ANOVA table – **(Tukey’s HSD)**

Table 2. Yield of grafted and self-rooted plants

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Total yield | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 45945421.651a | 19 | 2418180.087 | 142.910 | .000 |
| Intercept | 507617872.068 | 1 | 507617872.068 | 29999.220 | .000 |
| block | 514.111 | 1 | 514.111 | .030 | .864 |
| treatment | 45944907.540 | 18 | 2552494.863 | 150.847 | .000 |
| Error | 304578.642 | 18 | 16921.036 |  |  |
| Total | 553867872.362 | 38 |  |  |  |
| Corrected Total | 46250000.293 | 37 |  |  |  |
| a. R Squared = .993 (Adjusted R Squared = .986) | | | | | |

Anova tables – Field survival and yield components **(Dunnett t-test)**

**Fig. 1.** Field survival percentage of grafted and self-rooted plants following the first drought period from planting.

Grafted TRF-1 in comparison with self-rooted TRF-1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Field Survival | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 199.449a | 5 | 39.890 | 5.464 | .062 |
| Intercept | 63674.016 | 1 | 63674.016 | 8721.142 | .000 |
| Block | 9.920 | 1 | 9.920 | 1.359 | .309 |
| Treatment | 189.528 | 4 | 47.382 | 6.490 | .049 |
| Error | 29.204 | 4 | 7.301 |  |  |
| Total | 63902.669 | 10 |  |  |  |
| Corrected Total | 228.653 | 9 |  |  |  |
| a. R Squared = .872 (Adjusted R Squared = .713) | | | | | |

Grafted TRF-2 in comparison with self-rooted TRF-2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Field Survival | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 267.224a | 5 | 53.445 | 44.508 | .001 |
| Intercept | 54957.017 | 1 | 54957.017 | 45767.384 | .000 |
| Block | 45.497 | 1 | 45.497 | 37.889 | .004 |
| Treatment | 221.728 | 4 | 55.432 | 46.163 | .001 |
| Error | 4.803 | 4 | 1.201 |  |  |
| Total | 55229.044 | 10 |  |  |  |
| Corrected Total | 272.028 | 9 |  |  |  |
| a. R Squared = .982 (Adjusted R Squared = .960) | | | | | |

Grafted UPASI-28 in comparison with self-rooted UPASI-28

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Field Survival | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 130.099a | 5 | 26.020 | 2.847 | .166 |
| Intercept | 50059.870 | 1 | 50059.870 | 5476.507 | .000 |
| Block | 12.388 | 1 | 12.388 | 1.355 | .309 |
| Treatment | 117.712 | 4 | 29.428 | 3.219 | .142 |
| Error | 36.563 | 4 | 9.141 |  |  |
| Total | 50226.533 | 10 |  |  |  |
| Corrected Total | 166.663 | 9 |  |  |  |
| a. R Squared = .781 (Adjusted R Squared = .506) | | | | | |

**Fig. 2.** Mean number of plucking points per unit area in grafted and self-rooted plants.

Grafted TRF-1 in comparison with self-rooted TRF-1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Mean number of plucking points | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 57.452a | 5 | 11.490 | 20.926 | .006 |
| Intercept | 7971.588 | 1 | 7971.588 | 14517.948 | .000 |
| Block | .207 | 1 | .207 | .378 | .572 |
| Treatment | 57.244 | 4 | 14.311 | 26.064 | .004 |
| Error | 2.196 | 4 | .549 |  |  |
| Total | 8031.236 | 10 |  |  |  |
| Corrected Total | 59.648 | 9 |  |  |  |
| a. R Squared = .963 (Adjusted R Squared = .917) | | | | | |

Grafted TRF-2 in comparison with self-rooted TRF-2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Mean number of plucking points | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 71.729a | 5 | 14.346 | 169.103 | .000 |
| Intercept | 8098.578 | 1 | 8098.578 | 95462.694 | .000 |
| Block | .864 | 1 | .864 | 10.189 | .033 |
| Treatment | 70.865 | 4 | 17.716 | 208.831 | .000 |
| Error | .339 | 4 | .085 |  |  |
| Total | 8170.646 | 10 |  |  |  |
| Corrected Total | 72.069 | 9 |  |  |  |
| a. R Squared = .995 (Adjusted R Squared = .989) | | | | | |

Grafted UPASI-28 in comparison with self-rooted UPASI-28

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Mean number of plucking points | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 64.695a | 5 | 12.939 | 12.656 | .015 |
| Intercept | 15530.693 | 1 | 15530.693 | 15190.576 | .000 |
| Block | .114 | 1 | .114 | .112 | .755 |
| Treatment | 64.581 | 4 | 16.145 | 15.792 | .010 |
| Error | 4.090 | 4 | 1.022 |  |  |
| Total | 15599.478 | 10 |  |  |  |
| Corrected Total | 68.785 | 9 |  |  |  |
| a. R Squared = .941 (Adjusted R Squared = .866) | | | | | |

**Fig. 5.** Mean weight of crop shoots of grafted and self-rooted plants.

Grafted TRF-1 in comparison with self-rooted TRF-1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: crop shoot weight-mean | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | .085a | 5 | .017 | 341.640 | .000 |
| Intercept | 33.233 | 1 | 33.233 | 664665.800 | .000 |
| Block | .000 | 1 | .000 | 5.000 | .089 |
| Treatment | .085 | 4 | .021 | 425.800 | .000 |
| Error | .000 | 4 | 5.000E-005 |  |  |
| Total | 33.319 | 10 |  |  |  |
| Corrected Total | .086 | 9 |  |  |  |
| a. R Squared = .998 (Adjusted R Squared = .995) | | | | | |

