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**DIET AND FEEDING PREFERENCES OF NON NATIVE BIVALVE
(DREISSENA BUGENSIS) ASSESSED BY HPLC ANALYSIS OF
CHEMOTAXONOMIC PIGMENTS**

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Previous studies have reported selectivity in the diet of the non-native filter-feeding Dreissenids in Lake Erie, promoting outbreaks of toxic cyanobacterial blooms, which have serious consequences to aquatic ecosystem, animal and human health. In this context, *Dreissena bugensis* (Bivalvia: Dreissenidae), their pseudofeces and surface sediments (nearshore/offshore) were sampled bi-weekly in spring/summer 2003 from the benthos of the eastern basin of Lake Erie. Selectivity in their diet was investigated by chemotaxonomic algal pigment analysis using HPLC / PDA-Fl.

The carotenoid composition of *D. Bugensis* indicated a diet of diatoms, chlorophytes, cryptophytes and cyanobacteria, as revealed by the detection of class specific pigment biomarkers: fucoxanthin, violaxanthin, alloxanthin, and zeaxanthin. Fucoxanthin was the most abundant pigment (maximum of 3 microgram per gram sediment dry weight), representing approximately 50 percent of the total carotenoid pool and was mainly present as fatty-acid ester derivatives. These observations suggest that dreissenids: (i) actively feed on nutritious diatoms during this time of the year, (ii) overlap with the diet of herbivorous zooplankton, and (iii) selectively esterify the chemotaxonomic pigment fucoxanthin by adding fatty acids to available hydroxyl moieties, increasing its lipophilicity; a strategy interpreted as a storage mechanism of physiologically active compounds.

Overall, sediments and pseudofeces have a closely related pigment composition, carrying the signature of mixed planktonic algal community. However, undigested pseudofeces contained significantly higher amounts of chlorophylls, pheopigments and carotenoids. No signs of selective rejection were found in the pseudofeces using the pigment biomarker approach.