

Table S8 Component matrix among traits under CCC+TE

|   | Prin1    | Prin2    | Prin3    | Prin4    | Prin5    | Prin6    |
|---|----------|----------|----------|----------|----------|----------|
| Plant height (cm)                             | -0.10187 | 0.02401  | 0.53926  | -0.17935 | -0.01843 | -0.5628  |
| Internode number                              | -0.07051 | 0.02145  | 0.44677  | 0.69768  | 0.4219   | 0.22713  |
| Internode length (cm)                         | 0.11541  | 0.15297  | 0.40009  | -0.64717 | 0.21733  | 0.41212  |
| Stem diameter (mm)                            | 0.04266  | 0.30271  | 0.31172  | 0.20775  | -0.81768 | 0.22139  |
| Flag leaf width (mm)                          | 0.03206  | 0.42827  | 0.03895  | 0.00275  | 0.19612  | -0.24901 |
| Flag leaf length (cm)                         | 0.27407  | 0.27259  | -0.24194 | 0.09027  | 0.15942  | -0.10497 |
| Width of top second leaf (mm)                 | -0.16542 | 0.3845   | -0.09155 | -0.03575 | 0.11955  | 0.48258  |
| Length of top second leaf (cm)                | 0.31919  | 0.27136  | -0.04238 | 0.03408  | -0.04722 | -0.11255 |
| The number of fertile tillers·m <sup>-2</sup> | 0.31972  | -0.26369 | -0.14775 | 0.02748  | -0.06536 | 0.14595  |
| The number of fertile tillers·m <sup>-2</sup> | 0.39713  | -0.133   | 0.07222  | 0.01154  | -0.03311 | 0.00506  |
| Florets per spikelet                          | -0.35821 | -0.21088 | -0.09238 | -0.00823 | -0.01742 | 0.08705  |
| Seed setting rate (%)                         | 0.36864  | -0.15067 | 0.16882  | 5.97E-06 | 0.09604  | 0.1818   |
| 1000-grain weight (g)                         | 0.31756  | 0.28302  | 0.00615  | 0.07841  | 0.0936   | -0.16643 |
| Actual seed yield (kg·hm <sup>-2</sup> )      | 0.08958  | -0.34931 | 0.33961  | 0.00866  | 0.0042   | -0.01526 |
| Theoretical seed yield (kg·hm <sup>-2</sup> ) | 0.36209  | -0.2196  | -0.05174 | 0.03626  | -0.04187 | 0.06599  |