

**Appendix 8:** Nutrient uptake rates of *Trichodesmium* sp.

<b>PO<sub>4</sub></b> uptake	<b>NO<sub>3</sub></b> uptake	<b>NO<sub>2</sub></b> uptake	<b>NH<sub>4</sub></b> uptake	<b>urea</b> uptake	<b>Glu</b> uptake	<b>note</b>	<b>reference</b>
~0.8 - ~7.9 nmol cell <sup>-1</sup> d <sup>-1</sup>	80.6 nmol cell <sup>-1</sup> d <sup>-1</sup>					1)	Ramamurthy and Krishnamurthy 1967
~0.2 - ~1.2 nmol cell <sup>-1</sup> d <sup>-1</sup>	24.2 – 104.8 nmol cell <sup>-1</sup> d <sup>-1</sup>					2)	"
	~ 0.58 fmol N cell <sup>-1</sup> h <sup>-1</sup>	~ 12.5 fmol N cell <sup>-1</sup> h <sup>-1</sup>		~ 1.66 fmol N cell <sup>-1</sup> h <sup>-1</sup>		3)	Carpenter + McCarthy 1975
	< 0.2 fmol N cell <sup>-1</sup> h <sup>-1</sup> 5)		20 fmol N cell <sup>-1</sup> h <sup>-1</sup>		0.4 – 0.6 fmol N cell <sup>-1</sup> h <sup>-1</sup>	4)	Mulholland et al. 1999
	25 fmol N cell <sup>-1</sup> h <sup>-1</sup>					6)	"
				3 - 6 fmol N cell <sup>-1</sup> h <sup>-1</sup>		7)	"
	0.0003 - 0.0043 % h <sup>-1</sup>		0.04 - 1.84 % h <sup>-1</sup>	0.0007 - 0.11 % h <sup>-1</sup>	0.015 - 0.37 % h <sup>-1</sup>	8)	Mulholland and Capone 1999
			18 μmol N l <sup>-1</sup> d <sup>-1</sup>				Mulholland and Capone 2001

1) changing N:P ratio 20:1 - 20:15 (increasing P), *T. erythraeum*, lab, 24h incubation

2) changing N:P ratio 1:1 - 25:1 (increasing N), *T. erythraeum*, lab, 24h incubation

3) *T. erythraeum*, lab

4) NIBB1067, lab

NH <sub>4</sub> K <sub>s</sub> = 0.26 μM	NH <sub>4</sub> V <sub>max</sub> = 13 /h x 10e <sup>-3</sup>
NO <sub>3</sub> K <sub>s</sub> = 39 μM	NO <sub>3</sub> V <sub>max</sub> = ND
urea K <sub>s</sub> = 6.75 μM	urea V <sub>max</sub> = 19 /h x 10e <sup>-3</sup>
Glu K <sub>s</sub> = 1.34 μM	Glu V <sub>max</sub> = 15 /h x 10e <sup>-3</sup>

5) calculated from data given in paper

6) NO<sub>3</sub> uptake max - NO<sub>3</sub> enriched (150μM), lab, NIBB1067

7) urea enriched (30μM), lab, NIBB1067

8) field NH <sub>4</sub> K <sub>s</sub> = 3.5 μM	NH <sub>4</sub> V <sub>max</sub> = 22 /h x 10e <sup>-3</sup>
NO <sub>3</sub> K <sub>s</sub> = 0.4 μM	NO <sub>3</sub> V <sub>max</sub> = 0.2/h x 10e <sup>-3</sup>
urea K <sub>s</sub> = 31 μM	urea V <sub>max</sub> = ND
Glu K <sub>s</sub> = 3.1 μM	Glu V <sub>max</sub> = 4.5 /h x 10e <sup>-3</sup>