**Table 3.** Effect of transplanting date, foliar feeding with NPK and their interactions on some vegetative growth traits of eggplant C.V. Black Beauty during 2016 and 2017 seasons

| Treatments | | Plant height (cm) | | Branches No. /plant | | Leaves No./plant | | Area/ leaf ($cm^2$) | |
|---|---|---|---|---|---|---|---|---|---|
| **Transplanting date** | **Foliar feeding** | **2016** | **2017** | **2016** | **2017** | **2016** | **2017** | **2016** | **2017** |
| ***The main effect of transplanting date*** | | | | | | | | | |
| **Summer (1st April)** | - | 60.4 | 57.2 | 10.0 | 9.33 | 55.6 | 52.7 | 241.9 | 251.2 |
| **Late summer (1st June)** | - | 52.5 | 51.1 | 7.89 | 6.67 | 45.1 | 44.3 | 167.6 | 161.5 |
| **LSD at 0.05 level** | | **1.34** | **2.82** | **1.83** | **0.88** | **0.51** | **2.32** | **10.88** | 9.80 |
| ***The main effect of foliar feeding*** | | | | | | | | | |
| - | **Without (control)** | 50.1 | 47.3 | 7.50 | 7.00 | 43.5 | 40.8 | 147.3 | 168.6 |
| - | **@Potassium-F 3 ml/L** | 58.0 | 56.1 | 9.17 | 8.17 | 52.5 | 50.33 | 215.7 | 221.6 |
| - | ***Raizante at 2ml/L** | 60.8 | 59.0 | 10.2 | 8.83 | 55.0 | 54.3 | 224.3 | 228.9 |
| **LSD at 0.05 level** | | **1.74** | **1.2** | **1.08** | **0.65** | **3.19** | **1.95** | **8.59** | **8.30** |
| ***Transplanting date X foliar feeding (Effect of interaction)*** | | | | | | | | | |
| **Summer (April) X** | **Without (control)** | 53.0 | 50.0 | 7.70 | 8.00 | 45.0 | 42.0 | 196.6 | 186.8 |
| **Summer (April) X** | **Potassium-F 3 ml/L** | 63.3 | 58.7 | 10.3 | 9.70 | 59.7 | 54.7 | 257.2 | 280.0 |
| **Summer (April) X** | **Raizante at 2 ml/L** | 65.0 | 63.0 | 12.0 | 10.3 | 62.0 | 61.3 | 271.8 | 286.9 |
| **Late summer (June) X** | **Without (control)** | 47.3 | 44.3 | 7.30 | 6.00 | 42.0 | 39.7 | 151.9 | 150.4 |
| **Late summer (June) X** | **Potassium-F 3 ml/L** | 52.7 | 53.7 | 8.00 | 6.70 | 45.3 | 46.0 | 174.1 | 163.3 |
| **Late summer (June) X** | **Raizante at 2 ml/L** | 56.7 | 55.0 | 8.30 | 7.30 | 48.0 | 47.3 | 176.9 | 170.8 |
| **LSD at 0.05 level** | | **2.4** | **1.7** | **1.5** | **0.9** | **4.4** | **2.7** | **11.85** | **11.54** |

@Potassium-F containing 0.0% N, 10% $P_2O_5$ and 30% $K_2O$,

*Raizante containing 2.4 % N, 1.25 P and 1.5% K in chelated form + 20% polysaccharides, 3.5% free amino acids,

