**Title:**
**Comparison of Yield and Fruit quality among Inbred Lines of Tomatoes**

**Objective:**

To evaluate the performance of Inbred lines as for potential commercial Open pollination (OP) varieties.

**Result**

The result from the present study showing in Table 1 indicated that inbred line CF10 observed with high of Soluble Solid (Sugar level) and inbred line AVTO213 observed with low Soluble Solid. The locus number among the inbred lines range from 2-7, large number observed on inbred line AVTO2132 and small number observed in inbred lines AVTO2128, CF10, AVTO2127 and AVTO2131. Large fruit size observed on inbred line AVTO2132 and small fruit size inbred line CF10.

Table 2 presented the measurement obtained from a plot for a marketable yield of replication comparison inbred lines. The measurement produced from inbred lines had significant different of marketable yield per plot. The perfect performance was observed on AVTO1802 and AVTO1803 follow by AVTO1804, AVTO2132 and AVTO2136 inbred lines compared to control lines (Melrose) and lowest average marketable yield inbred lines observed on AVTO2127 inbred line.

Table 3 presented the measurement obtained from a plot for a yield of replication comparison inbred lines. The measurement produced from inbred lines had significant different of yield per plot. The perfect performance was observed on AVTO1802, AVTO1803, AVTO2132 and AVTO2101 inbred lines compared to control line (Melrose) and lowest average yield inbred line observed on AVTO2127 inbred line

Ten staff within the research station conducted the taste evaluated are showing in Figure 1 and Figure 2. It showed that eight staff taste with soft fruit texture on four inbred lines, six staff tasted with hard fruit texture on two inbred lines and five staff tasted with brittle fruit texture on one inbred line. Juice content observed with eight staff tasted with moderate Juice content on one inbred line and four staff tasted with very high juice content on three inbred lines, four staff tasted with low juice content on one inbred line, two staff tasted with very low juice content on one inbred line, while one staff tasted with extreme high juice content on four inbred lines.

**Table 1: Fruit quality of comparison inbred lines**

| ENTRY CODE | Soluble Solid | Locus Number | Fruit weight (g) |
|---|---|---|---|
| AVTO1907 | 6.1 | 3-4 | 101.7 |
| AVTO2128 | 6.8 | 2 | 70.3 |
| AVTO1804 | 6.6 | 4-5 | 120.0 |
| AVTO1802 | 6.7 | 6 | 137.7 |
| AVTO1906 | 6.9 | 2-3 | 99.0 |
| AVTO2129 | 7.3 | 2-4 | 65.3 |
| CK | 7.3 | 2-3 | 96.7 |

| | | | |
|---|---|---|---|
| AVTO2138 | 6.2 | 3 | 105.7 |
| AVTO2136 | 7.4 | 4-5 | 172.3 |
| AVTO2133 | 6.0 | 3 | 107.0 |
| AVTO2132 | 6.2 | 6-7 | 180.7 |
| AVTO2137 | 6.3 | 5-6 | 105.3 |
| CF10 | 9.8 | 2 | 25.7 |
| AVTO2127 | 6.9 | 2 | 49.7 |
| AVTO2131 | 6.5 | 2 | 83.7 |
| AVTO2101 | 6.8 | 6 | 136.0 |
| AVTO1803 | 6.2 | 5-6 | 140.0 |

