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#### CHEMICAL CONTROL OF COCOA DIEBACK DISEASE IN CAMEROON

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#### ABSTRACT

Because of a significant increase of cocoa dieback incidence in Cameroon, cocoa farmers are starting to demand help in controlling this problem. Cocoa die back and desiccation are often caused by a complex of pathogens. *Lasiodiplodia theobromae* is the pathogen most frequently isolated from affected cocoa trees (>50%) in Cameroon. Isolations realized from mirid feeding lesions on cocoa branches, also raised the question of a possible relationship between mirids and *L. theobromae*. In this study, six fungicides have been tested *in vitro* with respect to their ability to control *L. theobromae*. The results showed that Banko-Plus (chlorothalonil + carbendazine) and Plantineb (80% maneb) were the most efficient with percentage inhibition of radial growth of 100 and 70%, respectively. The efficacy of both these fungicides was subsequently tested in the field. Field trials took place in the CAOBISCO plot near IRAD, Nkolbisson. In the 2007 season, cocoa trees were treated with the selected fungicides: Banko plus (seven treatments) and Plantineb (11 treatments). These two treatments were compared with the following treatments: i) Callomil Plus 72 WP (metalaxyl + copper oxide, seven treatments), habitually utilized by cocoa farmers to control *Phytophthora megakarya*, ii) Gawa (two treatments), an insecticide habitually used for mirid control and iii) absolute control (non treated cocoa trees). Each treatment was applied to two plots of 25 trees each. Trees were treated during July till December 2007. Data collection took place from July till December in 2007 and 2008. Data collection consisted of counting the number of healthy and wilted-desiccated branches of each cocoa tree. Once a month, from each tree that showed signs of wilt, a single branch was collected. These branches were taken to the laboratory and checked for the presence of pathogens associated with cocoa dieback, and in particular the presence of *L. theobromae*. Analysis of the results showed that the degree of infestation for the absolute control was 5.94%, which was significantly ( $P<0.05$ ) higher compared with all other treatments. The Gawa treatment had the lowest degree of infestation and showed a control efficacy of 54.6%. Banko plus, Plantineb and Callomil controlled cocoa dieback by 51.3, 44.6 and 42.2%, respectively. These results also suggest that there might be a relationship between mirid attacks and cocoa dieback although the exact nature of this relationship remains to be elucidated.