

TABLE 5.7. Rates of Light-Saturated Inorganic Carbon Assimilation in Various Aquatic Plants (Data From Compilations by Raven, 1980, 1981, Except for *Anacystis nidulans*: see Footnote^a)

Organism	Conditions	Inorganic C fixation rate, nmol (m ² plant surface) ⁻¹ s ⁻¹
<i>Anacystis nidulans</i> ^a (planktonic freshwater cyanobacterium)	CO ₂ saturation continuous light	250
<i>Chlorella</i> sp. (planktonic freshwater chlorophycean)	CO ₂ saturation	900
<i>Coccolithus huxleyi</i> (= <i>Emyliana huxleyi</i>) (planktonic marine prymnesiophyte)	CO ₂ saturation	200
<i>Laminaria hyperborea</i> (haptophytic marine phaeophyte)	Young lamina in seawater (sporophyte)	2,800
<i>Macrocystis pyrifera</i> (haptophytic marine phaeophyte)	Young frond in seawater (sporophyte)	4,000
<i>Saccorhiza bulbosa</i> (haptophytic marine phaeophyte)	Young frond in seawater (sporophyte)	3,800
<i>Fucus vesiculosus</i> (haptophytic marine phaeophyte)	Apex (young) of sporophyte in seawater	3,300
	Base (older) of sporophyte in seawater	1,570
<i>Porphyra umbilicalis</i> (haptophytic marine rhodophyte)	Sea water	3,550
<i>Chondrus crispus</i> (haptophytic marine rhodophyte)	Sea water	2,050
<i>Ulva lactuca</i> (haptophytic marine ulvophycean)	Sea water	4,100
<i>Codium fragile</i> (haptophytic marine ulvophycean)	Sea water	3,790
<i>Chara corallina</i> (rhizophytic freshwater charophycean)	CO ₂ saturation	1,200
<i>Potamogeton polygonifolius</i> (rhizophytic freshwater magnoliophyte)	CO ₂ saturation	3,000
<i>Vallisneria asiatica</i> (rhizophytic freshwater magnoliophyte)	Fresh water	1,400
<i>Hydrilla verticillata</i> (rhizophytic freshwater magnoliophyte)	Fresh water	1,600
<i>Cymodocea nodosa</i> (rhizophytic marine magnoliophyte)	Sea water	2,900
<i>Posidonia oceanica</i> (rhizophytic marine magnoliophyte)	Sea water	1,700
<i>Montastrea annularis</i> (haptophytic ^b marine coral)	Sea water	5,220

^aSpecific growth rate of $6.32 \cdot 10^{-5} \text{ s}^{-1}$ (generation time of 3 h); cells cylindrical with hemispherical ends, $1 \mu\text{m} \times 4 \mu\text{m}$; dry weight 26.6% of wet weight; specific gravity 1 mg m^{-3} ; C half of dry weight [data from Myers and Kratz, 1956; Lang and Whitton, 1973].

^bChalker et al. [1983] present new data on the rate of photosynthesis by corals, and give an excellent discussion of coral photosynthesis in the context of marine macrophyte photosynthesis.