

Report for World Cocoa Foundation

Formation of a Black Pod Working Group

Black Pod disease caused by *Phytophthora* species is responsible for global annual yield loss of more than 450,000 tonnes of cocoa and is a serious limiting factor reducing farmers' productivity and income. To help understand the limitations in current methods of studying the disease and in identifying sources of resistance, and for developing the tools necessary for breeding new and more resistant cocoa varieties, Mondelēz International sponsored a knowledge exchange event for scientists working on Black pod disease. This event was hosted by the Cocoa Research Institute of Ghana and organised by USDA-ARS and CATIE, from 21st to 25th October 2013 with the logistical support from the World Cocoa Foundation. Expert scientists from Ghana, Côte d'Ivoire, Nigeria, Cameroon, and Togo attended as well as representatives from USDA-ARS and the Cocoa Research Centre University of West Indies.

A major outcome from the event was agreement on the use of standardised methods for scoring Black Pod disease resistance using four inoculation tests. It was confirmed that although there are published protocols for conducting these tests, different laboratories and scientists performed the tests in different ways. Variation in the execution of protocols may influence the outcome of the tests. During the one-week event, scientists visited cocoa plots to observe different types of diseases in West Africa and the various stages of their pathological development. This was particularly instructive as symptoms of *Phytophthora palmivora* and *Phytophthora megakarya* were observed and visual differentiation between diseases by the two species noted. Other less common fungal diseases, such as warty pod rot and charcoal rot, were also observed. The group shared practical experience on laboratory procedures for isolation, culturing, and inoculation with *Phytophthora* isolates. Scoring of disease severity allowed the comparison of visual methods with digital image analysis software.

The next steps for the group include: the formation of a working group on *Phytophthora* under the auspices of the International Permanent Working Group for Pests and Diseases (INCOPED); development of Standard Operating Procedures and validation of their robustness and usefulness in predicting field resistance. The working group will aid the development of new disease resistant varieties in two ways: first, through consistent validated tests in each laboratory to identify and distinguish levels of disease resistance for various clones in local and international collections; secondly by allowing the exchange of information between laboratories in a standardised format for the screening of the disease. Through this approach, parental materials could be selected for breeding programmes across the whole cocoa community. We invite all cocoa workers interested in *Phytophthora* diseases to visit the website and register their interest.

The INCOPED *Phytophthora* webpage can be found at www.incocoa.org/incoped/phywg_about.php.

Report submitted by Nicholas Cryer on behalf of Mondelēz International.