Species diversity defends against the invasion of Nile tilapia (

Nile tilapia (Oreochromis niloticus) is one of the most widely cultured species globally and has successfully colonized much of the world. Despite numerous studies of this exotic species, how differences in native communities mitigate the consequences of Nile tilapia invasion is unknown. Theory predicts that communities that are more diverse should be more resistant to exotic species, an effect that is referred to as “biotic resistance”, but these effects are spatially dependent and organism-specific. Field surveys and laboratory experiments were conducted to test the theory of “biotic resistance” and ascertain the relationship between native species richness and the invasion of Nile tilapia. In the field, we found that as native species richness increased, the biomass of Nile tilapia was significantly reduced. Consistent with results from the field, our manipulative experiment indicated that the growth of Nile tilapia was negatively related to native species richness. Thus, our study supports the theory of “biotic resistance” and suggests that species biodiversity represents an important defense against the invasion of Nile tilapia.

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