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Aquatic fungi and actinomycetes as foods for freshwater Crustacea

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Asellus aquaticus and *Gammarus pulex* were fed with aquatic fungi and in addition *Asellus aquaticus* was fed with several aquatic actinomycetes. These two large freshwater crustacea are known to be fairly omnivorous and it was therefore not surprising that the presented micro-organisms were generally accepted as foods. Of the foods collected directly from the environments of the animals, the best, conferring the highest growth rates on the animals, were fresh green Canadian pond weed (*Elodea canadensis*) leaves for *Asellus aquaticus* and decaying oak (*Quercus* spp.) and elm (*Ulmus carpiniifolia*) leaves for *Gammarus pulex*. Growth rates of the animals on diets of micro-organisms were generally much lower although it was of great interest that when *Saprolegnia* fungus was presented then the growth rate of *Asellus aquaticus* matched that on best foods from the environment. *Saprolegnia* has exceptionally wide hyphae and there is therefore the possibility that the animals have difficulty in extracting food from the more narrow hyphae of aquatic Hyphomycete fungi and actinomycetes. Although actinomycetes, and by inference bacteria also, were relatively poor foods for *Asellus aquaticus* the evidence was that they could maintain a slow-growing population of the animals in situations where the preferred macroscopic foods were largely absent.

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