Sub-theme:

Pest Surveillance in Phytosanitary Systems

Title:

Bacterial Wilt in Potato: Disease Prevalence, Incidence and Severity in Kenya

Presented by:

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Introduction

- Irish potato (*Solanum tuberosum* L) is 3rd highly consumed food crop after wheat and rice but the leading root & tuber crop globally.

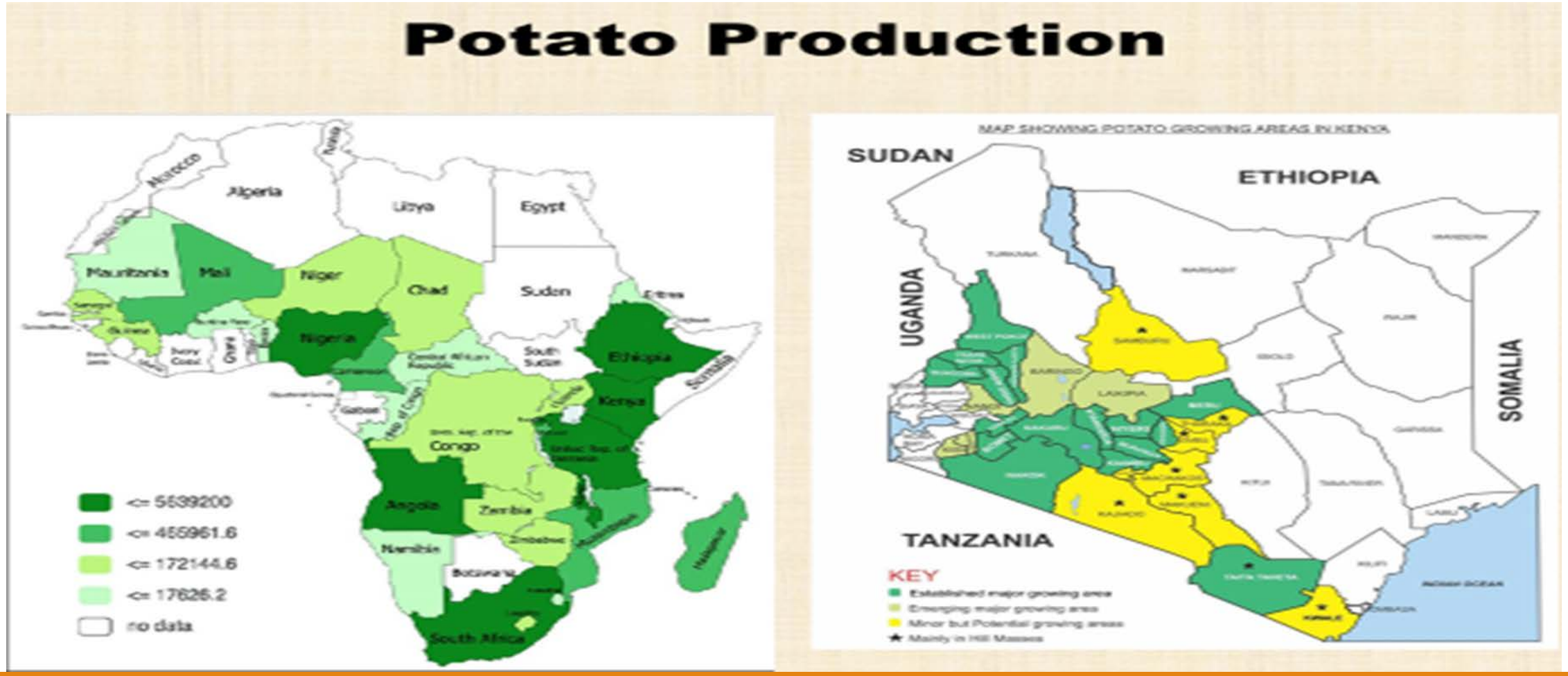
- In Kenya, it is the second most important staple food crop after maize.

Bacterial wilt Disease

- This is the most destructive disease due to its wide geographic distribution, aggressiveness and extensive host range.

- It constrains production of economically important crops:- vegetables, fruit, flower and cash crops resulting in heavy losses on farmers' fields.

Introduction cont’



Problem Statement

- Bacterial wilt constrains production of many economically important crops such as Irish potato resulting into heavy losses on farmers fields (Krishnappa *et al*., 2012).

- This is because the pathogen has a wide geographic distribution, aggressiveness and extensive host range.

- The number of new strains continues to increase significantly enhancing the threat posed by the pathogen (Krishnappa *et al*., 2012), whereas the extend of its spread in Kenya has not been fully documented in terms of disease prevalence, incidence and severity.

Justification

- Presently, bacterial wilt caused by *R. solanacearum cause great* economic losses posing a serious food security problem.
- Further its wide host range has a direct impact on the biodiversity.
- The challenge is that the prevalence, incidence and severity of this disease on potato in Kenya has not been fully researched and documented.
- This research shall help to will minimize losses due to bacterial wilt disease and contribute to yield increase on farm.

