

Screening of cocoyam (*Xanthosoma Sagittifolium* (L) Schott) for disease resistance under two contrasting environments

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Abstract. Sixty-six (66) accessions of cocoyam germplasm collection held by the Plant Genetic Resources Center at Bunso, Ghana were screened for their reaction to the common cocoyam diseases under two different soil moisture conditions. One set was grown under rain fed conditions on the upper slope while the second set was grown at the bottom of the slope where the water table was high. The sites were otherwise similar in soil characteristics, such as pH, organic matter content, fertility and texture. The disease incidence and severity were different in the two environments. The percentages of germplasm attacked by various diseases under the upland conditions were: dasheen mosaic virus 18.2%, bacteria leaf necrosis 36.4%, Phytophthora leaf blight

84.9% and cocoyam root rot blight 77.2%.

Under the valley conditions, the disease incidence was dasheen mosaic virus (84.9%), bacterial leaf necrosis (62.1%), Phytophthora leaf blight (9.10%), Cladosporium leaf spot (1.5%), Leptosphaerulina leaf spot 1.5% and Concentric leaf spot (51.5%). The devastating attacks of the Cocoyam root rot blight complex and Phytophthora leaf blight diseases under the upland conditions resulted in no economic yield. However, there was reasonable yield of cormels in the lowland conditions where soft rot complex was not detected and Phytophthora leaf blight was mild.