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Ecology, physiology and behaviour

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## Synchronous masting regulates seed-seed interactions for two co-fruited tree species under the mediation of rodents

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DOI: 10.20315/evmc.2025.115

Knowledge is lacking on how masting regulates seed-seed interactions of sympatric tree species under the mediation of rodents. Here, we compared rodent-mediated seed dispersal between two sympatric tree species (*Castanea mollissima* and *Quercus aliena*) in both monospecific and mixed plots, across five successive years in the Qinling Mountains, China. We investigated: (a) whether the rodent-mediated seed dispersal success of each tree species was affected by the presence of the other, and (b) if any effects on dispersal were influenced by either the abundance of rodents present, or by (c) masting (i.e., seed abundance). We found both short-term mutualism and competition occurred between these two sympatric tree species. In non-mast years, the presence of *Q. aliena* seed reduced predation on *C. mollissima* seeds and promoted seed caching, which resulted in higher rates of *C. mollissima* seed dispersal. Synchronous masting enhanced this benefit to *C. mollissima* seeds, although we detected no clear neighbour or masting benefits for *Q. aliena* seed dispersal. This shows that interspecific interactions differ between these masting neighbours, which may relate to either relative species-specific seed abundance or seed traits. We conclude that seed abundance mediates rodents' seed foraging and caching strategies, which may be important for forest regeneration and forest tree species composition.