Objective

- To determine the :-

I. prevalence

II. incidence

III. severity of bacterial wilt disease in potato cultivars grown in the major potato growing regions of Kenya.

Methodology

Study Area

- Surveys were done in ten major potato growing counties of Kenya, namely: Meru, Nyandarua, Kericho, Nakuru, Bungoma, Uasin Gishu, Elgeyo Marakwet, Baringo, Trans Nzoia and Kiambu counties.

- The study was conducted between the month of October and December 2020 (short rain season) when the crop was at flowering stage.

- A total of 100 farms were randomly sampled in the ten counties; five farms per sub-county, two sub-counties per county

Methodology cont'

- Farms in each sub-county were randomly selected at intervals of 3-5 kilometers.
- In each farm, 10 rows of about 100 plants were randomly selected and wilt disease identified using the procedure described by French and Martin (1985).
- Disease prevalence was based on the number of potato farms with bacterial wilt expressed as a % of the total number of fields assessed.
- Bacterial wilt incidence was based on the number of plants showing symptoms expressed as a % of the total number of plants observed (James, 1974).
- Disease severity was done by recording on severity score as described by Horita and Tsuchiya (2001) as 1= no symptoms, 2= top young leaves wilted, 3= two leaves wilted, 4= 4 or more leaves wilted and 5= plant died.

Results

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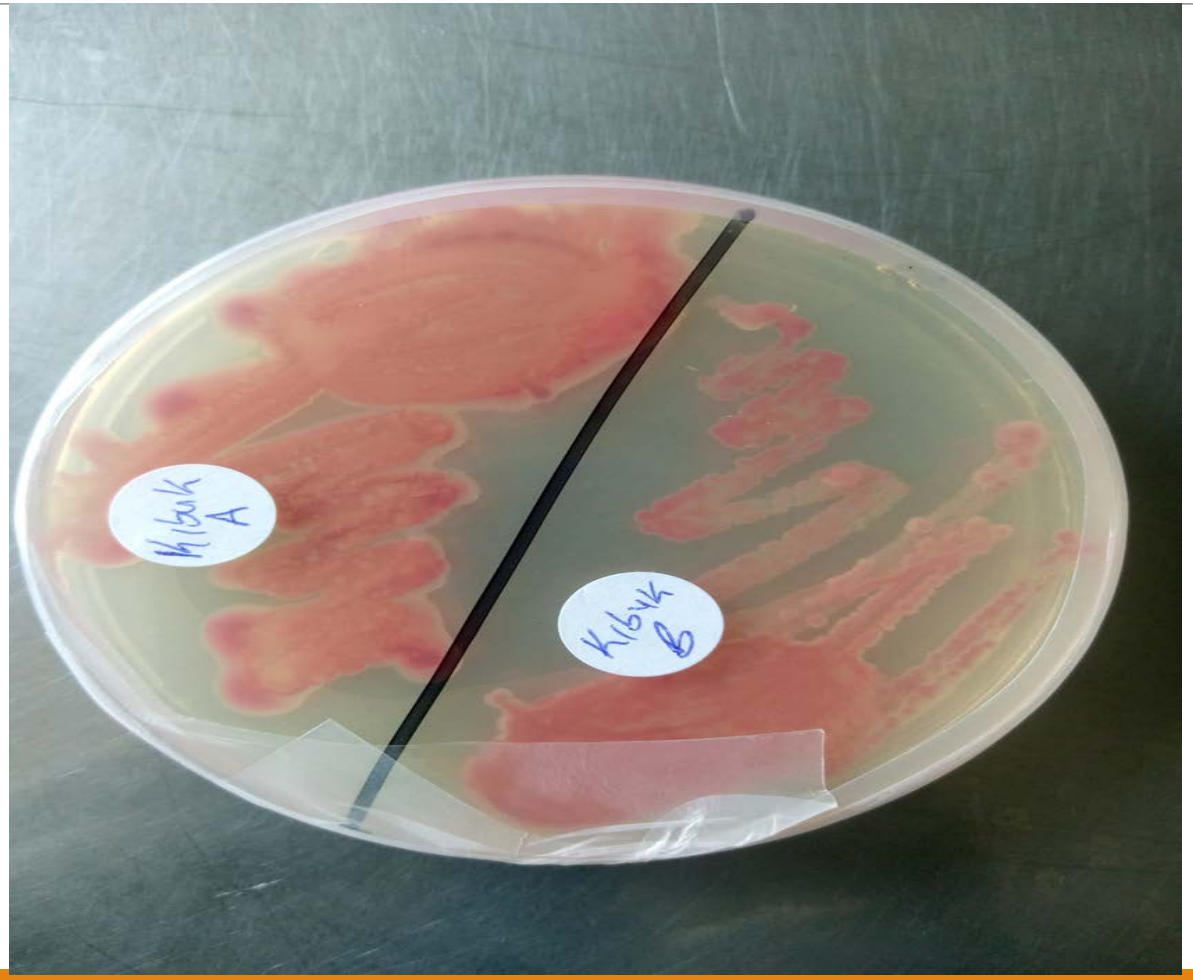

Conclusion

Work in progress

Recommendations

Not available

Acknowledgements

Theme: *"Enhancing Phytosanitary Systems for Healthy Plants, Safe & Sustainable Trade"*
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