Grafted TRF-2 in comparison with self-rooted TRF-2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: crop shoot weight-mean | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | .084a | 5 | .017 | 34.286 | .002 |
| Intercept | 19.377 | 1 | 19.377 | 39544.163 | .000 |
| Block | .001 | 1 | .001 | 1.306 | .317 |
| Treatment | .083 | 4 | .021 | 42.531 | .002 |
| Error | .002 | 4 | .000 |  |  |
| Total | 19.463 | 10 |  |  |  |
| Corrected Total | .086 | 9 |  |  |  |
| a. R Squared = .977 (Adjusted R Squared = .949) | | | | | |

Grafted UPASI-28 in comparison with self-rooted UPASI-28

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: crop shoot weight-mean | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | .074a | 5 | .015 | 24.140 | .004 |
| Intercept | 42.808 | 1 | 42.808 | 69605.870 | .000 |
| Block | .002 | 1 | .002 | 2.748 | .173 |
| Treatment | .073 | 4 | .018 | 29.488 | .003 |
| Error | .002 | 4 | .001 |  |  |
| Total | 42.884 | 10 |  |  |  |
| Corrected Total | .077 | 9 |  |  |  |
| a. R Squared = .968 (Adjusted R Squared = .928) | | | | | |

**Table 4.** Canopy cover and branching in grafted and self-rooted plants

Number of second order branches in grafted TRF-1 in comparison with self-rooted TRF-1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Number of secondary branches | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 65.904a | 5 | 13.181 | 14.236 | .012 |
| Intercept | 6018.681 | 1 | 6018.681 | 6500.428 | .000 |
| Block | 2.181 | 1 | 2.181 | 2.355 | .200 |
| Treatment | 63.724 | 4 | 15.931 | 17.206 | .009 |
| Error | 3.704 | 4 | .926 |  |  |
| Total | 6088.289 | 10 |  |  |  |
| Corrected Total | 69.608 | 9 |  |  |  |
| a. R Squared = .947 (Adjusted R Squared = .880) | | | | | |

Canopy spread in grafted TRF-1 in comparison with self-rooted TRF-1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Canopy spread | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 202.957a | 5 | 40.591 | 401.438 | .000 |
| Intercept | 73150.388 | 1 | 73150.388 | 723437.550 | .000 |
| Block | 6.922 | 1 | 6.922 | 68.459 | .001 |
| Treatment | 196.035 | 4 | 49.009 | 484.683 | .000 |
| Error | .404 | 4 | .101 |  |  |
| Total | 73353.749 | 10 |  |  |  |
| Corrected Total | 203.362 | 9 |  |  |  |
| a. R Squared = .998 (Adjusted R Squared = .996) | | | | | |

Number of Second order branches in Grafted TRF-2 in comparison with self-rooted TRF-2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Number of secondary branches | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 66.200a | 5 | 13.240 | 5.634 | .059 |
| Intercept | 3312.400 | 1 | 3312.400 | 1409.532 | .000 |
| Block | 3.600 | 1 | 3.600 | 1.532 | .284 |
| Treatment | 62.600 | 4 | 15.650 | 6.660 | .047 |
| Error | 9.400 | 4 | 2.350 |  |  |
| Total | 3388.000 | 10 |  |  |  |
| Corrected Total | 75.600 | 9 |  |  |  |
| a. R Squared = .876 (Adjusted R Squared = .720) | | | | | |

Canopy spread in Grafted TRF-2 in comparison with self-rooted TRF-2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Canopy spread | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 372.336a | 5 | 74.467 | 25.995 | .004 |
| Intercept | 40913.933 | 1 | 40913.933 | 14282.051 | .000 |
| Block | .044 | 1 | .044 | .015 | .908 |
| Treatment | 372.292 | 4 | 93.073 | 32.490 | .003 |
| Error | 11.459 | 4 | 2.865 |  |  |
| Total | 41297.728 | 10 |  |  |  |
| Corrected Total | 383.795 | 9 |  |  |  |
| a. R Squared = .970 (Adjusted R Squared = .933) | | | | | |

Number of secondary branches in grafted UPASI-28 in comparison with self-rooted UPASI-28

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Number of secondary branches | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 109.200a | 5 | 21.840 | 13.650 | .013 |
| Intercept | 7398.400 | 1 | 7398.400 | 4624.000 | .000 |
| Block | 1.600 | 1 | 1.600 | 1.000 | .374 |
| Treatment | 107.600 | 4 | 26.900 | 16.813 | .009 |
| Error | 6.400 | 4 | 1.600 |  |  |
| Total | 7514.000 | 10 |  |  |  |
| Corrected Total | 115.600 | 9 |  |  |  |
| a. R Squared = .945 (Adjusted R Squared = .875) | | | | | |

Canopy spread in grafted UPASI-28 in comparison with self-rooted UPASI-28

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tests of Between-Subjects Effects** | | | | | |
| Dependent Variable: Canopy spread | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 326.191a | 5 | 65.238 | 539.984 | .000 |
| Intercept | 84331.162 | 1 | 84331.162 | 698018.973 | .000 |
| Block | 1.102 | 1 | 1.102 | 9.123 | .039 |
| Treatment | 325.089 | 4 | 81.272 | 672.700 | .000 |
| Error | .483 | 4 | .121 |  |  |
| Total | 84657.837 | 10 |  |  |  |
| Corrected Total | 326.674 | 9 |  |  |  |
| a. R Squared = .999 (Adjusted R Squared = .997) | | | | | |