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**The relationship between reproductive success and clonal structure in a simultaneous flowering population of the monocarpic dwarf bamboo, *Sasa veitchii* var. *hirsuta*.**

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Dwarf bamboos (*Sasa* spp.), which often dominate in the understory vegetation of Japanese forests, have a peculiar life-history: they flower synchronously over an extensive area and then die once in a hundred years or more. Before the simultaneous flowering they grow vegetatively by extending rhizomes, so they can be considered as having “initial seedling recruitment” (ISR) strategy. In this study, we investigated the spatial distribution and fecundity of each ramet and genet in a simultaneous flowering population of *Sasa veitchii* var. *hirsuta*, and asked how clonal structure affects reproductive success. Using microsatellite markers, we genotyped all flowering ramets (4516 culms) in the 10 × 10 m study plot and 1736 seeds (representing 10% of the resulting seeds in the plot) for which pollen donors were determined through paternity analysis. Our results showed that a number of genets with different sizes intermingled in the population (on average, 12.5 genets / m<sup>2</sup>), and that larger genets had higher male and female reproductive success. Although selfing rate was not related with genet size (on average, 22%), larger genets produced more seeds that were sired by a larger number of pollen parents. These results suggest that vegetative growth significantly enhanced reproductive success both quantitatively and qualitatively.