**Supplementary data**

**A close-up of a plant

Description automatically generated**

**Figure S1: (A)** Experimental field design showing various treatments with two maize hybrids. **(B)** Maize plants with cobs.

**Table S1**. Quantities of volatile compounds, siderophores, lytic enzymes, and growth hormones of *T. viride* (T27) and *A. brasielence*.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Microbes** | **Volatile compounds** | |  | **Lytic enzymes (mg/mL)** | | | **Growth hormones**  **(mg/L)** | |
| HCN  (OD) | NH4  (mg/L) | Siderophores  (%) | Chitinase | Cellulase | Amylase | IAA | GA3 |
| ***T. viride* (T27)** | 0.208 | 3.12 | 0.765 | 2.206 | 0.121 | 0.493 | 33.2 | 30.8 |
| ***A. brasilense*** | - | - | - | - | - | - | 15.3 | 46.9 |

**Table S2**. The oxidative enzymes of two maize hybrids under different treatments.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Treatments** | | **T1** | **T2** | **T3** | **T4** | **T5** | **T6** | **df** | **F** | **P** |
| **Oxidative enzymes** | | | | | | | |
| **Polyphenol** | Treatments | 0.93**ab** | 0.79**c** | 1.06**ab** | 1.24**ab** | 0.89**c** | 1.35**a** |
| 5 | 4.28 | .006 |
| Corn | 1 | | | | | | | 8.95 | .006 |
| Treatments × Corn | 5 | | | | | | | 3.43 | .017 |
| **Peroxidase** | Treatments | 173.00**a** | 179.00**a** | 178.80**a** | 172.36**a** | 183.00**a** | 178.58**a** | 5 | 1.89 | .13 |
| Corn | 1 | | | | | | | 13.65 | .001 |
| Treatments × Corn | 5 | | | | | | | 4.05 | .008 |
| **Chitinase** | Treatments | 30.47**b** | 48.18**a** | 39.59**ab** | 36.02**b** | 47.25**a** | 29.64**b** | 5 | 9.74 | .670 |
| Corn | 1 | | | | | | | 4.86 | .169 |
| Treatments × Corn | 5 | | | | | | | 19.21 | .800 |
| **Phenyl** | Treatments | 94.78**b** | 78.51**cd** | 107.15**a** | 72.06**d** | 85.70**bc** | 86.11**bc** | 5 | 29.86 | <.001 |
| Corn | 1 | | | | | | | 36.52 | <.001 |
| Treatments × Corn | 5 | | | | | | | 14.93 | <.001 |
| **Catalase** | Treatments | 12.14**ab** | 13.93**a** | 12.56**ab** | 10.14**c** | 13.25**ab** | 11.45**ab** | 5 | 2.98 | .031 |
| Corn | 1 | | | | | | | 0.425 | .521 |
| Treatments × Corn | 5 | | | | | | | 4.046 | .008 |

According to Duncan's multiple range test, values within a raw followed by the same letter (s) are not significantly different at the P = 0.05 level.

**Table S3**. Anatomical measurements in roots of two maize hybrids under different treatments.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Hybrids** | **Treatments** | The whole thickness of the root (µ) | **Cortex** | | Endodermis thickness (µ) | Pith thickness (µ) | **Xylem** | | Phloem  Thickness (µ) | **Aerenchyma** | |
| Thickness (µ) | Degradation area thickness (µ) | Thickness (µ) | Number of Vessels in rows | Thickness (µ) | Number |
| **Susceptible** | T1 | 1980 | 450 | -- | 45.0 | 720 | 18.0 | 2 | 22.0 | 55 | 24 |
| T2 | 1170 | 315 | 360 | 18.0 | 270 | 45.0 | 3 | 18.0 | 42 | 14 |
| T3 | 1198 | 360 | -- | 27.0 | 630 | 27.0 | 2 | 27.0 | 60 | 18 |
| T4 | 2430 | 450 | -- | 28.0 | 1080 | 36.0 | 2 | 45.0 | 62 | 22 |
| T5 | 1458 | 405 | 225 | 22.5 | 1107 | 9.00 | 2 | 31.5 | 72 | 24 |
| T6 | 2178 | 203 | 225 | 27.0 | 900 | 18.0 | 2 | 40.5 | 81 | 20 |
| **Resistant** | T1 | 2925 | 540 | -- | 24.0 | 1008 | 39.5 | 2 | 31.5 | 90 | 26 |
| T2 | 1917 | 513 | 2881 | 18.1 | 1395 | 16.3 | 2 | 27.0 | 83 | 25 |
| T3 | 2430 | 585 | 90.2 | 27.2 | 900 | 18.0 | 3 | 30.1 | 108 | 29 |
| T4 | 3240 | 540 | -- | 27.0 | 765 | 22.1 | 3 | 27.0 | 90 | 26 |
| T5 | 2163 | 378 | 360 | 27.1 | 821 | 23.2 | 3 | 38.7 | 90 | 25 |
| T6 | 2718 | 450 | 252 | 28.8 | 1188 | 24.1 | 3 | 32.1 | 99 | 30 |