Dieback due to Lasiodiplodia theobromae, a new constraint to cocoa production in Cameroon

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Since the introduction of cocoa (Theobroma cacao) in Cameroon in 1886, the main disease has been phytophthora pod rot. However, since the late 1980s, cocoa orchards have been increasingly affected by an unusual dieback disease. Dieback has been recorded in all of the cocoa producing areas of Cameroon, affecting 100% of cocoa trees at some farms.

Irrespective of age, affected cocoa trees manifest typical dieback symptoms. Leaves on the outer twigs yellow first and the damage may then extend along the whole branch, reaching the main trunk, eventually resulting in tree death. The twigs and branches of diseased trees show internal discoloration with brown streaks in the vascular tissue. White or yellowish exudate from trunks has also been reported. Although sudden widespread wilting and death of cocoa occurs, mature and in some cases progressed throughout the entire cone. Microscopic examination of the affected cones showed developed into oval, greyish white lesions. The affected cones showed mortality occurs throughout the year, symptoms are more severe during fruits remain attached to declining trees for several weeks. Although tree decline over several months, during which time flushes of new growth may recover but declined a few weeks later, reproducing the symptoms observed in the field. In contrast, the un inoculated control plants (PDA plugs only) recovered and remained healthy. L. theobromae was re-isolated from all infected plants.

Lasiodiplodia theobromae is a common, widespread pathogen of tropical woody trees, causing shoot blight and dieback of trees and shrubs and blue stain in timber (Mohali et al., 2005). The fungus was first reported on cocoa in Cameroon in 1895, and has since caused minor symptoms of charcoal pod rot. However, with this new development of severe dieback, similar to that described recently on other tree crops such as mango and kumquat in other countries (Khanzada et al., 2004; Ko et al., 2004), Lasiodiplodia theobromae is becoming a major constraint to cocoa production in Cameroon.

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First report of Phoma exigua as a pathogen of hop in Slovenia

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In August 2005, necrotic lesions on cones and leaves were observed on hop (Humulus lupulus) cvs Bobek, Magnum, and Merkur in the Koroika and Podravje regions of Slovenia. The symptoms on the leaves were initially small circular spots, which later increased in size (1–3 cm in diameter) and developed into oval, greyish white lesions. The affected cones showed reddish-brown necrotic areas on the tips of the branches and shoots, which in some cases progressed throughout the entire cone. Microscopic examination of the affected tissue revealed the presence of a dark greyish-black, striate, ellipsoidal, uniseptate and produced in ascostromatic pycnidia on potato dextrose agar (PDA). Cultures were deposited at the Centraalbureau voor Schimmelcultures (CBS), Utrecht, the Netherlands. Mycelial plugs from isolates CBS 120395 and 120396 on PDA, were inoculated separately on to wounded stems of twenty 6-month-old cocoa seedlings in a greenhouse, to test pathogenicity. After 4 weeks of regular watering followed by 3 weeks water stress, 60% of the inoculated test plants withered and became irreversibly desiccated; 30% recovered as watering resumed but declined a few weeks later, reproducing the symptoms observed in the field. In contrast, the un inoculated control plants (PDA plugs only) recovered and remained healthy. L. theobromae was re-isolated from all infected plants.

Pathogenicity tests were performed by spraying leaves and mature cones of detached lateral shoots (cvs Bobek and Merkur) with a spore and mycelial suspension (10⁶ CFU per mL). Four bunches, each containing two lateral shoots, were used for each treatment. Bunches were covered with plastic bags and incubated in a growth chamber at 20°C with relative humidity of 80%. The first lesions developed on leaves and cones of both cultivars 6 days after inoculation. Controls sprayed with distilled water showed no symptoms. The fungus was re-isolated from the lesions on leaves and cones. This is the first report of P. exigua causing severe damage to the leaves and cones of hop.

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References