**Table 2: Marketable yield of evaluation inbred lines with significance grouping**

| | Marketable Yield/Plots (kg) | | | |
|---|---|---|---|---|
| **ENTRY CODE** | **I** | **II** | **III** | **Avg/Marketable Yield (kg)** |
| AVTO1907 | 5.760 | 3.150 | 4.820 | $4.577^{df}$ |
| AVTO2128 | 1.750 | 1.630 | 3.320 | $2.233^{ef}$ |
| AVTO1804 | 7.050 | 6.330 | 4.190 | $5.857^{d}$ |
| AVTO1802 | 8.520 | 7.300 | 12.590 | $9.470^{a}$ |
| AVTO1906 | 5.390 | 2.450 | 4.000 | $3.947^{e}$ |
| AVTO2129 | 2.100 | 1.640 | 2.790 | $2.177^{ef}$ |
| CK | 4.090 | 3.680 | 5.700 | $4.490^{de}$ |
| AVTO2138 | 4.030 | 0.990 | 3.170 | $2.730^{ef}$ |
| AVTO2136 | 5.370 | 6.500 | 3.610 | $5.160^{d}$ |
| AVTO2133 | 5.190 | 5.360 | 4.170 | $4.907^{de}$ |
| AVTO2132 | 7.700 | 4.820 | 5.420 | $5.980^{d}$ |
| AVTO2137 | 6.490 | 2.060 | 4.060 | $4.203^{de}$ |
| CF10 | 2.740 | 3.100 | 5.200 | $3.680^{e}$ |
| AVTO2127 | 2.360 | 1.210 | 1.350 | $1.640^{f}$ |
| AVTO2131 | 2.740 | 2.430 | 1.440 | $2.203^{ef}$ |
| AVTO2101 | 7.270 | 3.510 | 8.560 | $6.447^{c}$ |
| AVTO1803 | 10.220 | 9.120 | 7.580 | $8.97^{b}$ |

**Table 3: Plot yield from the evaluation inbred lines with significance grouping**

| | Yield/Plots (kg) | | | |
|---|---|---|---|---|
| **ENTRY CODE** | **I** | **II** | **III** | **Avg/Yield (kg)** |
| AVTO1907 | 7.880 | 4.650 | 6.710 | $6.413^{bc}$ |
| AVTO2128 | 1.930 | 1.700 | 3.490 | $2.373^{de}$ |
| AVTO1804 | 7.780 | 6.530 | 4.360 | $6.223^{bc}$ |
| AVTO1802 | 10.680 | 8.170 | 13.780 | $10.877^{a}$ |
| AVTO1906 | 7.600 | 4.260 | 6.440 | $6.100^{bc}$ |
| AVTO2129 | 2.140 | 1.640 | 2.830 | $2.203^{de}$ |
| CK | 4.090 | 3.740 | 6.010 | $4.613^{cd}$ |
| AVTO2138 | 4.350 | 1.040 | 3.170 | $2.853^{de}$ |
| AVTO2136 | 6.090 | 6.550 | 4.300 | $5.647^{c}$ |
| AVTO2133 | 6.760 | 6.600 | 4.380 | $5.913^{c}$ |
| AVTO2132 | 14.770 | 8.050 | 6.990 | $9.937^{ab}$ |
| AVTO2137 | 6.890 | 2.650 | 4.960 | $4.833^{cd}$ |

| | | | | |
|---|---|---|---|---|
| CF10 | 2.740 | 3.140 | 5.200 | 3.693[d] |
| AVTO2127 | 2.530 | 1.210 | 1.400 | 1.713[e] |
| AVTO2131 | 2.920 | 2.630 | 1.570 | 2.373[de] |
| AVTO2101 | 8.130 | 3.640 | 9.440 | 7.070[b] |
| AVTO1803 | 11.440 | 10.390 | 8.260 | 10.030[a] |

