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## DISEASE REPORTS

# First report of *Pestalotia subcuticularis* on *Pyrus mamorensis* in Morocco

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*Pyrus mamorensis* Trabut is a Rosaceae endemic in the Mamora forest (north-western Morocco) that can reach 7 meters in height. This tree is commonly named the pear tree of Mamora and its vernacular name is Njache. It is also considered a rare species (Fennane *et al.*, 1998).

A survey done in the Mamora forest in the spring of 2003 and 2004 revealed that 60% of the leaves of *P. mamorensis* had lesions that were of two types. The first type of lesion was central, small (2 to 3 mm), rounded and nearly black. The second was large (10 to 15 mm) peripheral, diffuse and black (Fig. 1).

Infected leaves were examined in the laboratory with a filter-paper technique to detect the fungi associated with the lesions. Washed leaves were incubated in moist chamber for 48 h at  $25 \pm 1^\circ\text{C}$  under continuous light (white fluorescent tubes). Lesions were microscopically examined and the

conidial masses on the sub-epidermal acervuli were inspected. The conidia were taken with a capillary tube and placed on a PDA medium with the same temperature and lighting as above.

After 8 days, the mycelium of the growing colonies was branched, septate, hyaline, and yellowish-white in color. The conidia were fusiform formed of 5 cells,  $20\text{--}29.16 \mu\text{m} \times 5\text{--}7 \mu\text{m}$ . The three central cells were blackish-brown and thick-walled (Fig. 2a). The apical and basal cells were hyaline, fine-walled. The conidia germinated from the second basal cell (Fig. 2b).

On the basal side, the conidiophore length was  $5\text{--}11 \mu\text{m}$ . Two to 5 hair-like appendages (setae) were observed on the apical side, free, not branched, length  $20\text{--}30 \mu\text{m}$ . the conidia with three or four setae were abundant; those with two setae were rare. The fungus was identified as *Pestalotia subcuticularis* Guba (1961). Opportunistic fungi associated with the lesions were a *Cladosporium* sp., *Rhizopus* sp., *Penicillium* sp.

Some other species of *Pestalotia* have been reported in Morocco as infecting other species of *Pyrus*: *P. communis*, *P. funerea*, *P. guepini* and *P. laurocerasi* (Rieuf, 1969).

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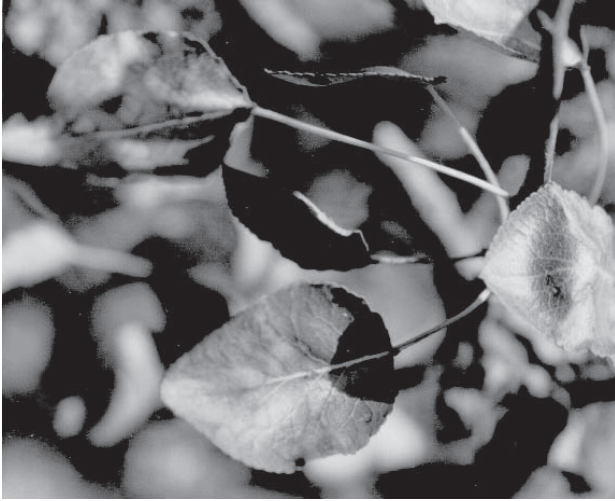


Fig 1. Leaves of *Pyrus mamorensis* infected with *Pestalotia subcuticularis*.

Koch's postulates were verified by inoculating healthy leaves of *P. mamorensis* with *P. subcuticularis* in spring and fall using two techniques. Half of the leaves were inoculated with mycelial disks, the other half with a conidial suspension adjusted to a final concentration of  $10^5$  conidia  $\text{ml}^{-1}$  with sterile distilled water containing 0.05% Tween 20 and 0.5% gelatin. The leaves were placed in 120-mm Petri dishes containing small glass beads and sterile distilled water. Inoculated leaves were kept in the laboratory at  $28 \pm 1^\circ\text{C}$  under black plastic sheeting that was removed after 24 h.

When the leaves were inoculated with the conidial suspension the symptoms appeared after 24 h: the lesions were black, rounded or slightly elliptic and can cover a substantial part of the leaf (75%) (Fig. 3a and b). When the leaves were inoculated



Fig. 2. (a) Conidia of *Pestalotia subcuticularis*; (b) germinated conidia.



Fig. 3 (a, b). Symptoms in leaves of *Pyrus mamorensis* artificially inoculated by conidial suspension of *Pestalotia subcuticularis*.

with mycelial disks, the same type of lesions occurred (9.5 mm diam.). Seven days after inoculation *P. subcuticularis* produced conidia abundantly on the leaves of *P. mamorensis* inoculated both by the conidial suspension ( $11.2 \times 10^5$  conidia  $\text{cm}^{-2}$ ) and by mycelial disks ( $9.7 \times 10^5$  conidia  $\text{cm}^{-2}$ ).

On the leaves in spring, the central lesions appeared more slowly with a smaller size, and were at least faintly rounded and black. Lesions on the periphery, on the other hand, were more extensive, black and diffuse. On the leaves in the fall, symptoms development was faster, with the same lesions as in spring. The fruits of *P. mamorensis* that had been inoculated with the mycelial disks did not present any obvious symptoms.

In periods of drought, *P. mamorensis* is put under stress by human activity and livestock graz-

ing, and attacks by *P. subcuticularis* can be one of the reasons for the declining health of this tree over the long term.

### Literature cited

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