

Abstract

Iris yellow spot virus (IYSV) vectored by *Thrips tabaci* threatens profitable onion production in eastern Africa. Host plant resistance is considered to be the first line of defence against insect-transmitted virus diseases. Hence, information on resistance to IYSV and *T. tabaci* among common onion cultivars in Kenya is crucial for the development of integrated pest management strategies. This study evaluated the resistance to thrips and IYSV among widely grown onion cultivars in Kenya, viz. Red Pinoy, Red Creole, Bombay Red, Green Bunching and Texas Grano, over two growing seasons. Straw-coloured, diamond-shaped necrotic lesions typical of IYSV infection were observed 2 weeks after transplantation. Observations on thrips numbers per plant, IYSV disease incidence and severity, and virus intensity were undertaken to assess the resistance. Varieties differed significantly with respect to both IYSV disease incidence and thrips numbers per plant from fourth week to physiological maturity. Red Pinoy, Green Bunching and Red Creole were highly susceptible to the virus and thrips, while Texas Grano and Bombay Red were moderately resistant. There were significant differences among the varieties with regard to IYSV intensity, with the highest and the least virus intensity positively correlated with disease severity being recorded in Red Pinoy and Texas Grano, respectively. Among the varieties, Texas Grano produced the highest yield in both seasons, while Red Pinoy produced the least. Hence, Texas Grano and Bombay Red could be recommended as moderately resistant cultivars to thrips and IYSV to be grown in Kenya for markets where pungency is not preferred and preferred, respectively. Regions with high levels of thrips population and IYSV infestation are not suitable for the cultivation of Red Pinoy.