

# Leaf renewal cycle and primary production of *Posidonia oceanica* in the bay of Lacco Ameno (Ischia, Italy) using lepidochronological analysis

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## ABSTRACT

Pergent, G. and Pergent-Martini, C., 1991. Leaf renewal cycle and primary production of *Posidonia oceanica* in the bay of Lacco Ameno (Ischia, Italy) using lepidochronological analysis. *Aquat. Bot.*, 42: 49–66.

The cycle of leaf renewal of *Posidonia oceanica* (L.) Delile has been modelled around Ischia Island (Italy), using lepidochronological data. The three parameters taken into consideration are rhythm of fall, rhythm of formation and leaf longevity. As at other Mediterranean sites, the *Posidonia oceanica* meadow showed a high autumnal leaf fall at Ischia which confirmed previous hypotheses. Leaf formation was very high at the end of summer and in autumn (more than 60% of new leaves appear between August and January). Leaf longevity ranged from 7 to 12 months, depending on the formation date. Primary production was also measured using lepidochronological data. Net primary production of the meadow ranged from 203 to 708 g dry weight m<sup>-2</sup> year<sup>-1</sup>, depending on the year and depth. This new technique for estimating primary production is much faster than the classic methods (leaf marking, oxygen, carbon-14) and has the further advantage that primary production for previous years can also be estimated.