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Genetics Analysis of Herbicide-Resistant Transgenic Chili Pepper

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Objectives

It is necessary to develop the noble variety of chili pepper for development of economic and productive agriculture. Now, we developed herbicide-resistant transgenic chili peppers and analysis the genetic pattern of T0 to T2 generation.

Material and Methods

1. Herbicide-resistant chili pepper (*Capsicum annuum* L. Var. 'Subicho')
2. Methods : Herbicide Bioassay (Basta 0.6%)

Results

Transgenic chili pepper (*Capsicum annuum* L. Var. 'Subicho') plants have been produced using an Agrobacterium-mediated transformation system. *Agrobacterium tumefaciens* strain EHA105 carrying a binary vector pCKBar (*npt-bar*) has been used for the transformation.

The two transgenic plants, named BP4 and BP5 were selected and self-pollinated and harvested their fruits. Each T1 line was analyzed by counting the ratio of herbicide resistant and susceptible lines after spraying of 0.6% Basta solution. The results of bioassay displayed 3 : 1 ratio of resistant and susceptible by the chi-square test.

T2 plants were advanced and analyzed with herbicide bioassay. We isolated the complete resistant lines (100%) as homozygous line. The progeny of wild type ('Subicho') and transgenic lines revealed the 1 : 1 ratio of resistant and susceptible as inheritance of single dominant gene.



Figure 1. Herbicide Bioassay - 0.6% Basta treatment