

Confirmation of *Xanthomonas axonopodis* pv. *manihotis* Causing Cassava Bacterial Blight in Ivory Coast

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Xanthomonas axonopodis pv. *manihotis*, the causal agent of cassava bacterial blight (CBB), was reported in Ivory Coast in 1979 ([Notteghem et al. 1980](#)). Since then, there have been no studies to characterize the pathogen. To confirm the presence of CBB using molecular tools, we surveyed cassava fields in the Yamoussoukro District in July 2013. Symptoms of CBB were observed on cassava plants including angular leaf spots on the leaf surface, wilting leaves, and exudates on stems. The causal agent was identified as *Xanthomonas axonopodis* pv. *manihotis*. Single, white colonies were isolated on nonselective LPGA medium. Diagnostic PCR ([Verdier et al. 1998](#)) was performed on DNA extracted from single colonies for pathovar identification. The expected DNA fragment (898bp) was obtained from all the strains while asymptomatic tissues and water controls gave no fragment. Pathogenicity was confirmed by inoculating leaves and stems of 1-month-old cassava plants as follows. Bacteria grown on LPGA plates and adjusted to 1×10^8 CFU/ml were deposited on cassava leaves and into stems with a syringe. Eight days to one month after incubation, inoculated plants showed water-soaked lesions on leaves, leaf wilting, and stem exudates corresponding to symptoms initially observed in cassava fields. Symptomatic leaf tissues were ground and plated on LPGA medium, resulting in white colonies with typical *Xanthomonas* morphology that were confirmed as *X. axonopodis* pv. *manihotis* by diagnostic PCR thus fulfilling Koch's postulates. Identity of twelve representative strains was confirmed by comparison of partial sequences of the housekeeping genes *gyrB* and *ropD* with reference strains *X. axonopodis* pv. *manihotis* ICMP5741, CFBP1944, CFBP6544, and CFBP1865. Partial sequences were amplified and sequenced using *gyrB* primers XgyrPCR2F/Xgyrrsp1 ([Parkinson et al. 2007](#)), *rpoD* primers RPODF/RPODR ([Hajri et al. 2011](#)), and internal primers designed for this study (rpoD_17F, ATCTGACCTACGCCGAAGTC; rpoD_1005R, CTGCTGCTCGGAGATGATCT). All strains were identical in each of the two loci and matched with 100% similarity to *X. axonopodis* pv. *manihotis* reference strains thus confirming that they belong to the pathovar *manihotis*. Sequences were deposited in Genbank

under the accession numbers KP265372 to 265383 (*rpoD*) and KP265384 to 265395 (*gyrB*). To our knowledge, this is the first confirmed characterization of *X. axoponodis* pv. *manihotis* in Ivory Coast using molecular tools. The presence of CBB needs to be considered since cassava cultivation is expanding in different regions of the country.

References:

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