***Correlation analysis***

Correlation analysis indicated that the Cd content of the shoots was significantly negatively correlated with the number of root tips. The Cd content of the roots was extremely negatively correlated with the IAA concentration, extremely positively correlated with root length and root surface area, and positively correlated with root volume. The Cd uptake of roots was extremely negatively correlated with IAA concentration, extremely positively correlated with root length and root surface area, and significantly positively correlated with root volume, root tip number and branch number (Table. S1). In addition, the root Ca content was significantly negatively correlated with the Cd content (r=-0.490, *P*＜0.05) and the uptake amount (r=-0.528, *P*＜0.05).

**Table. S1** Correlation between IAA concentration, root morphology and Cd uptake characteristic of maize

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Items | Shoot Cd content | Root Cd content | Shoot Cd uptake | Root Cd uptake |
| IAA concentration | 0.348 | -0.633\*\* | 0.392 | -0.712\*\* |
| Root length | -0.155 | 0.735\*\* | -0.256 | 0.777\*\* |
| Root surface area | -0.008 | 0.644\*\* | -0.029 | 0.673\*\* |
| Average root diameter | -0.397 | 0.273 | -0.373 | 0.307 |
| Root volume | -0.208 | 0.492\* | -0.162 | 0.536\* |
| Root tip number | -0.491\* | 0.316 | -0.456 | 0.507\* |
| Branch number | -0.254 | 0.358 | -0.331 | 0.481\* |

Cd: cadmium; “\*” and “\*\*” means *p* < 0.05 and *p* < 0.01 according to correlation analysis, respectively. n=18.