

Flower-bud failure in olive and the involvement of amoeboid protists

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SUMMARY

Flower bud anomalies in *Olea europaea* L., 'Santulhana' and 'Conserva de Elvas' begin as very small microscopic lesions associated with amoeboid bionts, which cause extensive areas of destruction and block flower organ development. In this work, we describe the process of injury in olive flower-buds in parallel with biont development in floral tissues and in the culture medium. Flower-buds were processed for light microscopy (LM) and transmission electron microscopy (TEM). Bionts were isolated from flower-buds in culture medium and processed for LM. Amoeboid bionts in several stages of plasmodial formation, grown in culture medium from olive flower-buds, resembled those observed in sectioned flower-bud tissues. The formation of small plasmodia by the fusion of amoeboid cells and the development of small plasmodia into phaneroplasmodia, suggest the presence of an amoeboid protist of the *Myxogastria* group. On the other hand, sporulation of plasmodia in hay agar culture medium, gave rise to stalked sporangia containing numerous spores. The morphology and dimensions of the sporangia and spores, as well as the characteristics of the amoebae that germinated from the spores, suggest that the protist *Myxogastria* belongs to the genus *Didymium*.

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