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## Japanese journal of crop science

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#### Ultrastructural Studies on the Fusion Product between Protoplasts of Mung Bean and Adzuki Bean

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#### Abstract:

Mesophyll protoplasts of mung bean (*Vigna radiata* L. Wilczek) were electrofused with cell suspension-derived protoplasts of adzuki bean (*V. angularis* Ohwi & Ohashi) and subsequently cultured for several days. The structural characteristics of fusion products and unfused protoplasts of parental species were examined using light and transmission electron microscopes. Fusion product was distinguishable from the parental species due to the concurrent existence of chloroplasts originated from mung bean and proplastids from adzuki bean. Heterokaryon performed a mixture of cytoplasm between fused parentals. However, chloroplasts from mung bean and proplastids and ER fragments derived from adzuki bean were still encountered on their initial sides. Chloroplasts became a little round in shape due to application of electric field. Electric stimulation also caused the fusion between organelles. The fusion product started to divide after 5 days in culture. Some of the dividing cells demonstrated unequal segregation of chloroplasts in the daughter cells.

#### Keywords:

Adzuki bean, Chloroplast, Fusion, Mung bean, Organelles, Protoplast, Ultrastructure

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