Effects of dust deposition and river discharges on trace metal composition of Trichodesmium spp. in the tropical and subtropical North Atlantic Ocean

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ABSTRACT: We present the elemental composition (Al, Cd, Co, Cu, Fe, Mn, Mo, Ni, V, Zn, and P) of field-collected *Trichodesmium* populations. To distinguish the effects of river discharges (Amazon and Niger Rivers) and Saharan dust deposition on metal concentrations in the colonies, samples were collected both in the western (February 2001, July-August 2001, and April-May 2003) and eastern (May-June 2003) basins of the North Atlantic. Metal composition (medians normalized to P) in Trichodesmium ranged from 0.011 mmol mol'' for Co to 39 mmol mol'' for Fe and varied over an order of magnitude among different locations. A comparison of metal ratios measured in the *Trichodesmium* colonies with ratios reported for the potential sources suggests that the most important sources of trace metals to the tropical and subtropical Atlantic during our sampling were the Amazon and Niger Rivers, rather than dust deposition from the Sahara.

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