



*Enhancing Phytosanitary Systems for Healthy
Plants, Safe & Sustainable Trade”*



INTERNATIONAL YEAR OF
PLANT HEALTH
2020

Sub-theme:

Pest Surveillance in Phytosanitary Systems

Title:

Incidence and Distribution of Cassava Mosaic and Cassava Brown
Streak Diseases in Western Kenya

Presented by:

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Introduction

- Cassava (*Manihot esculenta* Crantz) belongs to the *Euphorbiaceae* family and the genus *Manihot*.
- Number one root crop followed by yam and sweetpotato (FAOSTAT 2017).
- Used as food ,feed and industrial purposes(Chikoti *et al.*, 2015).
- Propagated through stem cuttings.



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Introduction cont'

- Pests and diseases are the major cassava biotic stress.
- CMD and CBSD are the two most economically important viruses in cassava.
- Result in losses worth more than US\$1 billion every year (IITA, 2014).
- Vectored by whitefly (*Bemisia tabaci*).
- Cassava production is challenged by lack of suitable varieties with farmer preferred traits

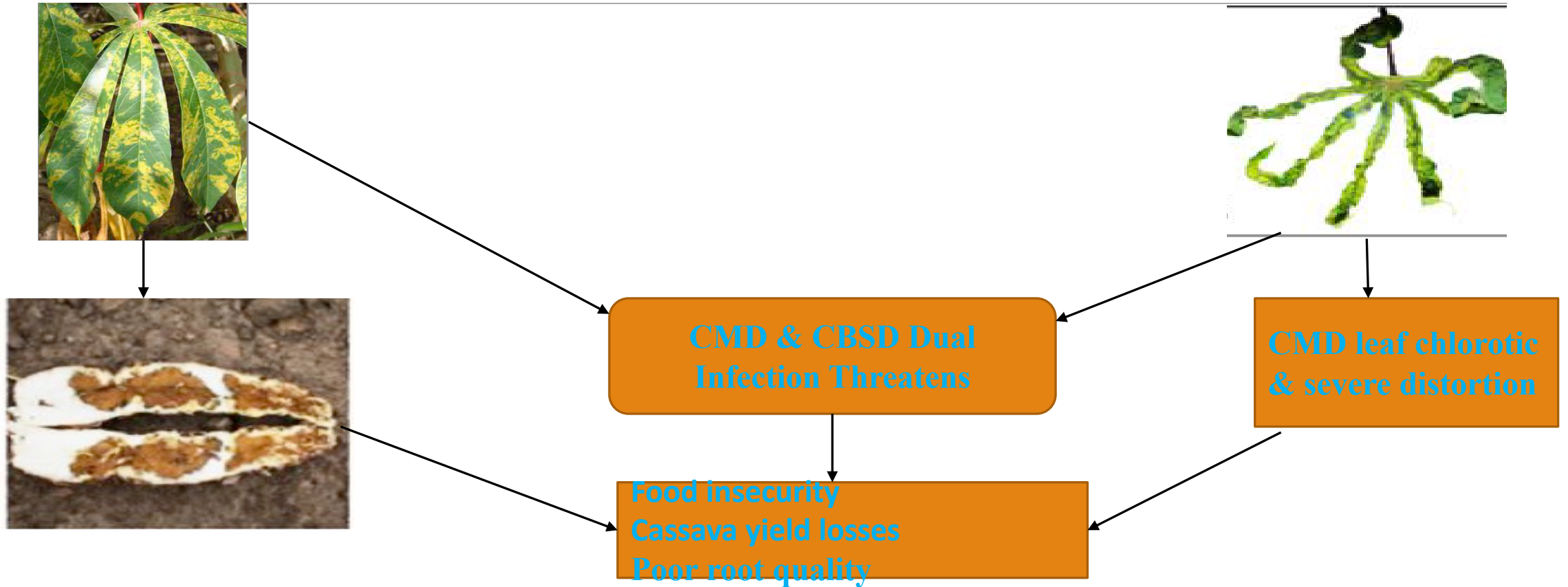


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Problem Statement





Justification

- Cassava has a great potential to sustainably change African economic development and improve income-earning for rural farmers.
- To tap this potential, cassava productivity must be improved by addressing the main viral diseases.



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Objective

- To determine Incidence and Distribution of Cassava Mosaic and Cassava Brown Streak Diseases in Western Kenya.



