**Supplementary Tables**

Table S1. Treatments based on the percentage of daily evapotranspiration imposed at 31 days after seeding (DAS), evapotranspiration (ET), midday leaf water potential (LWP), chamber CO2 concentration, mean temperature, and vapor pressure deficits (VPD) during the experimental period for each treatment.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Treatments | Soil moisture | Temperature  | CO2 | VPD | ET |
| % ET | m3 m-3 | °C | µmol mol-1 | kPa | L d-1 |
| 100 | 0.201a | 25.01 | 412.5 | 4.28 | 14.36a |
| 80 | 0.165b | 25.13 | 415.33 | 4.34 | 12.22b |
| 60 | 0.145c | 24.99 | 411.42 | 4.55 | 9.98c |
| 40 | 0.121d | 25.18 | 418.47 | 4.13 | 7.62d |
| 20 | 0.096e | 25.13 | 415.3 | 4.12 | 5.98e |

¶Midday LWP values are the average of four readings measured at 42-59 d after seeding. Values within a column with different letter are significantly different at P<0.05.

Table S2. Description of the spectral reflectance indices examined in this study for soybean where index types are: VI-vegetation index and WI-water index.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Index | Name | Physiological process | Type | Calculation | Reference |
| NDVI | Normalized difference vegetation index | Green area, photosynthetic capacity, leaf N status | VI | [R900-R680]/[R900+R680] | Pask et al., 2012 |
| RNDVI | Red normalized difference vegetation index | Green area, photosynthetic capacity, leaf N status | VI | [R780-R670]/[R780+R670] | Pask et al., 2012 |
| NWI | Normalized water index | Plant water status | WI | [R970-R880]/[R970+R880] | Pask et al., 2012 |
| NWI4 | Normalized water index 4 | Plant water status | WI | [R970-R900]/[R970+R900] | Prasad et al., 2006 |
| NWI5 | Normalized water index 5 | Plant water status | WI | [R960-R940]/[R960+R940] | Elsayed et al., 2011 |
| NWI6 | Normalized water index 6 | Plant water status | WI | [R790-R720]/[R790+R720] | Winterhalter et al., 2011 |
|  |  |  |  |  |  |