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## THE PROTEOMICS RESEARCH IN MAIZE MUTANT SEEDS BY $^{60}\text{Co}$ -GAMMA RAY RADIATION

In this study, dry seeds of Chang7-2 and P138 were radiated by  $^{60}\text{Co}$ - $\gamma$  ray radiation with 100, 150, 200 and 250Gy. In order to research the changes of the growth and development in maize, seeds germination and major agronomic traits were measured. The results showed different dosage obviously inhibited the growth of the maize of M1, especially root length. While there was no apparent effect on M2, M3 germination, but significant influence on the 100-kernel weight of M3 and M4. The reaction of 2 maize inbred lines to  $^{60}\text{Co}$ - $\gamma$  ray radiation was different. Chang7-2 was more sensitive. Four mutants from M4 Chang7-2 were elected which had higher 100-kernel weight, named mutant1,2, 3 and mutant4. Albumin, globulin and glutelin from mutants were analyzed by SDS-PAGE. Results showed that mutant2 had obvious different bands on albumin compared with control, while mutant2 and mutant4 had obvious different bands on glutelin. Through the analysis of Imagemaster 2D, mutants had different variation points in albumin, globulin, glutenin and total protein. 6,6,7 and 8 albumen were respectively chosen in mutants, in which 11 albumen increased, 13 albumen decreased, 3 albumen induced expression. 4,4,11 and 4 globulins in mutants were chosen, in which 9 globulins increased, 9 globulins decreased, 5 globulins induced expression. 5,2,8 and 4 glutenin in mutants we chosen, in which 6 lutenin increased, 12 glutenin decreased, 2 glutenin induced. 9,3,9 and 4 total proteins in mutants were chosen, in which 11 proteins increased, 13 proteins decreased, 1protein induced. These proteins were identified by MALDI-TOF-MS and their functions were analyzed. 8 proteins were identified successfully. These proteins were classified into 3 categories: stress-related proteins; sugar metabolic pathways related proteins; other proteins.

### Country or International Organization

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