

<b>Thesis Title</b>	Varietal Improvement of Leaf Mustard ( <i>Brassica juncea</i> L.) Using Cytoplasmic Male Sterility	
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### Abstract

Transferring of cytoplasmic male sterility lines of leaf mustard into five inbred lines were studied. The results show that 4-4 X 67 line had the highest seed weight 0.954 grams/plant and 4-4 X 2113 line had the lowest seed weight 0.391 grams/plant. The results of seed production in the fifth generation of backcross ( BC<sub>5</sub> ) involving eight inbred lines show that BC<sub>5</sub> 4-4 X 67 had the highest seed weight and BC<sub>5</sub> 4-4 X 2113 had the lowest seed weight. Their seeds weight were 0.946 grams/plant and 0.102 grams/plant, respectively. The study of method for leaf mustard pollinations; hand pollination, bee pollination, and open pollination suggests that hand pollination was the best method for leaf mustard pollination. Making hand pollination the plant could produce 0.138 grams of pod weight and 1.0016 grams weight / 1,000 seed. It also produced 8.5 seed/pod. which better than bee pollination and open pollination. The hybrid seeds were backcrossing from BC<sub>4</sub> were tested in comparision with the commercial variety in winter 1997. The results show that most of hybrid lines were bolting excepted the two ( 4-4 X 19-H-12 ) X 4OR<sub>2</sub>-3-4 and ( 4-4 X 2R<sub>2</sub> ) X 4OR<sub>2</sub>-3-4 lines which were heading and also gave high yield of 6,220 and 5,220 kilograms/rai respectively. Therefore both of them are recommened to tested in the farmer trail. The isozyme from peroxidase, acid phosphatase, and esterase which using in electrophoresis technique were investigated for genetic relationship between hybrid and their parents. The results show that peroxidase was the best enzyme for this method.