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Seed set ratio and its relationship with vegetation scale in marsh sedge, *Carex rugulosa*

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Abstract

The seed set ratio in different types of pollination and its relationship with vegetation scale were studied in relation to *Carex rugulosa*, which develops in marshy meadows along lakeshores and estuaries. The male and female spikes of *C. rugulosa* develop separately on the same reproductive shoot, and the pollen grains are dispersed by wind. We conducted pollination experiments at the large meadow along the Ohashi River estuary, Japan. The percentage of seed set in emasculation (77%) did not differ significantly from control (75%). This suggested pollen delivery from other flowering shoots. The seed set ratio in the artificial self-pollination with bagging treatment (48%) did not differ significantly from that in the artificial cross-pollination with bagging (68%), showing that *C. rugulosa* can produce seeds through selfing. The seed set ratios in small-scale vegetation at three other sites (2, 22 and 37%) were significantly lower than in the large meadow along the Ohashi River estuary (75%). This may be caused by restricted pollen supply in small meadows.

Key Words: *Carex rugulosa*, seed production, self-compatibility, vegetation scale, wind pollination

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