

Distribution and Occurrence Viruses infecting Common Bean (*Phaseolus vulgaris* L) in Western Kenya

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Abstract

Common bean (*Phaseolus vulgaris* L) is the most widely grown pulse and a major food security crop in East Africa, including Kenya. It is the main source of protein and starch for over 300 million people in East Africa and Latin America. Despite the enormous importance of beans to East Africans, bean production in Kenya remains relatively low with an average yield of 585 Kg/ha compared to Ethiopia and Rwanda with yield of 1888 kg/ha and 913 kg/ha respectively. In Kenya including Western Kenya, bean productivity is declining due to several biotic and abiotic constraints including several viral diseases. Management of these viral diseases requires information on types, distribution, incidence, occurrence and severity, which is currently limited. It has been reported that the most important viruses of common bean in Kenya are *Bean common mosaic virus* (BCMV) and *Bean common mosaic necrosis virus* (BCMNV) though other viruses have been documented and known to exist. There is inadequate information about the occurrence and distribution of these viruses in Western Kenya which makes management of these diseases difficult. This study was therefore commissioned to document the different types of viruses infecting beans crop and determine their incidence and severity through a comprehensive disease diagnostic survey. Results showed that the average viral disease incidence per county was Nandi (42.8%), Kakamega (29.3%), Vihiga (12%) and Bungoma (9%). Additionally, viral disease severity Nandi (42.8%), Kakamega (29.3%), Vihiga (12%) and Bungoma (9%). The most dominant virus which occurred in all the counties surveyed was Bean Golden Mosaic Virus (BGMV) with disease incidence of 100%. Bean Yellow Mosaic Virus (BYMV) was detected in leaf samples from Vihiga County. These results seem to indicate that BGMV could be upstaging BCMV and BCMNV in the region. The increased knowledge of common bean virus diseases in Western Kenya is expected to result into informed development of strategies for management of the diseases and thus increased production, which in turn has implications on nutrition and income.

Keywords; BGMV, BYMV, Viral Disease Incidence, Viral disease severity