Photosynthetic Inhibitory Activity of Dihydro-β-agarofurans Sesquiterpenes from *Maytenus disticha* and *Maytenus boaria* (Celastraceae)

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Z. Naturforsch. **55c,** 631–637 (2000); received January 28/March 22, 2000

Maytenus Species, β-Agarofuran, Hill Reaction Inhibitor

The effects of 9β-benzoyloxy-1α, 2α, 6β, 8α, 15-pentaacetoxy-dihydro-β-agarofuran and 9β-furoyloxy-1α, 6β, 8α-triacetoxy-dihydro-β-agarofuran, major phytogrowth inhibitors isolated from the aerial parts of *Maytenus disticha* (Celastraceae) and seeds of *Maytenus boaria* (Celastaraceae), respectively, on different photosynthetic activities of isolated spinach chloroplasts have been investigated. Photophosphorylation and electron transport (basal, phosphorylating and uncoupled) were inhibited in a concentration dependent manner by both compounds, therefore acting as Hill reaction inhibitors. The site of action of these natural compounds was located in the span from P_{680} to Q_A. 9β-benzoyloxy-1,2,6,8,15-pentaacetoxy-dihydro-β-agarofuran was one order of magnitude more potent (I_{50} = 2.6 μM) than 9β-furoyloxy-1,6,8,-triacetoxydihydro-β-agarofuran, suggesting that the substitution at C-9 and the acetoxy groups at carbons 2 and 15 are important structural requirements for the displayed inhibitory activity.