Karuri, H.W., Amata, R., Amugune, C.N. and Waturu, C.N. 2013. Reproduction of root knot nematode (*Meloidogyne icognita*) on Bt cotton expressing Cry1Ac and Cry2Ab2 protein. Journal of Applied Biosciences 69:5487-5495.

ABSTRACT

Objective: The sedentary endoparasite Meloidogyne incognita is an important plant parasitic nematode that infects cotton causing significant yield losses. The objective of this study was to evaluate reproduction of *M. incognita* in Bt cotton (06Z604D), isoline (99M03) and HART 89M (local non-Bt cotton cultivar) under greenhouse conditions.

Methods and results: Plant height, number of squares/bolls, fresh shoot and root weight were determined before root knot nematode (RKN) screening at 90 and 180 days after planting (DAP). Galling severity, egg mass index, number of juveniles and the presence of Bt protein in roots and soil were also determined. The ELISA detected Bt protein in soil and roots of Bt cotton but not in HART 89M and isoline plant tissues and soil. Reaction of Bt cotton and isoline to M. incognita was different with the transgenic cotton being more susceptible to RKN. HART 89M was more resistant to RKN infection compared with the isoline.

Conclusion and application of findings: The study has demonstrated that Bt cotton (06Z604D) is susceptible to *M. incognita*. The results indicate the importance of integrating nematode management practices such as the use of organic amendments and nematicides with other cultural practices in future Kenyan Bt cotton agroecosystems.

Keywords: *Bacillus thuringiensis*, Biosafety, root knot nematode, cotton