

## Abstract

Potato (*Solanum tuberosum* L.) is a major tuber crop in Kenya, whose productivity is heavily impaired by bacterial wilt disease, caused by *Ralstonia solanacearum* (Smith). Existing management strategies have not been effective, owing to the diversity and robustness of the pathogen and variation in the host range. The objective of this study was to evaluate the effectiveness of intercropping on the incidence of bacterial wilt and yield of potato in Kenya. A field experiment was conducted in four potato-growing counties, namely; Nyandarua, Nakuru, Bomet and Bungoma in Kenya. Treatments included intercropping with spring onion (*Allium fistulosum* L.); garden pea (*Pisum sativum* L.); and cabbage (*Brassica oleracea* var. capitata L.). Treatments also included a pure stand of potato as the control. Generally, intercropping had a significant suppressive effect ( $P < 0.05$ ) on the incidence and severity of bacterial wilt disease. Intercropping potato with spring onion, in particular, had the highest disease suppressive effect, followed by intercropping potato with cabbage; and lastly by potato with garden pea. Accordingly, potato-onion intercrop recorded the highest potato tuber yield (12.9 t ha<sup>-1</sup>), while the potato pure stand recorded the lowest tuber yield (7.9 t ha<sup>-1</sup>). Bacterial wilt disease incidence positively correlated with disease severity ( $r = 0.931$ ;  $P < 0.05$ ). In contrast, the disease incidence and severity negatively correlated with tuber yield. In terms of Land Equivalent Ratio (LER), the highest value (1.64) was with potato-onion intercrop; and the lowest (1.35) with the potato-garden pea intercrop.