | 67.92               |                | 100.56                |
|             | SEm          | 0.86       | 6.43              | 0.09         | 0.07             | 0.18          | 0.83            |                  | 1.11                |                | 6.08                  |
|             | CD 5%        | 2.57       | 19.28             | 0.28         | 0.21             | 0.53          | 2.48            |                  | 3.34                |                | 18.22                 |
|             | CV           | 9.92       | 9.95              | 1.20         | 0.64             | 1.43          | 1.60            |                  | 3.44                |                | 10.11                 |

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| S. No.      | Entry        | Stalk Length (cm) | Stalk Diameter (cm) | Single cane weight (kg) | CCS % (10 m) | Sucrose % (10 m) | Brix % (10 m) | Purity % (10 m) | No. of shoots ('000/ha) 240 days | No. of tillers ('000/ha) 120 days | Germination % (45 days) |
|-------------|--------------|-------------------|---------------------|-------------------------|--------------|------------------|---------------|-----------------|----------------------------------|-----------------------------------|-------------------------|
| 1           | Co 11027     | 228.33            | 2.87                | 1.36                    | 11.12        | 16.30            | 18.97         | 85.96           | 100.08                           | 118.52                            | 34.72                   |
| 2           | CoH 11263    | 183.55            | 2.96                | 1.21                    | 10.57        | 15.41            | 17.73         | 86.92           | 99.27                            | 105.56                            | 37.73                   |
| 3           | CoLk 11204   | 226.00            | 2.62                | 1.18                    | 10.46        | 15.17            | 17.27         | 87.83           | 124.26                           | 147.96                            | 49.54                   |
| 4           | CoLk 11206   | 255.66            | 2.65                | 1.35                    | 11.41        | 16.45            | 18.50         | 88.93           | 119.51                           | 136.11                            | 51.62                   |
| 5           | CoPb 11214   | 238.44            | 2.56                | 1.14                    | 10.15        | 14.80            | 17.07         | 86.73           | 137.60                           | 168.70                            | 37.96                   |
| 6           | CoS 11232    | 217.55            | 2.31                | 1.05                    | 10.79        | 15.50            | 17.30         | 89.58           | 111.04                           | 120.56                            | 28.47                   |
| <b>Stds</b> |              |                   |                     |                         |              |                  |               |                 |                                  |                                   |                         |
| 1           | CoS 767      | 214.11            | 2.57                | 1.13                    | 11.55        | 16.50            | 18.20         | 90.65           | 139.38                           | 167.59                            | 46.76                   |
| 2           | CoS 8436     | 179.44            | 2.33                | 0.93                    | 10.69        | 15.47            | 17.53         | 88.22           | 119.45                           | 138.52                            | 45.83                   |
| 3           | CoPant 97222 | 246.33            | 2.54                | 1.22                    | 12.44        | 17.89            | 20.00         | 89.47           | 124.56                           | 153.89                            | 42.59                   |
|             | SEm          | 5.52              | 0.06                | 0.07                    | 0.24         | 0.34             | 0.39          | 0.55            | 5.66                             | 6.41                              | 2.89                    |
|             | CD 5%        | 16.56             | 0.19                | 0.21                    | 0.73         | 1.03             | 1.18          | 1.65            | 16.96                            | 19.21                             | 8.67                    |
|             | CV           | 4.33              | 4.32                | 10.35                   | 3.82         | 3.74             | 3.79          | 1.08            | 8.20                             | 7.94                              | 12.01                   |

