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DEVELOPMENT OF NEW VARIETIES USING SPACE INDUCED MUTATION

Space mutation is a new and efficient way to obtain a high frequency of variations for crop breeding. In the past years, we provided a series of food legumes collections for space mutation and continually observed their performances in the field for several generations. The results were as follow: (1) The germination ratio of SP1 obviously decreased shortly after space mutation, compared with the control group, while it became normal in the following generations; (2) A high frequency of variations on agronomic traits was observed within the generations of SP2. The frequency of variation was correlated with the seed sizes of different species, indicating that small seeds were easier to mutate; (3) Variations on the plant height, the number of nods per stem, the number of branches per stem, the number of pods per plant and the seed size, were observed continuously from SP2 generations, while we didn't find any variation on number of seeds per pod. Some of those variations were steadily inherited after reproduction for several generations, and (4) After reproduction and observation for several generations and selection of lines that had potential advantages, a set of elite lines were finally selected for their stable and good performances on the main agronomic traits. These lines were further developed into new varieties as Zhonglv 8, Zhonglv12 and Zhonglv13, and have been released.

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