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Growth of the meadow-forming macrophyte *Vallisneria denseserrulata* is often negatively impacted as result of shading by the canopy-forming *Hydrilla verticillata*. Grazing by the herbivorous cyprinid *Megalobrama amblycephala* is thought to control *H. verticillata*. We hypothesized that *M. amblycephala* would prefer *H. verticillata* over *V. denseserrulata*, and that where the latter is grazed, its growth will not be wholly compromised, due in part to the efficiency with which it is metabolized by the grazer. In a pond experiment, macrophytes were planted with monocultures of *H. verticillata* and *V. denseserrulata*, and in mixed cultures of the two species, with and without grazing by *M. amblycephala*. The results showed that in the absence of fish, the growth rate of *V. denseserrulata* was significantly reduced in the presence of *H. verticillata*. In the mixture, *M. amblycephala* had a significant negative effect on the growth of *H. verticillata* but not on *V. denseserrulata*. Grazing was associated with reductions in plant height, plant fresh weight and leaf fresh weight but the leaf number, maximum root length, maximum blade width, root weight and stem weight in *V. denseserrulata* increased.

The food utilization ratio of *M. amblycephala* was significantly higher when grazing solely on *V. denseserrulata* than when grazing on *H. verticillata* or the mixture. Our results imply that *V. denseserrulata* is protected from overgrazing by the ability of *M. amblycephala* to make more effective metabolic use of ingested material than for *H. verticillata*. Furthermore, *M. amblycephala* is beneficial to *V. denseserrulata* in reducing competition from *H. verticillata*.

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