**Table 9. Advanced Varietal Trial (Mid late) Ratoon 2016-17****Location– FARIDKOT (North West Zone), Design: RBD, Replications: 3, Date of Ratooning: 04.03.2016, Plot Size: 8rows x 6m x 75 cm**

| S. No.      | Entry        | CCS (t/ha) | Cane yield (t/ha) | CCS % (11 m) | Sucrose % (11 m) | Brix % (11 m) | Purity % (11 m) | Pol % cane (11m) | Extraction % (11 m) | Fibre % (11 m) |
|-------------|--------------|------------|-------------------|--------------|------------------|---------------|-----------------|------------------|---------------------|----------------|
| 1           | Co 11027     | 10.24      | 98.15             | 10.38        | 15.15            | 17.47         | 86.71           |                  | 51.51               |                |
| 2           | CoH 11263    | 9.41       | 92.96             | 10.11        | 14.87            | 17.40         | 85.41           |                  | 52.53               |                |
| 3           | CoLk 11204   | 10.90      | 100.37            | 10.86        | 15.64            | 17.53         | 89.18           |                  | 52.83               |                |
| 4           | CoLk 11206   | 10.23      | 92.59             | 11.03        | 15.92            | 17.93         | 88.79           |                  | 49.68               |                |
| 5           | CoPb 11214   | 7.56       | 78.15             | 9.66         | 13.99            | 15.87         | 88.15           |                  | 45.51               |                |
| 6           | CoS 11232    | 9.60       | 96.30             | 10.01        | 14.46            | 16.33         | 88.51           |                  | 54.51               |                |
| <b>Stds</b> |              |            |                   |              |                  |               |                 |                  |                     |                |
| 1           | CoS 767      | 10.94      | 96.30             | 11.37        | 16.40            | 18.47         | 88.77           |                  | 54.44               |                |
| 2           | CoS 8436     | 8.84       | 73.70             | 12.00        | 17.24            | 19.23         | 89.62           |                  | 53.64               |                |
| 3           | CoPant 97222 | 10.81      | 97.04             | 11.14        | 15.90            | 17.50         | 90.86           |                  | 54.21               |                |
|             | SEm          | 0.72       | 5.78              | 0.29         | 0.38             | 0.36          | 0.79            |                  | 0.69                |                |
|             | CD 5%        | 2.15       | 17.32             | 0.88         | 1.15             | 1.07          | 2.38            |                  | 2.07                |                |
|             | CV           | 12.63      | 10.91             | 4.75         | 4.28             | 3.52          | 1.55            |                  | 2.30                |                |

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| S. No.      | Entry        | NMC at 11 months ('000/ha) | Stalk Length (cm) | Stalk Diameter (cm) | Single cane weight (kg) | No. of shoots ('000/ha) 180 days | No. of tillers ('000/ha) 90 days |
|-------------|--------------|----------------------------|-------------------|---------------------|-------------------------|----------------------------------|----------------------------------|
| 1           | Co 11027     | 94.07                      | 252.11            | 2.57                | 1.23                    | 95.07                            | 104.26                           |
| 2           | CoH 11263    | 91.48                      | 213.22            | 2.71                | 1.16                    | 95.99                            | 108.70                           |
| 3           | CoLk 11204   | 94.44                      | 234.11            | 2.54                | 1.10                    | 100.71                           | 115.19                           |
| 4           | CoLk 11206   | 93.89                      | 233.55            | 2.52                | 1.10                    | 100.16                           | 114.63                           |
| 5           | CoPb 11214   | 100.37                     | 230.44            | 2.34                | 0.97                    | 118.31                           | 144.44                           |
| 6           | CoS 11232    | 117.59                     | 234.67            | 2.28                | 0.84                    | 121.83                           | 134.26                           |
| <b>Stds</b> |              |                            |                   |                     |                         |                                  |                                  |
| 1           | CoS 767      | 124.63                     | 201.55            | 2.39                | 0.80                    | 137.94                           | 159.44                           |
| 2           | CoS 8436     | 90.74                      | 179.11            | 2.48                | 0.81                    | 92.66                            | 102.78                           |
| 3           | CoPant 97222 | 105.93                     | 213.89            | 2.54                | 1.07                    | 109.05                           | 120.37                           |
|             | SEm          | 4.03                       | 4.42              | 0.04                | 0.03                    | 3.81                             | 3.82                             |
|             | CD 5%        | 12.08                      | 13.26             | 0.13                | 0.09                    | 11.43                            | 11.46                            |
|             | CV           | 6.88                       | 3.46              | 3.10                | 5.09                    | 6.12                             | 5.40                             |