**Table 4.** Effect of transplanting date, foliar feeding with NPK and their interactions on some leaf chemical constituents of eggplant C.V. Black Beauty during 2016 and 2017 seasons

| Treatments | | N% | | P% | | K% | | Chlorophyll (SPAD) | |
|---|---|---|---|---|---|---|---|---|---|
| **Transplanting date** | **Foliar feeding** | **2016** | **2017** | **2016** | **2017** | **2016** | **2017** | **2016** | **2017** |
| ***The main effect of transplanting date*** | | | | | | | | | |
| **Summer (1st April)** | - | 4.04 | 0.69 | 3.52 | 4.04 | 0.64 | 3.51 | 51 3 | 65.0 |
| **Late summer (1st une)** | - | 3.75 | 0.52 | 3.26 | 3.61 | 0.49 | 3.25 | 46.0 | 50.8 |
| **LSD at 0.05 level** | | **0.08** | **0.04** | **0.11** | **0.05** | **0.05** | **0.06** | **2.91** | **9.59** |
| ***The main effect of foliar feeding*** | | | | | | | | | |
| - | **Without (control)** | 3.08 | 0.46 | 3.03 | 3.015 | 0.46 | 2.73 | 44.1 | 50.6 |
| - | **@Potassium-F at 3ml/L** | 4.22 | 0.66 | 3.56 | 4.12 | 0.60 | 3.70 | 51.3 | 60.3 |
| - | ***Raizante at 2 ml/L** | 4.38 | 0.69 | 3.56 | 4.20 | 0.64 | 3.71 | 50.17 | 62.8 |
| **LSD at 0.05 level** | | **0.09** | **0.03** | **0.05** | **0.13** | **0.04** | **0.03** | **1.37** | **4.01** |
| ***Transplanting date X foliar feeding (Effect of interaction)*** | | | | | | | | | |
| **Summer (April)** | **X Without (control)** | 3.13 | 0.50 | 3.11 | 3.28 | 0.51 | 2.95 | 47.2 | 53.4 |
| **Summer (April)** | **X Potassium-F at 3 ml/L** | 4.43 | 0.75 | 3.73 | 4.31 | 0.69 | 3.78 | 52.8 | 69.0 |
| **Summer (April)** | **X Raizante at 2 ml/L** | 4.55 | 0.80 | 3.71 | 4.51 | 0.72 | 3.79 | 54.1 | 72.6 |
| **Late summer (June)** | **X Without (control)** | 3.03 | 0.40 | 2.95 | 3.02 | 0.42 | 2.51 | 41.0 | 47.9 |
| **Late summer (June)** | **X Potassium-F at 3 ml/L** | 4.01 | 0.57 | 3.40 | 3.93 | 0.52 | 3.61 | 50.3 | 51.5 |
| **Late summer (June)** | **X Raizante at 2 ml/L** | 4.21 | 0.58 | 3.40 | 3.89 | 0.55 | 3.63 | 46.3 | 53.0 |
| **LSD at 0.05 level** | | **0.13** | **0.04** | **0.07** | **0.18** | **0.06** | **0.04** | **1.89** | **5.54** |

@Potassium-F containing 0.0% N, 10% $P_2O_5$ and 30% $K_2O$,

*Raizante containing 2.4 % N, 1.25 P and 1.5% K in chelated form + 20% polysaccharides, 3.5% free amino acids,

**Table 5.** Effect of transplanting date, foliar feeding and their interactions on eggplant C.V. Black Beauty fruit yield during 2016 and 2017 seasons