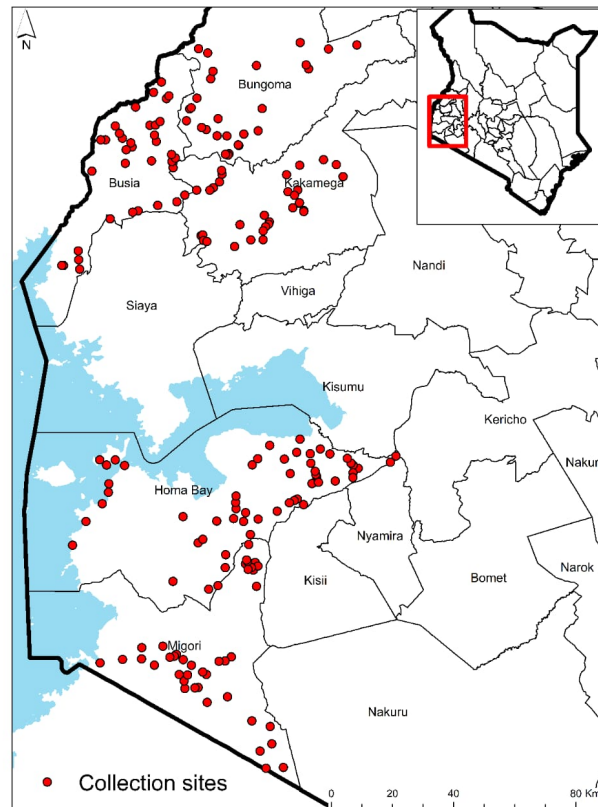
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Methodology

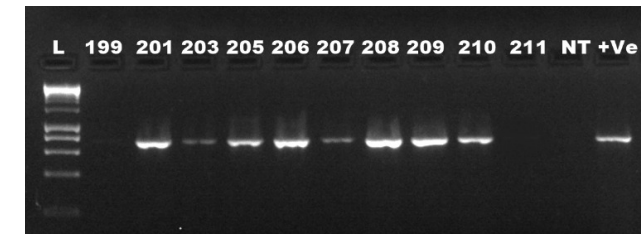
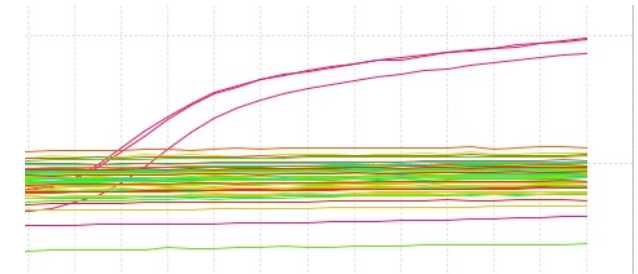
- Survey in 5 counties
Kakamega, Bungoma, Busia, Migori and Homabay.
- 201 household were interviewed
- 255 stakes of landraces collected





Methodology cont'

- Collected stakes planted in pots at KALRO Kakamega and KEPHIS PQBS.
- After sprouting leaves collected for RNA extraction and DNA extraction (Lodhi *et al.*,1994).
- PCR-CMD; ACMV & EACMV Primers ; (Alabi *et al.*,2008 and Fondong *et al.*,2000)
- qPCR- CBSD;CBSV & UCBSV Primers; (Abarshi et al.,2012).
- 59.8% of landraces CMD positive
- 22.3%of landraces CBSD Positive



