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PROGRAM AND ABSTRACTS

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APLYSIA SPP. IN THE RIA FORMOSA LAGOON (S. PORTUGAL): ARE THEY IMPORTANT HERBIVORES?

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The impact of the opistobranchs *Aplysia fasciata* and *Aplysia depilans* on green algae in the Ria Formosa lagoon has been assessed by a combination of field observations and laboratory experiments. Abundance, size-frequency distribution and egg mass has been monitored monthly (February to June 1997) on a sand flat, together with the growth rate of the green alga *Ulva rigida* in cages. In laboratory experiments, small individually-reared specimens of *A. depilans* showed a mean increase of 14 % fresh weight daily until the first egg masses were deposited at about 120 g fresh weight. This implies that an animal of 1 g would attain this specific size in approx1 month. Highest consumption rates of *A. fasciata* were attained with the green algae *Enteromorpha intestinalis*, *Ulva rigida* and *Rhizoclonium lubricum* , compared with *Zostera noltii* leaves and the red alga *Gracilaria* spec. When given the choice, *Enteromorpha* was prefered to *Ulva* and *Ulva* to *Rhizoclonium*. In terms of abundance and size frequency monitored on the sand flat, ilaboratory data suggest that the species will remove up to 3 g algal fresh weight per day. When related to the growth rates of *Ulva rigida*, it appears that the *Aplysia* species could control algal densities of up to more than 78 g fresh weight (or 23 g dry weight) per m^2. Although this would not be sufficient to prevent green algal blooms, they are one of the few species capable of significantly reducing the green algal biomass.

ISOTOPIC EVIDENCE OF A BENTHIC MICROPHYTOBENTHOS-BASED SECONDARY PRODUCTION IN *CERASTODERMA EDULE*, A COMMON FILTER-FEEDER BIVALVE IN MARENNES-OLERON BAY, FRANCE

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Stable carbon and nitrogen analyses were used to quantitatively define the trophic base of the common filter-feeder bivalve *Cerastoderma edule* (L.) living on Oleron island and Marennes-Oléron Bay intertidal mudflats, Atlantic coast, France. $Delta_{13}C$ and $d_{15}N$ ratios of both juvenile and adult cockles, together with their potential food sources i.e. suspended particulate organic matter (POM), microphytobenthos, macroalgae (*Enteromorpha* spp., *Fucus* spp. *Ulva* spp.) and marine plants (*Zostera noltii*), were analyzed during one year. Results clearly indicated that carbon assimilated by *C. edule* is a mixture of carbon from microphytobenthos ($delta_{13}C$= -16.0 ± 0.6 ‰) and POM