| Treatments | | | 2016 season | | 2017 season | |
|---|---|---|---|---|---|---|
| **Transplanting date** | | **Foliar feeding** | **Total yield (ton/fed.)** | **Relative increase in yield (%)** | **Total yield (ton/fed.)** | **Relative increase in yield** |
| ***The main effect of transplanting date*** | | | | | | |
| **Summer (1st April)** | | - | 21.1 | 18.4 | 20.0 | 11.3 |
| **Late summer (1st June)** | | - | 17.8 | 00.0 | 18.0 | 00.0 |
| **LSD at 0.05 level** | | | **1.38** | **---** | **0.40** | **--** |
| ***The main effect of foliar feeding*** | | | | | | |
| - | | **Without (control)** | 17.8 | 00.0 | 17.2 | 00.0 |
| - | | **@Potassium-F at 3ml/L** | 19.3 | 08.8 | 19.5 | 13.1 |
| - | | ***Raizante at 2 ml/L** | 21.3 | 20.1 | 20.3 | 17.9 |
| **LSD at 0.05 level** | | | **0.63** | **--** | **0.32** | **--** |
| ***Transplanting date X*** | | ***foliar feeding (Effect of interaction)*** | | | | |
| **Summer (April)** | **X** | **Without (control)** | 18.9 | 13.8 | 18.1 | 11.2 |
| **Summer (April)** | **X** | **Potassium-F at 3 ml/L** | 21.3 | 28.2 | 20.3 | 24.7 |
| **Summer (April)** | **X** | **Raizante at 2 ml/L** | 23.2 | 39.3 | 21.6 | 32.3 |
| **Late summer (June)** | **X** | **Without (control)** | 16.6 | 00.0 | 16.3 | 00.0 |
| **Late summer (June)** | **X** | **Potassium-F at 3 ml/L** | 17.4 | 04.4 | 18.6 | 14.1 |
| **Late summer (June)** | **X** | **Raizante at 2 ml/L** | 19.5 | 17.4 | 19.0 | 16.8 |
| **LSD at 0.05 level** | | | **0.87** | **--** | **0.44** | **--** |

@Potassium-F containing 0.0% N, 10% $P_2O_5$ and 30% $K_2O$,

*Raizante containing 2.4 % N, 1.25 P and 1.5% K in chelated form + 20% polysaccharides, 3.5% free amino acids,

**Table 6.** Effect of transplanting date, foliar feeding and their interactions on fruit firmness and total soluble solids as well as titratable acidity in fruit tissues at three fruit ripening stages of eggplant C.V. Black Beauty during 2016 and 2017 seasons