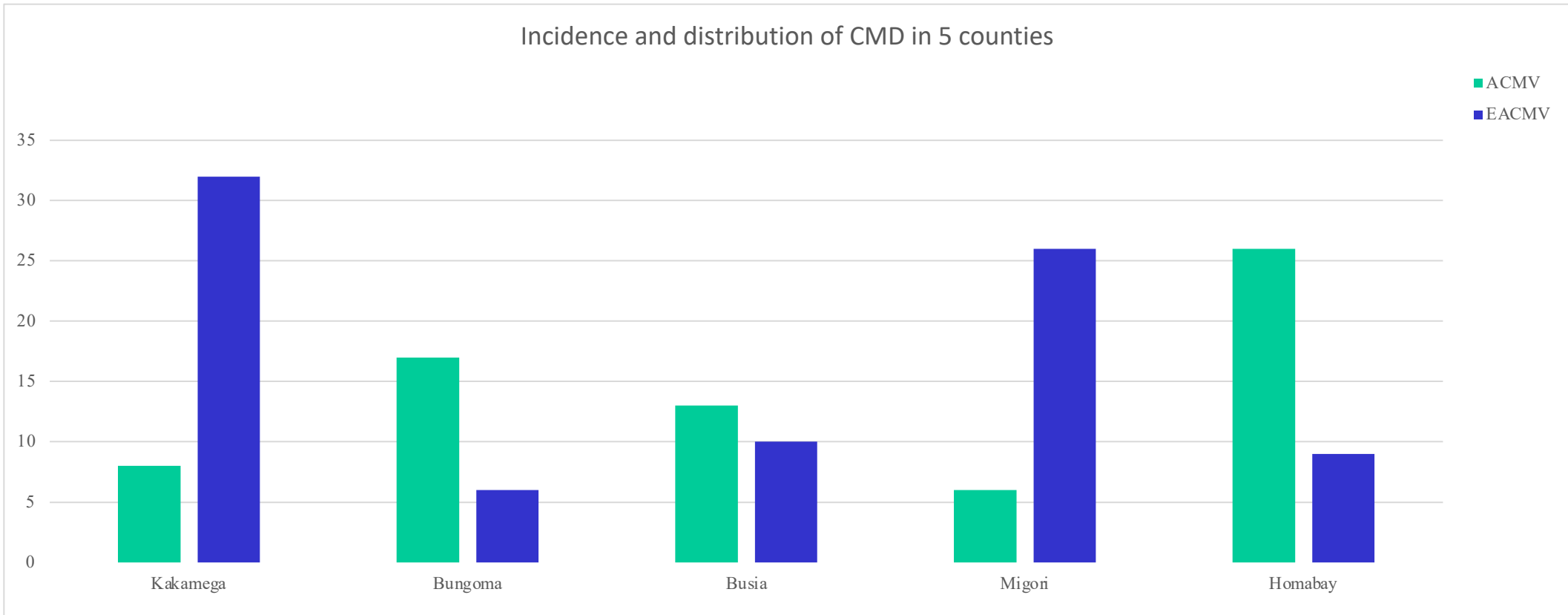
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Results cont'



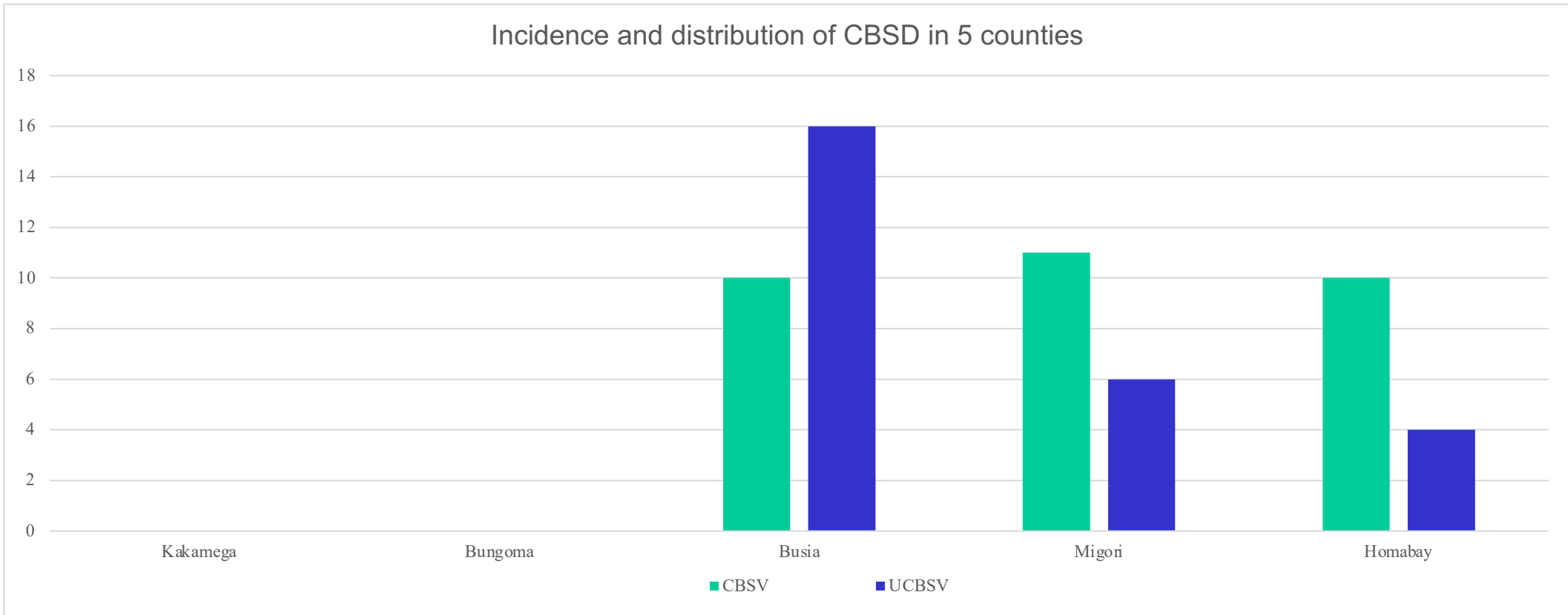
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Results cont'



