

Abstract

Late blight caused by *Phytophthora infestans* is a major constraint to potato production. Inadequate control of the disease has often resulted in potato yield losses. We assessed the efficacy of fungicides, phosphoric acid and stinging nettle extract combinations for late blight control at two locations in Kenya. Disease severity, relative area under disease progress curves (RAUDPC), pathogen lesions and tuber yield were quantified during the 2008 and 2009 cropping cycles. The application of metalaxyl alternated with phosphate resulted in the greatest suppressive effects on late blight. The average late blight severity ranged from 3.5 to 34% in 2008 and 4.7 to 50% in 2009 at Tigoni location. RAUDPC for the same location ranged from 5 to 40% and 5 to 50% in 2008 and 2009, respectively. Similar levels of late blight severity were recorded at Marimba location in both years. Lesion growth and pathogen lesion numbers on potato plants differed significantly ($p < 0.05$) among treatments. Fungicides, phosphoric acid and stinging nettle extract varied in late blight control. Potato tuber yield varied among treatments. Phosphoric acid treatment had significantly ($p < 0.05$) greater tuber yield compared to metalaxyl at both locations. Field plots treated with plant extracts from stinging nettle resulted in the lowest tuber yield compared to other treatments with the exception of the untreated control. Fungicides, phosphoric acid, stinging nettle extract and their combinations can be readily effective in the suppression of late blight severity and pathogen lesions with moderate increases in tuber yield