| Treatments | Fruit firmness (kg/cm$^2$) | | | Total soluble solids(%) | | | Titratable acidity(%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Early stage | Turning stage | Maturity stage | Early stage | Turning stage | Maturity stage | Early stage | Turning stage | Maturity stage |
| | **2016 season** | | | | | | | | |
| ***The main effect of transplanting date*** | | | | | | | | | |
| Summer (1st April) | 3.39 | 3.50 | 4.11 | 6.09 | 5.56 | 4.78 | 0.18 | 0.17 | 0.22 |
| Late summer (1st June) | 3.75 | 4.25 | 4.44 | 5.02 | 4.82 | 4.33 | 0.18 | 0.18 | 0.23 |
| **LSD at 0.05 level** | **NS** | **0.22** | **NS** | **0.09** | **0.17** | **0.30** | **NS** | **0.01** | **NS** |
| ***The main effect of foliar feeding*** | | | | | | | | | |
| Without (control) | 3.75 | 4.00 | 4.42 | 4.87 | 4.50 | 4.33 | 0.18 | 0.18 | 0.23 |
| @Potassium-F at 3 ml/L | 3.58 | 3.79 | 4.21 | 5.83 | 5.50 | 4.53 | 0.16 | 0.17 | 0.23 |
| *Raizante at 2 ml/L | 3.38 | 3.83 | 4.21 | 5.97 | 5.57 | 4.80 | 0.17 | 0.18 | 0.23 |
| **LSD at 0.05 level** | **0.21** | **0.17** | **NS** | **0.32** | **0.23** | **0.11** | **0.01** | **NS** | **NS** |
| ***Transplanting date X foliar feeding (Effect of interaction)*** | | | | | | | | | |
| April X Without | 3.58 | 3.67 | 4.33 | 5.13 | 4.67 | 4.47 | 0.18 | 0.18 | 0.22 |
| April X Potassium-F | 3.33 | 3.42 | 4.00 | 6.47 | 6.00 | 4.87 | 0.15 | 0.16 | 0.23 |
| April X Raizante | 3.25 | 3.42 | 4.00 | 6.67 | 6.00 | 5.00 | 0.17 | 0.17 | 0.22 |
| June X Without | 3.92 | 4.33 | 4.50 | 4.60 | 4.33 | 4.20 | 0.18 | 0.18 | 0.23 |
| June X Potassium-F | 3.83 | 4.17 | 4.42 | 5.20 | 5.13 | 4.20 | 0.17 | 0.17 | 0.22 |
| June X Raizante | 3.50 | 4.25 | 4.42 | 5.27 | 5.00 | 4.60 | 0.18 | 0.18 | 0.23 |
| **LSD at 0.05 level** | **NS** | **NS** | **NS** | **0.45** | **0.33** | **0.15** | **0.02** | **NS** | **NS** |
| | ***2017 season*** | | | | | | | | |
| ***The main effect of transplanting date*** | | | | | | | | | |
| Summer (1st April) | 3.36 | 3.47 | 4.25 | 6.02 | 5.60 | 4.84 | 0.17 | 0.17 | 0.21 |
| Late summer (1st June) | 3.55 | 4.24 | 4.50 | 5.68 | 4.84 | 4.29 | 0.18 | 0.18 | 0.24 |
| **LSD at 0.05 level** | **0.13** | **0.14** | **NS** | **0.13** | **0.39** | **0.13** | **NS** | **NS** | **0.02** |
| ***The main effect of foliar feeding*** | | | | | | | | | |
| Without (control) | 3.58 | 3.96 | 4.46 | 5.10 | 4.80 | 4.30 | 0.19 | 0.18 | 0.23 |
| @Potassium-F at 3 ml/L | 3.42 | 3.87 | 4.33 | 6.30 | 5.37 | 4.57 | 0.17 | 0.17 | 0.22 |
| *Raizante at 2 ml/L | 3.28 | 3.75 | 4.33 | 6.15 | 5.50 | 4.83 | 0.18 | 0.17 | 0.23 |
| **LSD at 0.05 level** | **0.11** | **0.13** | **NS** | **0.34** | **0.16** | **0.22** | **0.01** | **NS** | **NS** |
| ***Transplanting date X foliar feeding (Effect of interaction)*** | | | | | | | | | |
| April X Without | 3.50 | 3.58 | 4.25 | 5.20 | 5.07 | 4.40 | 0.18 | 0.17 | 0.21 |
| April X Potassium-F | 3.33 | 3.50 | 4.25 | 6.60 | 5.73 | 4.87 | 0.16 | 0.16 | 0.22 |
| April X Raizante | 3.25 | 3.33 | 4.25 | 6.27 | 6.00 | 5.27 | 0.17 | 0.17 | 0.21 |
| June X Without | 3.67 | 4.33 | 4.67 | 5.00 | 4.53 | 4.20 | 0.19 | 0.18 | 0.23 |
| June X Potassium-F | 3.50 | 4.23 | 4.42 | 6.00 | 5.00 | 4.27 | 0.18 | 0.18 | 0.24 |
| June X Raizante | 3.50 | 4.17 | 4.42 | 6.00 | 5.00 | 4.40 | 0.18 | 0.18 | 0.24 |
| **LSD at 0.05 level** | **NS** | **NS** | **NS** | **NS** | **0.22** | **0.30** | **NS** | **0.01** | **NS** |

@Potassium-F containing 0.0% N, 10% $P_2O_5$ and 30% $K_2O$,

*Raizante containing 2.4 % N, 1.25 P and 1.5% K in chelated form + 20% polysaccharides, 3.5% free amino acids,

**Table 7.** Effect of transplanting date, foliar feeding and their interactions on total phenols, total sugars and reducing sugars in fruit tissues of eggplant C.V. Black Beauty at three fruit ripening stages during 2016 and 2017 seasons

