**Table S1.** T-test analysis of total seedlings emergence in the two years considered in this study.

|  |  |  |
| --- | --- | --- |
|  | Group 1 | Group 2 |
|  | 2019 | 2021 |
| N | 16 | 16 |
| mean | 4.5 | 3.38 |
| mean (1)-mean (2) | 1.13 |  |
| lower level (95) | -2.7 |  |
| upper level (95) | 4.95 |  |
| T | 0.61 |  |
| p- value | 0.5499 |  |

**Table S2.** Analysis of variance (ANOVA) of *Tithonia tubaeformis* seedlings emergence in the field covered by different amount of sugarcane residues.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **N** | **R²** | **R² adj** | **CV** |
| Germination | 32 | 0.61 | 0.25 | 94.5 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Source of variation** | **Sum of squares** | **Degrees of freedom** | **Mean square** | **F value** | **P value** |
| Model | 617.88 | 15 | 41.19 | 3.02 | 0.017 |
| block | 4.38 | 3 | 1.46 | 0.11 | 0.95 |
| amount of residue | 548.38 | 3 | 182.79 | 13.42 | 0.0001 |
| block X amount of residue interaction | 65.13 | 9 | 7.24 | 0.53 | 0.83 |
| Error | 218 | 16 | 13.63 |  |  |
| Total | 835.88 | 31 |  |  |  |

**Table S3.** T-test analysis of total seedlings biomass in the two years considered in this study

|  |  |  |
| --- | --- | --- |
|  | Group 1 | Group 2 |
|  | 2019 | 2021 |
| N | 16 | 16 |
| mean | 9.74 | 16.24 |
| mean (1)-mean (2) | -6.5 |  |
| lower level (95) | -16.64 |  |
| upper level (95) | 3.64 |  |
| T | -1.3 |  |
| p- value | 0.20 |  |

**Table S4.** Analysis of variance (ANOVA) of *Tithonia tubaeformis* seedlings biomass in the field covered by different amount of sugarcane residues.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **N** | **R²** | **R² adj** | **CV** |
| Germination | 48 | 0.81 | 0.78 | 43.41 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Source of variation** | **Sum of squares** | **Degrees of freedom** | **Mean square** | **F value** | **P value** |
| Model | 3843.6 | 15 | 256.24 | 1.7 | 0.15 |
| Block | 51.21 | 3 | 17.07 | 0.11 | 0.95 |
| Amount of residue | 1724.51 | 3 | 574.84 | 3.82 | 0.03 |
| Block X amount of residue interaction | 2067.88 | 9 | 229.76 | 1.53 | 0.22 |
| Error | 2409.74 | 16 | 150.61 |  |  |
| Total | 6253.34 | 31 |  |  |  |