





Table 2. ARA^a by epiphytes on old and young parts of submerged weeds, in the light and in the dark

	Chara		Najas	
	Light	Dark	Light	Dark
	(nmole C ₂ H ₂ h ⁻¹ g ⁻¹ fresh weight)			
Old parts	23.6	1.51	27.2	1.97
Young parts	49.6	5.05	26.2	1.57

^a Difference between 60 and 30 minutes measurements.

Acetylene-reducing activity

Time course of incubation. Cumulative production of ethylene by epiphytes on *Chara* and *Najas* incubated in the light exhibited a non-linear increase after one hour of incubation, as reported by David & Fay (1977). Therefore, specific activities were calculated using the difference between 60 and 30 minutes measurements.

Specific activities and extrapolation to the field scale. Results presented in Table 3

suitable for the attachment of *Gloeotrichia* sp. This blue-green alga forms floating, flobose, colonies that could develop considerable biomasses of several t ha⁻¹ (Watanabe *et al.*, 1978), but are frequently washed out of the field by heavy rains or bleached by high light intensities. Epiphytic *Gloeotrichia* are protected from these adverse conditions and provide an inoculum from which regeneration of the bloom is possible. It is therefore clear that in the nitrogen cycle of a rice field, the submerged weeds play a positive role in the N₂ fixation process.

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