**DiSSPA - UNIBA Via Amendola 165/ A, 70126 Bari, Italy, francesco.porcelli@uniba.it**

**DAFNAE - UNIPD, viale dell'Università 16, 35020 Legnaro, Italy, giuseppina.pellizzari@unipd.it**

**Selge Network, University of Bari Aldo Moro Via Amendola 165/A, 70126 Bari, Italy, vrbio@libero.it**

**CIHEAM - MAIB OAD, via Ceglie, 9 70010 Valenzano (BA), Italy, erminia.traversa@ciheam.org**

**CNR-IPSP s. s. Bari Via Amendola 122/D, 70126 Bari – Italy.**

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**Nidularia pulvinata** (Planchon, 1864) (Hemiptera Kermesidae)

gall-inducing attitude

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**ABSTRACT**

Recurrent **Nidularia pulvinata** outbreaks off *Quercus ilex* L. (Fagaceae) led us to scrutinize large amount of infested and damaged trunks, branches and twigs. A long series of detailed observations suggested studying the attitude of the Kermesidae to induce phloem/xylem disorganization by saliva injection, possibly. Evidence show that woody plants tissues near or under the scale insects swell considerably giving the organs a prominent and rising appearance. Infested bark and other plant surfaces are prone to produce crevices and other possible shelters for future crawlers that will find a nice living site nearby. In vivo transverse section, accurate observations corroborated with polarized light microscopy and Scanning Electron Microscopy suggests that the scale stylets strongly disturb the explored plant tissues. Plant tissues reply to the injury with considerable overgrowing and necrosis. By observations and evidenced we discuss the opportunity to consider **Nidularia pulvinata** a gall-making species, also comparing its attitude with that of other Kermesidae and Asterolecaniidae.

**Nidularia pulvinata** infestation starts from crawlers that set into natural bark crevices. Scales feeding elicits the plant reaction that results in progressive widening of infested crevices. That, in consequence, offers more room for the subsequent broods of the Kermesidae.

To evaluate the action of Nidularia feeding on host plant wood, we fell down two small *Quercus ilex* infested to death. We chose and mark several points before to cut the infested trunks and branches transversally.

The action of Nidularia pulvinata feeding on host plant wood is clear in the left and central figure in comparison to right picture of a not infested trunk. Each log was pictured from the transversal section and the corresponding side. Red dashed lines connect corresponding points of the wood. The red arrow points to wood overgrowths for Nidularia infestation, while a blue arrow target a lateral branch bud. Red lines encircle wood overgrowths due to hyperplasia/hypertrophy stimulated by the Kermesidae.

On twigs the **Nidularia pulvinata** feeding results in wood swelling, depression/overgrowth and necrosis.

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Nidularia pulvinata (Planchnon, 1864) (Hemiptera Kermesidae) gall-inducing attitude

R. Roberte, V. Rasson, F. Perelli, G. Pizziaro

ABSTRACT: Nidularia pulvinata induces gall formation in a variety of plant species, resulting in significant economic losses. The gall is induced by the feeding of the gall midge, which causes the host plant to produce a chemical signal that attracts and sustains the gall midge. The galls form at the base of the plant, providing a protected environment for the gall midge to lay its eggs. This process results in the production of new galls, which can be observed in the images provided. The images show the galls forming on various plant species, including a close-up view of the gall midge feeding on a leaf. The gall midge is shown in detail, highlighting its distinctive features and the way it interacts with the host plant.