| Treatments | Total phenols ( mg/g.dw) | | | Total sugars (g/ 100g.dw) | | | Reducing sugars (g/ 100g.dw) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Early stage | Turning stage | Maturity stage | Early stage | Turning stage | Maturity stage | Early stage | Turning stage | Maturity stage |
| | **2016 season** | | | | | | | | |
| ***The main effect of transplanting date*** | | | | | | | | | |
| Summer (1st April) | 5.37 | 6.69 | 7.81 | 2.76 | 2.65 | 2.54 | 0.19 | 0.20 | 0.24 |
| Late summer (1st June) | 6.59 | 7.09 | 8.16 | 2.53 | 2.50 | 2.43 | 0.21 | 0.21 | 0.25 |
| **LSD at 0.05 level** | **0.06** | **0.11** | **0.14** | **0.07** | **0.01** | **0.01** | **0.01** | **NS** | **0.01** |
| ***The main effect of foliar feeding*** | | | | | | | | | |
| Without (control) | 6.33 | 7.39 | 8.39 | 2.62 | 2.54 | 2.43 | 0.21 | 0.22 | 0.25 |
| @Potassium-F at 3 ml/L | 5.82 | 6.64 | 7.81 | 2.65 | 2.58 | 2.51 | 0.19 | 0.20 | 0.24 |
| *Raizante at 2 ml/L | 5.78 | 6.63 | 7.76 | 2.67 | 2.59 | 2.53 | 0.19 | 0.20 | 0.24 |
| **LSD at 0.05 level** | **0.09** | **0.06** | **0.06** | **0.02** | **0.02** | **0.01** | **0.01** | **0.01** | **NS** |
| ***Transplanting date X foliar feeding (Effect of interaction)*** | | | | | | | | | |
| April X Without | 5.52 | 7.24 | 8.16 | 2.72 | 2.60 | 2.50 | 0.21 | 0.21 | 0.24 |
| April X Potassium-F | 5.33 | 6.43 | 7.65 | 2.78 | 2.56 | 2.56 | 0.18 | 0.19 | 0.24 |
| April X Raizante | 5.27 | 6.40 | 7.62 | 2.78 | 2.58 | 2.58 | 0.18 | 0.19 | 0.24 |
| June X Without | 7.14 | 7.55 | 8.61 | 2.52 | 2.35 | 2.35 | 0.21 | 0.22 | 0.25 |
| June X Potassium-F | 6.32 | 6.92 | 7.97 | 2.52 | 2.46 | 2.46 | 0.21 | 0.21 | 0.24 |
| June X Raizante | 6.30 | 6.86 | 7.90 | 2.55 | 2.48 | 2.48 | 0.21 | 0.20 | 0.24 |
| **LSD at 0.05 level** | **0.13** | **0.08** | **0.08** | **0.03** | **0.03** | **0.02** | **0.02** | **NS** | **NS** |
| | **2017 season** | | | | | | | | |
| ***The main effect of transplanting date*** | | | | | | | | | |
| Summer (1st April) | 5.43 | 7.20 | 7.98 | 2.72 | 2.62 | 2.53 | 0.19 | 0.20 | 0.24 |
| Late summer (1st June) | 6.56 | 7.36 | 9.02 | 2.53 | 2.48 | 2.40 | 0.21 | 0.21 | 0.25 |
| **LSD at 0.05 level** | **0.05** | **0.08** | **0.06** | **0.09** | **0.04** | **0.05** | **0.01** | **NS** | **NS** |
| ***The main effect of foliar feeding*** | | | | | | | | | |
| Without (control) | 6.27 | 7.50 | 8.77 | 2.56 | 2.53 | 2.41 | 0.22 | 0.22 | 0.26 |
| @Potassium-F at 3 ml/L | 5.89 | 7.22 | 8.40 | 2.66 | 2.56 | 2.47 | 0.20 | 0.20 | 0.25 |
| *Raizante at 2 ml/L | 5.82 | 7.12 | 8.33 | 2.66 | 2.58 | 2.51 | 0.19 | 0.19 | 0.24 |
| **LSD at 0.05 level** | **0.05** | **0.04** | **0.07** | **0.03** | **0.01** | **0.01** | **0.01** | **0.01** | **0.01** |
| ***Transplanting date X foliar feeding (Effect of interaction)*** | | | | | | | | | |
| April X Without | 5.72 | 7.47 | 8.42 | 2.61 | 2.59 | 2.47 | 0.20 | 0.22 | 0.25 |
| April X Potassium-F | 5.34 | 7.08 | 7.80 | 2.77 | 2.63 | 2.53 | 0.18 | 0.19 | 0.25 |
| April X Raizante | 5.22 | 7.03 | 7.71 | 2.78 | 2.64 | 2.58 | 0.18 | 0.19 | 0.23 |
| June X Without | 6.82 | 7.53 | 9.11 | 2.51 | 2.46 | 2.35 | 0.23 | 0.22 | 0.26 |
| June X Potassium-F | 6.43 | 7.35 | 9.00 | 2.55 | 2.48 | 2.41 | 0.21 | 0.21 | 0.25 |
| June X Raizante | 6.42 | 7.20 | 8.95 | 2.54 | 2.51 | 2.44 | 0.20 | 0.19 | 0.25 |
| **LSD at 0.05 level** | **NS** | **0.06** | **0.10** | **0.04** | **NS** | **NS** | **NS** | **NS** | **NS** |