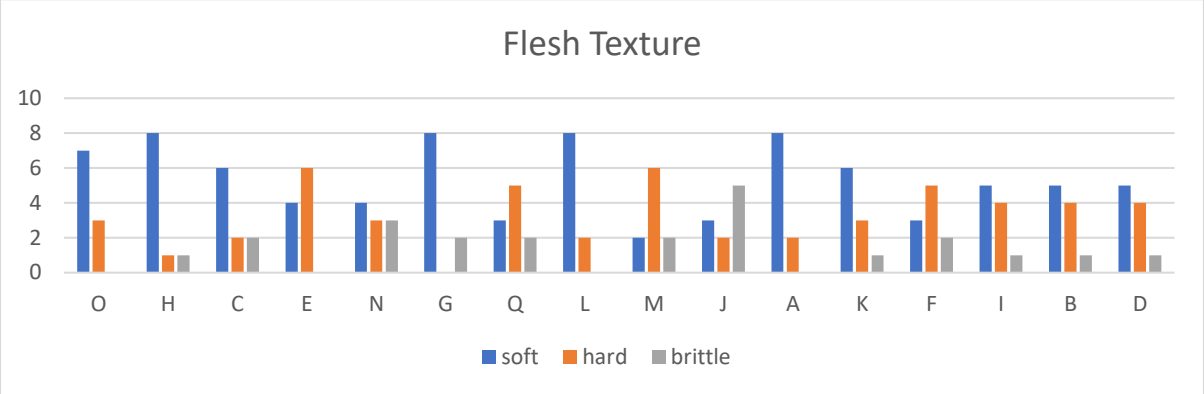


**Figure 1: Comparison of 15 inbred lines with control line for the flesh texture taste.**

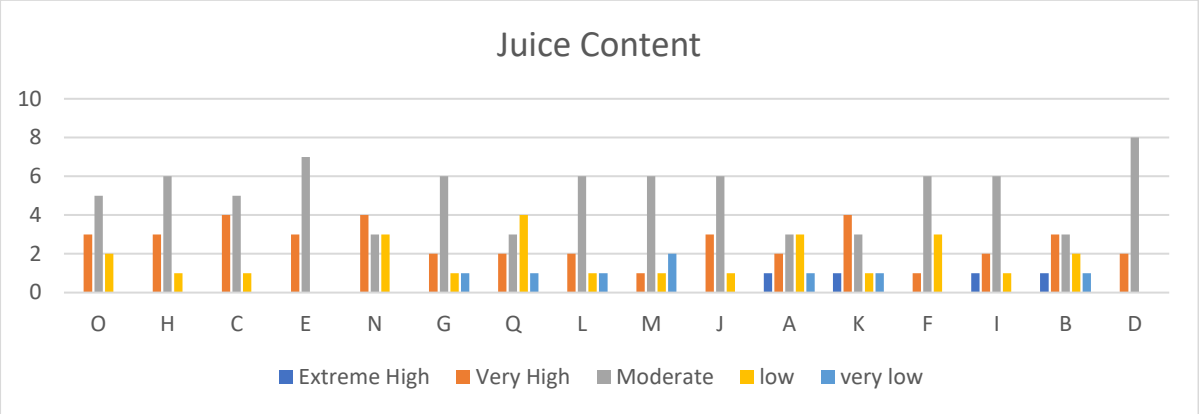


**Figure 2: Comparison of 15 inbred lines with control line for the fruit juice content taste.**

**Recommendation**

- Excellent inbred line was selected from materials provide from World Vegetable Centre from Taiwan expressed favourable traits on commercial importance
- Seventeen inbred lines planted in replicate trail season, only 5 inbred lines performed well on marketable yield during season, and 4 inbred lines performed well on the plot yield during season
- Among these well performance inbred lines during the season, two inbred lines had outstanding performance in marketable yield and plot yield, AVTO1802 and AVTO1803.

**Title:**
**Comparison of Yield and Fruit quality among Inbred Lines of Eggplant**

## Objective

To evaluate the performance of Inbred lines as for potential commercial Open pollination (OP) varieties.

## Result

The seedling grew stronger and healthier inside the shade cloth. The seed successful germinated within 7-10 days. The field was prepared properly, applied NPK fertilizer for base and growth stage. The transplanting was effective. However, several transplanted seedlings die as a result of water insufficient. Seedling grew fast and where healthy, where management was conducted properly.

Table 1 presented the measurement obtained from a plot for a yield of replication comparison inbred lines. The measurement produced from inbred lines had significant different of yield per plot. The perfect performance was observed on 64 and 486 inbred lines compared to control lines and lowest average Plot yield observed on 796 and 670 inbred lines.

