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Estimation of Out-Crossing Rate in *Monochoria korsakowii* Using the Herbicide Resistance Trait as a Marker

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In order to discuss the rate of dispersion of the resistance gene of *Monochoria korsakowii*, we quantitatively estimated the out-crossing rates using the herbicide resistance trait as a marker on experimental populations. Two insect species, *Apis mellifera* and *Xylocopa circumvolans*, were observed on the flowers and the estimated out-crossing rates ranged from 10.4 to 67.8% with an average of 36.2%. The finding indicates that the trait can be transmitted via pollen by bees and expressed in hybrid offspring and further implies that the subsequent spread of resistance can occur through pollen migration. Thus, the evolution of resistance will be rapid.

Keywords:
herbicide resistance, *Monochoria korsakowii*, out-crossing, pollen dispersal, sulfonylurea herbicide

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