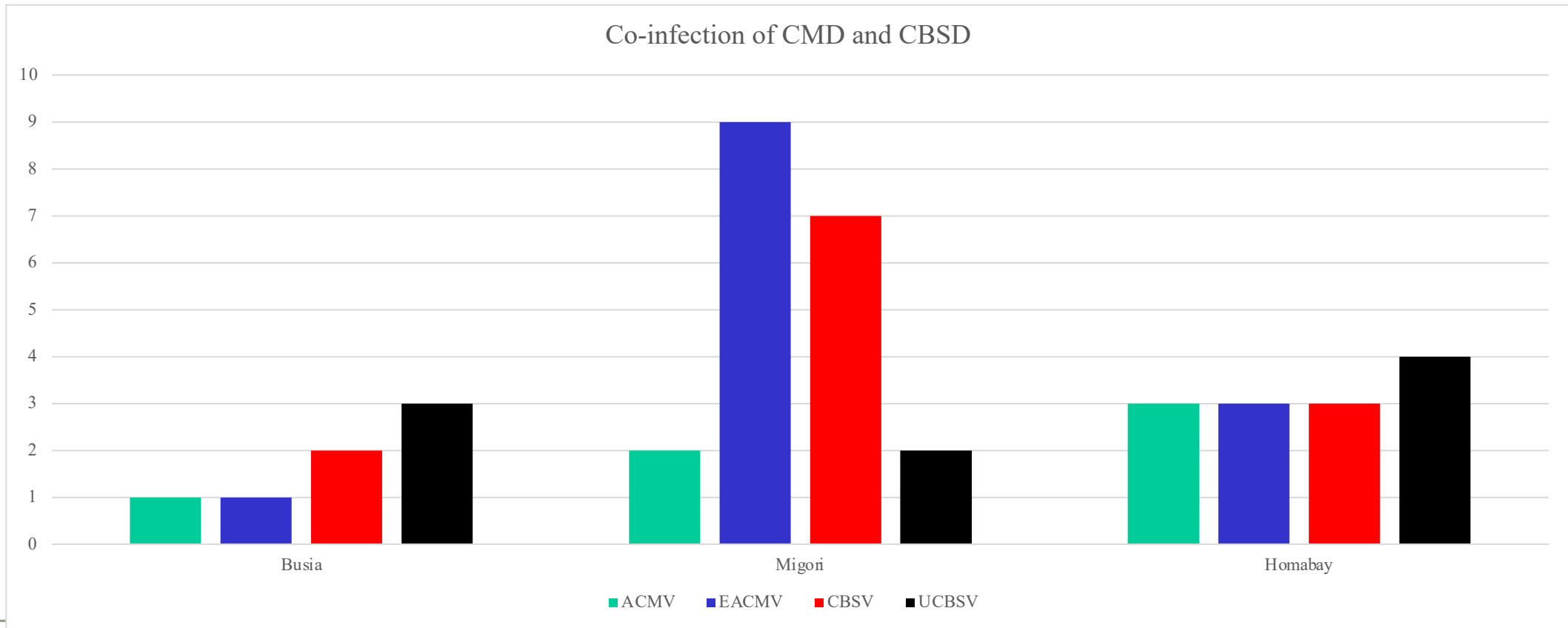
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Results cont'



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Conclusion and recommendation

- CMD and CBSD are wide spread in the five counties
- Need for Farmers to access clean/virus free planting material.
- Need to have cultivars with dual resistance with CMD and CBSD that have farmers preferred traits



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