**Supplementary files 1.** Study area at the Selvíria, Mato Grosso do Sul, Brazil (20o22′S, 51o22′W, altitude of 335 m above sea level).



**Supplementary files 2.** Rainfall, and maximum, average, and minimum temperature obtained from the weather station located on the Education and Research Farm of FE / UNESP during wheat cultivation in the period of May to September 2014 (A) and May to September 2015 (B). Selvíria – MS, Brazil

|  |
| --- |
| A. |
| B. |

**Supplementary files 3.** *F*-test values for N, P, K, Ca, Mg and S accumulation (kg ha-1) in the wheat straw and grains as a function of doses and sources of N, with or without inoculation of *Azospirillum brasilense.* Selvíria – MS, Brazil

|  |
| --- |
| ------------------------------------------------------------------------------------------ (Wheat straw) ------------------------------------------------------------------------------------------ |
|  | N | P | K | Ca | Mg | S |
|  | 2014 | 2015 | 2014 | 2015 | 2014 | 2015 | 2014 | 2015 | 2014 | 2015 | 2014 | 2015 |
| *F*-test |  |  |  |  |  |  |  |  |  |  |  |  |
| D | 4.269\*\* | 17.652\*\* | 4.605\*\* | 0.664ns | 4.424\*\* | 5.396\*\* | 5.668\*\* | 7.873\*\* | 8.220\*\* | 7.939\*\* | 3.741\* | 9.563\*\* |
| S | 0.010ns | 1.855ns | 0.019ns | 0.377ns | 0.425ns | 0.222ns | 0.796ns | 0.951ns | 0.113ns | 0.464ns | 0.233ns | 0.084ns |
| I | 9.062\*\* | 2.878ns | 8.315\*\* | 0.891ns | 1.839ns | 0.115ns | 0.288ns | 16.944\*\* | 4.844\* | 2.142ns | 27.595\*\* | 2.267ns |
| DxS | 1.443ns | 0.348ns | 0.404ns | 0.513ns | 0.711ns | 0.385ns | 0.406ns | 0.893ns | 0.374ns | 0.553ns | 0.512ns | 0.995ns |
| DxI | 5.303\* | 7.982\*\* | 5.428\*\* | 0.669ns | 0.990ns | 0.653ns | 1.181ns | 6.440\* | 0.853ns | 0.613ns | 8.889\*\* | 6.649\*\* |
| SxI | 0.190ns | 0.002ns | 0.039ns | 0.040ns | 0.371ns | 0.342ns | 0.172ns | 0.011ns | 0.242ns | 0.375ns | 1.006ns | 0.232ns |
| DxSxI | 0.156ns | 3.149ns | 0.559ns | 1.088ns | 0.227ns | 0.773ns | 0.559ns | 0.814ns | 0.757ns | 2.587ns | 0.211ns | 1.096ns |
| ------------------------------------------------------------------------------------------ (Wheat grains) ------------------------------------------------------------------------------------------ |
|  | N | P | K | Ca | Mg | S |
|  | 2014 | 2015 | 2014 | 2015 | 2014 | 2015 | 2014 | 2015 | 2014 | 2015 | 2014 | 2015 |
| *F*-test |  |  |  |  |  |  |  |  |  |  |  |  |
| D | 1.153ns | 14.819\*\* | 1.430ns | 8.240\*\* | 0.938ns | 1.345ns | 1.131ns | 5.153\*\* | 0.429ns | 9.399\*\* | 0.716ns | 6.689\*\* |
| S | 0.003ns | 0.047ns | 0.130ns | 0.083ns | 0.137ns | 0.282ns | 1.530ns | 1.291ns | 1.398ns | 0.011ns | 0.016ns | 0.498ns |
| I | 0.596ns | 0.337ns | 4.594\* | 0.000ns | 1.724ns | 1.828ns | 16.269\*\* | 1.243ns | 10.248\*\* | 0.827ns | 0.067ns | 0.449ns |
| DxS | 1.406ns | 0.220ns | 1.953ns | 0.245ns | 1.767ns | 0.226ns | 1.187ns | 0.252ns | 1.955ns | 0.358ns | 1.338ns | 0.143ns |
| DxI | 1.077ns | 4.430\* | 7.583\*\* | 5.832\*\* | 1.421ns | 0.267ns | 0.502ns | 0.564ns | 0.277ns | 6.806\*\* | 1.085ns | 0.367ns |
| SxI | 0.001ns | 0.557ns | 0.144ns | 1.262ns | 0.140ns | 1.783ns | 0.407ns | 0.003ns | 0.001ns | 0.102ns | 0.088ns | 0.921ns |
| DxSxI | 0.393ns | 0.465ns | 0.571ns | 0.248ns | 0.496ns | 0.174ns | 0.540ns | 0.890ns | 0.695ns | 0.275ns | 0.536ns | 0.425ns |

\*\*, \* and ns: significant at p<0.01, 0.01<p<0.05, and not significant, respectively

**Supplementary files 4.** F test values for wheat grain yield as a function of doses and sources of N, with or without inoculation of *Azospirillum brasilense.* Selvíria – MS, Brazil

|  |  |
| --- | --- |
|  | Grain Yield |
| F test | 2014 | 2015 |
| D | 25.168\*\* | 9.975\*\* |
| S | 0.080ns | 0.018ns |
| I | 1.366ns | 0.270ns |
| DxS | 1.958ns | 1.341ns |
| DxI | 3.228\*\* | 4.772\*\* |
| SxI | 0.072ns | 2.030ns |
| DxSxI | 0.629ns | 1.163ns |

\*\*, \* and ns: significant at p<0.01, 0.01<p<0.05, and not significant, respectively