Table 2 presented the measurement obtained from a plot for a yield of replication comparison inbred lines. The measurement produced from inbred lines had significant different of marketable yield per plot. The perfect performance was observed on 64, 486 and 671 inbred lines compared to control lines and lowest average Plot yield observed on 796 and 670 inbred lines

Table 3 presented the measurement obtained from a plot for a yield of replication comparison inbred lines.

**Table 1: Plot yield from ten inbred lines of eggplant with significance grouping.**

| | Plot per Yield (kg) | | | Average Plot per Yield (kg) |
|---|---|---|---|---|
| **Codes** | I | II | III | |
| **104** | 7.33 | 6.92 | 8.68 | 7.64d$^{e}$ |
| **752** | 11.70 | 10.71 | 9.85 | 10.75$^{cd}$ |
| **485** | 13.22 | 7.90 | 11.39 | 10.84$^{c}$ |
| **670** | 4.25 | 4.61 | 3.83 | 4.23e$^{f}$ |
| **671** | 12.04 | 14.09 | 9.99 | 12.04$^{b}$ |
| **486** | 14.98 | 10.54 | 14.08 | 13.20$^{b}$ |
| **101** | 6.65 | 5.43 | 4.06 | 5.38$^{e}$ |
| **796** | 4.19 | 4.83 | 5.38 | 4.80$^{ef}$ |
| **Ck** | 11.79 | 10.21 | 11.71 | 11.24$^{bc}$ |
| **64** | 20.47 | 23.03 | 21.16 | 21.55$^{a}$ |
| **851** | 7.98 | 7.86 | 8.28 | 8.04$^{d}$ |

**Table 2: Marketable Yield from ten inbred lines of eggplant with significance grouping.**

| | Marketable Yield/plots (kg) | | | Average Marketable yield per Plots |
|---|---|---|---|---|
| **Codes** | I | II | III | |
| **104** | 6.88 | 6.75 | 8.68 | $7.44^{d}$ |
| **752** | 11.7 | 9.91 | 9.35 | $10.32^{c}$ |
| **485** | 12.77 | 7.78 | 10.63 | $10.39^{c}$ |
| **670** | 4.25 | 4.23 | 3.43 | $3.97^{f}$ |
| **671** | 11.33 | 14.09 | 9.44 | $11.62^{bc}$ |
| **486** | 14.98 | 10.54 | 12.95 | $12.82^{b}$ |
| **101** | 6.65 | 5.37 | 3.97 | $5.33^{e}$ |
| **796** | 4.19 | 4.57 | 2.06 | $3.61^{fg}$ |
| **Ck** | 11.03 | 9.97 | 10.26 | $10.42^{c}$ |
| **64** | 17.6 | 21.74 | 18.9 | $19.41^{a}$ |
| **851** | 7.89 | 7.37 | 7.95 | $7.74^{d}$ |

**Table 3: Inbred lines with fruit width, Fruit length and Fruit Weight**

| Codes | Fruit Width | Fruit Length | Fruit Weight |
|---|---|---|---|
| **104** | 6.82 | 15.2 | 188 |
| **752** | 11.14 | 12.4 | 488 |
| **485** | 8.60 | 16.84 | 403 |
| **670** | 6.28 | 14.72 | 214 |
| **671** | 12.16 | 15.52 | 748 |
| **486** | 12.34 | 12.94 | 722 |
| **101** | 4.32 | 17.52 | 93 |
| **796** | 4.76 | 6.28 | 52 |
| **Ck** | 4.92 | 25.4 | 193 |
| **64** | 9.14 | 25.22 | 729 |
| **851** | 5.50 | 24.92 | 222 |

**Recommendation**

- Excellent inbred line was selected from materials provide from World Vegetable Centre from Taiwan expressed favourable traits on commercial importance.
- Among these well performance inbred lines during the season, two inbred lines had outstanding performance in marketable yield and plot yield, 64 and 486