**Table 1. Average response by representative iron response genotypes of soybean to iron sufficient (+Fe) and iron deficiency stress (-Fe) conditions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Treatment** | **Genotype** | **14CTRE** | **TDM** | **TCHL** | **FeCS** |
| +Fe | **FeER** | 114.4±2.0 | 0.32±0.01 | 2.16±0.05 | 49.5±2.3 |
| **FeIR** | 81.2±4.4 | 0.30±0.01 | 1.92±0.16 | 47.8±2.1 |
| **FeENR** | 93.6±6.2 | 0.29±0.01 | 2.09±0.06 | 49.2±1.4 |
| **FeINR** | 64.3±2.1 | 0.23±0.01 | 1.76±0.01 | 40.1±0.8 |
| -Fe | **FeER** | 157.8±4.0 | 0.26±0.01 | 1.74±0.03 | 39.6±0.7 |
| **FeIR** | 92.3±1.8 | 0.22±0.01 | 1.53±0.03 | 35.8±0.3 |
| **FeENR** | 144.3±2.5 | 0.23±0.01 | 1.61±0.04 | 36.9±0.9 |
| **FeINR** | 69.1±2.6 | 0.13±0.01 | 1.02±0.03 | 28.6±2.5 |

14CTRE: 14C content in the total root exudates, TDM: total dry matter produced expressed in g plant-1, TCHL: total chlorophyll content in leaves expressed in mg g-1, FeCS: iron concentration in shoot expressed in mg kg-1 in different iron response genotypes of soybean. +Fe: 25 µM Fe-EDTA, -Fe: 2.5 µM Fe-EDTA, FeER: NRC-45, FeIR: IC-18734, FeENR: J-231 and FeINR: G-2132. Each entry in the table corresponds to the mean±SE of five replications

**Table 2. Low molecular weight organic acid exudation, proton extrusion and ferric chelate reductase activity by representative iron response genotypes of soybean to iron sufficient (+Fe) and iron deficiency stress (-Fe) conditions**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Treatment** | **Genotype** | **Proton extrusion** | **FCR Activity** | **OA** | **CA** | **MA** | **TA** |
| +Fe | **FeER** | 1.94±0.01 | 0.66±0.01 | 12.9±0.41 | 15.0±0.1 | 8±0.2 | 2.13±0.01 |
| **FeIR** | 1.42±0.02 | 0.43±0.01 | 7.7±0.12 | 9.8±0.2 | 5.3±0.2 | 2.13±0.01 |
| **FeENR** | 1.76±0.01 | 0.51±0.01 | 10.9±0.21 | 12.1±0.1 | 6.5±0.4 | 2.11±0.03 |
| **FeINR** | 1.22±0.01 | 0.42±0.01 | 5.9±0.26 | 4.2±0.3 | 3.2±0.1 | 2.10±0.01 |
| -Fe | **FeER** | 2.32±0.02 | 0.85±0.02 | 20.2±0.20 | 22.2±0.1 | 10.9±0.3 | 2.17±0.02 |
| **FeIR** | 2.04±0.02 | 0.51±0.01 | 11.7±0.12 | 15.8±0.4 | 7.1±0.4 | 2.11±0.02 |
| **FeENR** | 2.12±0.02 | 0.56±0.01 | 16.5±0.11 | 17.2±0.1 | 8.6±0.2 | 2.13±0.02 |
| **FeINR** | 2.03±0.01 | 0.49±0.01 | 8.5±0.17 | 8.3±0.1 | 4.4±0.1 | 2.12±0.03 |

FCR: Ferric chelate reductase activity expressed in µmol Fe (II) g-1 h-1, OA: Oxalic acid, CA: Citric acid, MA: Malic cid, TA: Tartaric acid expressed in µmol g-1 root-1,+Fe: 25 µM Fe-EDTA, -Fe: 2.5 µM Fe-EDTA, FeER: NRC-45, FeIR: IC-18734, FeENR: J-231 and FeINR: G-2132. Each entry in the table corresponds to the mean±SE of five replications

**Table 3. Pearson’s Correlation coefficient between IDC dependent traits under iron deficient condition**

| **Parameters** | **CTRE** | **TCHL** | **TDM** | **FeCS** | **PROT** | **FCR** | **OA** | **CA** | **MA** | **TA** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CTRE** | 1 | .853\*\* | .830\*\* | .787\*\* | .804\*\* | .771\*\* | .976\*\* | .897\*\* | .924\*\* | .383 |
| **TCHL** | . | 1 | .949\*\* | .838\*\* | .632\*\* | .648\*\* | .868\*\* | .954\*\* | .895\*\* | .263 |
| **TDM** |  |  | 1 | .807\*\* | .677\*\* | .665\*\* | .859\*\* | .938\*\* | .891\*\* | .330 |
| **FeCS** |  |  |  | 1 | .644\*\* | .619\*\* | .774\*\* | .826\*\* | .809\*\* | .234 |
| **PROT** |  |  |  |  | 1 | .953\*\* | .888\*\* | .801\*\* | .879\*\* | .661\*\* |
| **FCR** |  |  |  |  |  | 1 | .867\*\* | .814\*\* | .858\*\* | .581\*\* |
| **OA** |  |  |  |  |  |  | 1 | .943\*\* | .972\*\* | .495\* |
| **CA** |  |  |  |  |  |  |  | 1 | .974\*\* | .404 |
| **MA** |  |  |  |  |  |  |  |  | 1 | .535\* |
| **TA** |  |  |  |  |  |  |  |  |  | 1 |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

\* Correlation is significant at the 0.05 level (2-tailed) and \*\*Correlation is significant at the 0.01 level (2-tailed).