

EVALUATION OF FIELD RESISTANCE STABILITY OF POTATO CULTIVARS TO LATE BLIGHT

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Introduction

Potatoes are an important source of food, employment and income in developing countries.

Potato late blight has induced significant yield losses in the past and is still a major threat to potato production.

Chemical control is expensive, short durational and has health hazards while biological control is in its infancy for this disease.

The aim of this research was to determine the field resistance stability of potato cultivars to late blight.



Method

Trial was conducted at University of Nairobi field station located at Latitude -1° 16' 0S, Longitude 36° 43' 0E and has an elevation of 1826 masl.

Late blight was initiated through natural infection. Field plots were assessed for late blight severity by visual rating based on percent leaf area blighted using a scale of 0% to 100% where 0% = no disease; and 100% refers to total foliage damage

11 Varieties and two Clones were studied at Kabete in 2010 long rain and 2011 long rain cropping seasons.

Foliar late blight resistance was assessed on the basis of relative area under disease pressure curve (RAUDPC)

Results

Cultivars Kenya Karibu, Kenya Mpya, Kihoro and Kenya Sifa had significant higher resistance to foliar late blight.

Cultivars Arka and Desiree were most susceptible to late blight in the two seasons with significantly lower resistance.

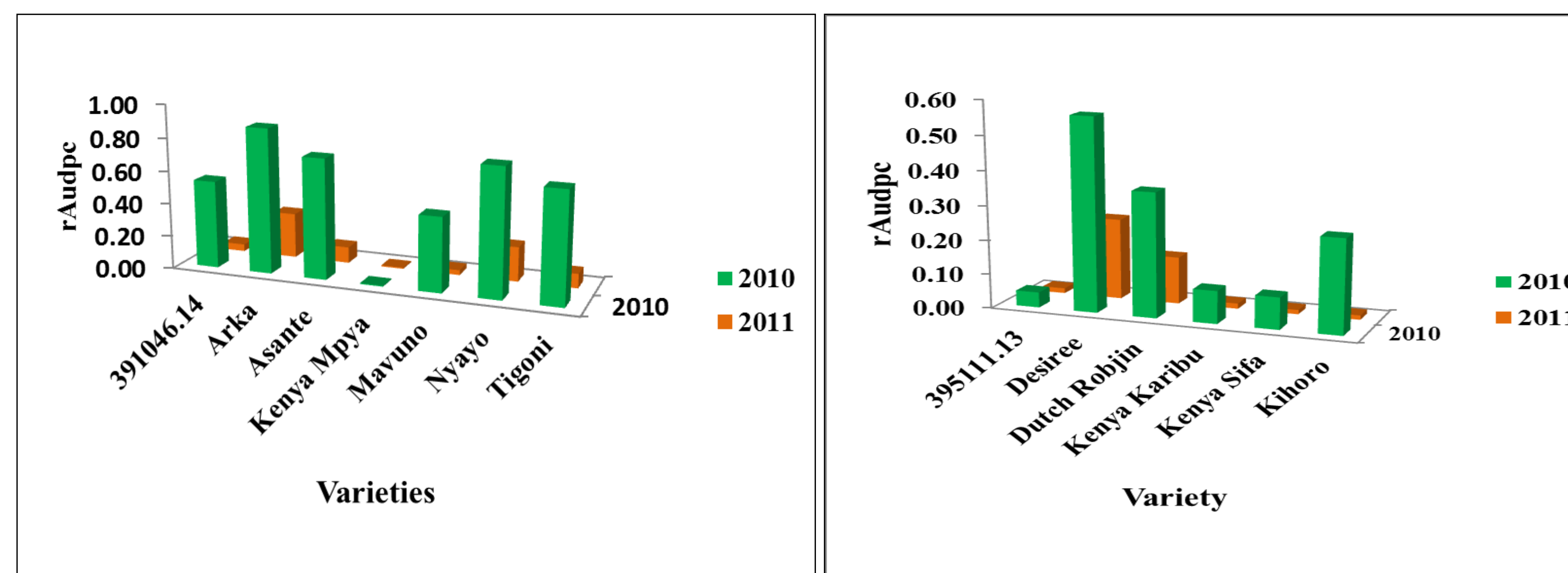


Figure 1 and 2. Graph of rAudpc of different potato cultivars in two different seasons

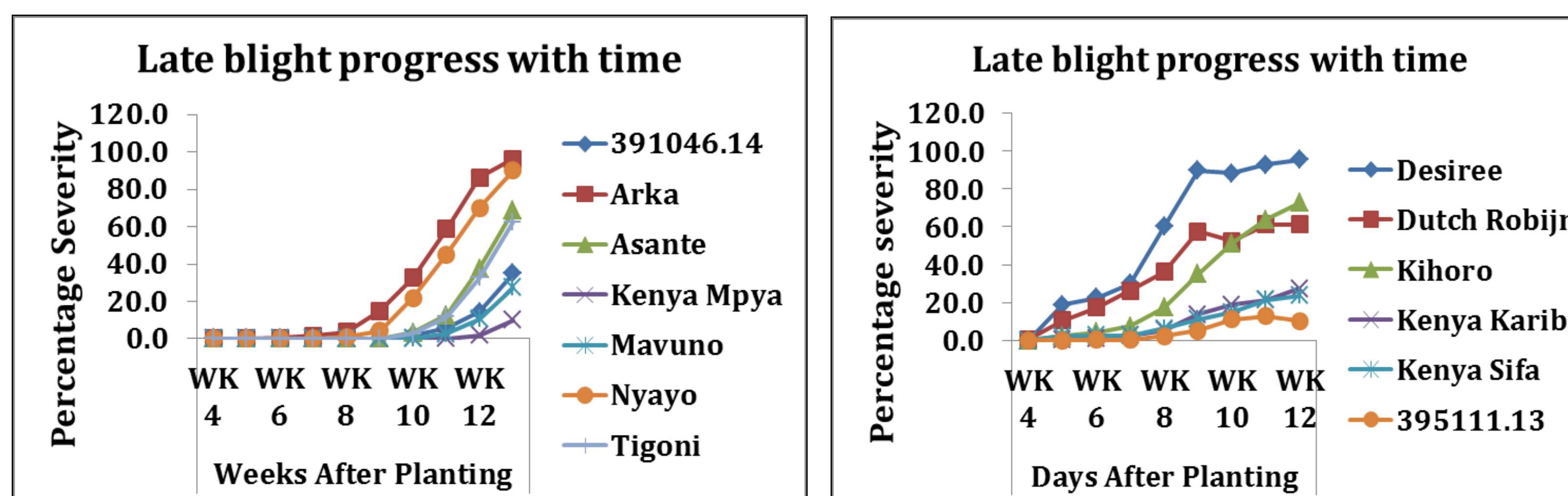


Figure 3 and 4. Graph of rAudpc of different potato cultivars in two different seasons



Resistant cultivars shows a slow progress of disease while the most susceptible cultivars show a higher rate of disease progress

Conclusion

The most effective and environmental friendly way to prevent widespread devastation by late blight is to incorporate natural resistance in potato cultivars.

The resistance levels of these genotypes can be exploited directly in production or indirectly in conventional breeding to improve potato genotypes at desirable level.

Use of resistant varieties can decrease the source of inoculum significantly .

References

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