@Potassium-F containing 0.0% N, 10% $P_2O_5$ and 30% $K_2O$,

*Raizante containing 2.4 % N, 1.25 P and 1.5% K in chelated form + 20% polysaccharides, 3.5% free amino acids,

**Table 8.** Effect of transplanting date, foliar feeding and their interactions on potassium percentage in fruit at three fruit ripening stages of eggplant C.V. Black Beauty during 2016 and 2017 seasons

| Treatments | Potassium (%) | | | | | |
|---|---|---|---|---|---|---|
| | **Early stage** | **Turning stage** | **Maturity stage** | **Early stage** | **Turning stage** | **Maturity stage** |
| | **2016 season** | | | **2017 season** | | |
| ***The main effect of transplanting date*** | | | | | | |
| Summer (1st April) | 4.25 | 4.14 | 3.71 | 3.92 | 4.09 | 3.28 |
| Late summer (1st June) | 4.11 | 3.98 | 3.09 | 3.89 | 3.91 | 2.77 |
| **LSD at 0.05 level** | **N.S** | **0.08** | **0.46** | **N.S** | **0.02** | **2.27** |
| ***The main effect of foliar feeding*** | | | | | | |
| Without (control) | 3.33 | 3.3 | 3.29 | 3.23 | 3.25 | 2.59 |
| @Potassium-F at 3 ml/L | 4.51 | 4.43 | 3.33 | 4.50 | 4.40 | 3.12 |
| *Raizante at 2 ml/L | 4.68 | 4.46 | 3.58 | 3.98 | 4.37 | 3.36 |
| **LSD at 0.05 level** | **0.06** | **0.04** | **0.19** | **1.06** | **0.07** | **0.13** |
| ***Transplanting date X foliar feeding (Effect of interaction)*** | | | | | | |
| April X Without | 3.43 | 3.45 | 3.43 | 3.54 | 3.41 | 2.92 |
| April X Potassium-F | 4.5 | 4.45 | 3.64 | 4.60 | 4.41 | 3.41 |
| April X Raizante | 4.81 | 4.51 | 4.08 | 3.62 | 4.47 | 3.41 |
| June X Without | 3.24 | 3.14 | 3.15 | 2.93 | 3.09 | 2.26 |
| June X Potassium-F | 4.53 | 4.4 | 3.04 | 4.40 | 4.39 | 2.83 |
| June X Raizante | 4.56 | 4.41 | 3.08 | 4.34 | 4.26 | 3.2 |
| **LSD at 0.05 level** | **0.09** | **0.05** | **0.27** | **1.46** | **0.1** | **0.18** |

@Potassium-F containing 0.0% N, 10% $P_2O_5$ and 30% $K_2O$,

*Raizante containing 2.4 % N, 1.25 P and 1.5% K in chelated form + 20% polysaccharides, 3.5% free amino acids**,**