Statistics summary table

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| --- | --- | --- | --- | --- | --- |
| **Full Data** |  |  |  |  |  |
| **Method** | **N = 28** | **Mean** | **Median** | **SD** | **Range** |
| Vcmax |  |  |  |  |  |
| DAT | 28 | 32.9 | 28.3 | 17.6 | 9.8 – 75.0 |
| Traditional | 28 | 34.0 | 26.9 | 18.0 | 11.0 – 82.4 |
| Jmax |  |  |  |  |  |
| DAT | 28 | 49.4 | 48.0 | 22.4 | 9.5 – 102.1 |
| Traditional | 28 | 59.7 | 52.0 | 25.7 | 24.0 – 114.6 |
| **Without Overshoot** |  |  |  |  |  |
| **Method** | **N = 20** | **Mean** | **Median** | **SD** | **Range** |
| Vcmax |  |  |  |  |  |
| DAT | 20 | 31.0 | 26.3 | 16.7 | 9.8 – 75.0 |
| Traditional | 20 | 31.4 | 26.0 | 14.5 | 11.0 – 63.4 |
| Jmax |  |  |  |  |  |
| DAT | 20 | 52.8 | 48.0 | 20.6 | 23.6 – 102.0 |
| Traditional | 20 | 57.7 | 52.0 | 21.6 | 24.0 – 106.0 |

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|  |  |  |  |  |
| **Method** | **V** | **P (>|V|)** | **Cohen’s d** | **CI** |
| Full Data |  |  |  |  |
| Vcmax | 108 | 0.0298 \* | -0.063 | -2.87 – -0.17 |
| Jmax | 15 | < 0.0001\*\*\* | -0.412 | -13.03 – -4.58 |
| No Overshoot |  |  |  |  |
| Vcmax | 58 | 0.083 . | -0.029 | -2.43 – 0.28 |
| Jmax | 162 | 0.314 | -0.227 | -14.75 – 4.52 |

**FULL DATA -----------------------------------------**

Levene’s: Data variances are not significantly different from each other, so we have met the assumption of equal variances.

Shapiro-wilk: data vary from the normal distribution. Proceed with the Wilcoxon signed rank test.

DAT were grouped by unique leaf (means were taken for leaf repetitions; n = 5 total) to get equal number of DAT and traditional curves (n = 28).

**Vcmax process**:

Test: Wilcoxon signed rank test: V = 108, p = 0.02983, d = -0.063, CI = -2.87 – -0.17 (note CI does not cross 0, meaning that there is a high chance that the difference in median vcmax estimates is not 0). Power analysis revealed that to get our effect size at an alpha of 0.05 we had a 6.1% power.

**Jmax process**:

Test: Wilcoxon signed rank test: V = 15, p < 0.0001, d = -0.412, CI = -13.03 – -4.58 (note CI does not cross 0, meaning that there is a high chance that the difference in median vcmax estimates is not 0). Power analysis revealed that to get our effect size at an alpha of 0.05 we had a 55.6% power.

**No-overshoot “nd” DATA ----------------------------------------------------------------**

11 DAT curves with overshoot were deleted, and then DAT data were grouped by leaf (n = 20).

8 Traditional curves were deleted to match the identity of the included DAT curves (n = 20).

**Vcmax process**:

Test: Wilcoxon signed rank test: V = 58, p = 0.083, d = -0.029, CI = -2.43 – 0.28 (note CI crosses 0, which means there is a high chance that the difference in median vcmax estimates is in fact 0). Power analysis revealed that to get our effect size at an alpha of 0.05 we had a 5.2% power.

**Jmax process**:

Test: Wilcoxon signed rank test: W = 162, p = 0.314, d = -0.227, CI = -14.75 – 4.52 (note CI crosses 0, meaning that there is a high chance that the difference in median vcmax estimates is in fact 0). Power analysis revealed that to get our effect size at an alpha of 0.05 we had a 16.1% power.

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**Comparing MG to Photo:**

Vcmax: compared ANOVA models. Most support for the intercept model (AICc = 1041.1, AICcWt = 0.53, LL = -518.5). More IMPORTANT: Kruskal-Wallis test of vcmax by method: χ2 = 0.0004, DF = 1, p-value = 0.9836. SHOULD CHANGE TO WILCOXON

Jmax: compared ANOVA models. Some support for ‘method’ model (AICc = 1114.9, AICcWt = 0.58, LL = -554.3). More IMPORTANT: Kruskal-Wallis test of jmax by method: χ2 = 2.72, DF = 1, p-value = 0.0991. Still not significant. SHOULD CHANGE TO WILCOXON.

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**Comparing Photo with TPU to Photo without TPU:**

Vcmax: DAT v Trad not significant (V = 143, p-value = 0.1782, 95% CI = -1.57 – 0.44). CROSSES 0. (Wilcox test).

Jmax: DAT v Trad HIGHLY significant (V = 21, p-value = p < 0.00001, CI = -7.56 – -3.42). (Wilcox test)

POOLED data:

Vcmax: compared ANOVA models. Most support for intercept model (AICc = 1064.7, AICcWt = 0.53, LL = -530.3).