

# XXXV

## Società Chimica Italiana



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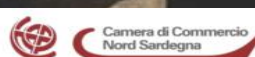
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# Convegno della Divisione di Chimica Organica

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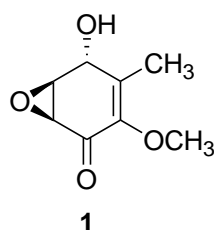
## Phytotoxic Metabolites Produced by Botryosphaeriaceae Involved in Grapevine Trunk Diseases

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Fungi belonging to the Botryosphaeriaceae family are well known as cosmopolitan pathogens, saprophytes and endophytes and occur on a wide range of hosts including grapevine. Grapevine disease symptoms caused by members of this family include leaf spots, fruit rots, shoot dieback, bud necrosis, vascular discoloration of the wood, and perennial cankers (1). The nature and appearance of wood symptoms caused by these pathogens suggest that phytotoxic metabolites could be involved in the host–pathogen interaction. For example phytotoxins such as (3*R*,4*R*)-(-) and (3*R*,4*S*)-(-)-4-hydroxymelleins, isosclerone and tyrosol has been isolated and identified from a strain of *Neofusicoccum parvum* isolated from symptomatic grapevines in Catalogna (2). Another species, *N. australe* involved in the aetiology of grapevine cordon dieback in Italy, showed to produce *in vitro* structurally different secondary metabolites. The main phytotoxin, named cyclobotryoxide, was characterized as a new cyclohexenone oxide (1). It was produced together with 3-methylcatechol and tyrosol (3).



In addition, the species *Diplodia seriata* showed to produce already known melleins as (3*S*,4*R*)-4-hydroxymellein, (3*S*)-7-hydroxymellein and a new one characterized as (3*S*,4*R*)-4,7-dihydroxymellein (4).

More recently, a new species of *Lasiodiplodia* was isolated from declining grapevines in Sardinia (Italy). This still undescribed species showed to produce in liquid culture several phytotoxic secondary metabolites. In this communication the chemical and biological characterization of these bioactive secondary metabolites is discussed together with their role in the pathogenesis process.

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- (3) ANDOLFI, A.; MADDAU, L.; CIMMINO, A.; LINALDEDDU, B.T.; FRANCESCHINI, A.; SERRA, S.; BASSO, S.; MELCK, D.; EVIDENTE, A. *J. Nat. Prod.* **2012**, *75*, 1785-1791.
- (4) ANDOLFI, A.; MUGNAI, L.; LUQUE, J.; SURICO, G.; CIMMINO, A.; EVIDENTE, A. *Toxins* **2011**, *3*, 1569-1605.