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Incorporation and burial of carbon from settling cyanobacterial blooms by deposit-feeding macrofauna

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ABSTRACT: Summer blooms of filamentous, nitrogen-fixing cyanobacteria are typical of the Baltic Sea, and recent findings indicate that cyanobacteria may be an important food source for the benthos below the euphotic zone. In a 2-week laboratory experiment, we measured incorporation of cyanobacterial carbon by the deposit-feeding amphipod Monoporeia affinis when exposed to '*C-radiolabeled, natural blooms of cyanobacteria dominated by either the toxic Nodularia spumigena or nontoxic Aphanizomenon sp. Carbon from both cyanobacterial blooms was used, with greater incorporation from Aphanizomenon-dominated bloom material than from N. spumigena, indicating that the latter is less suitable as food. However, neither cyanobacterium supported significant amphipod growth. Also, less cyanobacterial carbon was mixed down in the sediment in the N. spumigena treatment, indicating lower bioturbation activity in this treatment. Long-term effects on feeding and survival remain to be studied, especially for the toxic N. spumigena.

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