Alliance

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Establishing sustainable solutions to cassava diseases in mainland Southeast Asia

Optimize agronomic practices (variety, density, fertilizer) for the economic production of both cassava roots and clean planting material in different agro-ecological and value chain contexts for the development of sustainable farmer seed producers.

Agronomy

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Introduction

- In the last 5 years, the cultivated area increased from 0.65 million ha in 2018 to 0.75 million ha in 2022
- Production also increased from 13 million ton in 2018 to more than 14 million ton in 2021 and 2022
- However, yield decrease slightly from 21.14 ton/ha to 19.96 ton/ha in 2022

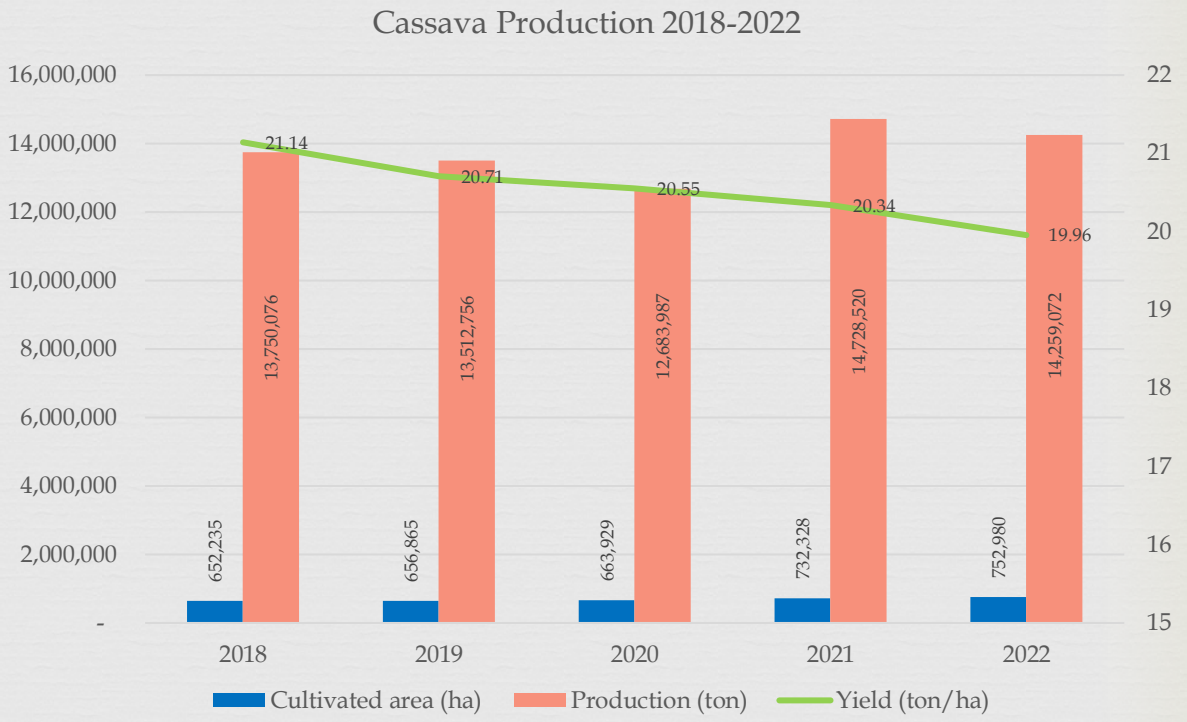


Figure 1: Cassava production in Cambodia 2018-2022

Source: MAFF report 2018-2022

Project Information

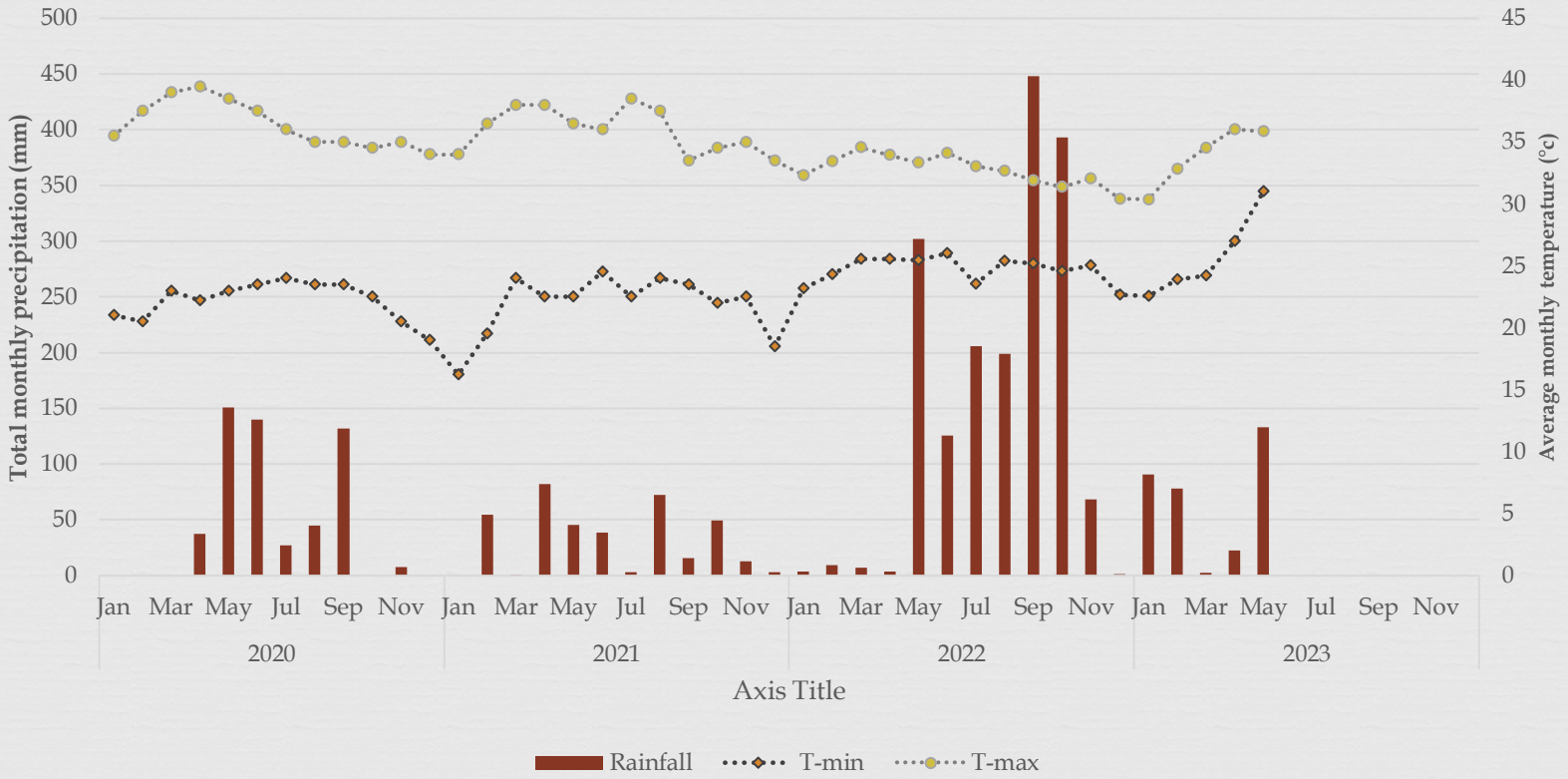
Project title: Establishing sustainable solutions to cassava diseases in mainland Southeast Asia

Project duration: 3 years (2020-2023)

Project target area: Cambodia, Vietnam and Laos

Implement organization: General Directorate of Agriculture (GDA) (DoIC & DPPSP)

Weather information (2020-2023)



Plant density trial (2020-2022)

Objective of experiment:

- Determine optimum plant spacing and
- fertilizer rate for multiplication

Plant density trial (2020-2022)

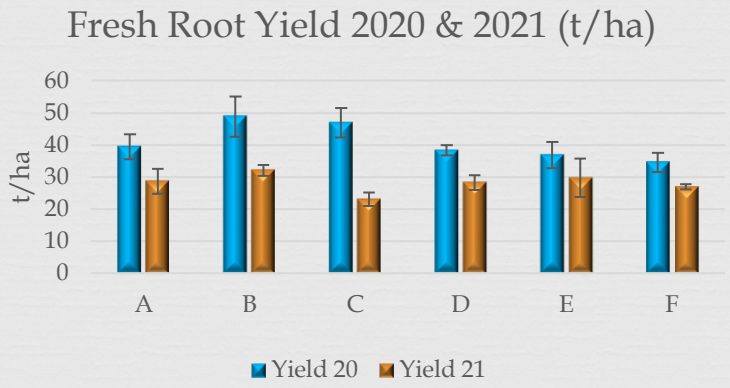


Figure 4: Fresh root yield 2020 &2021

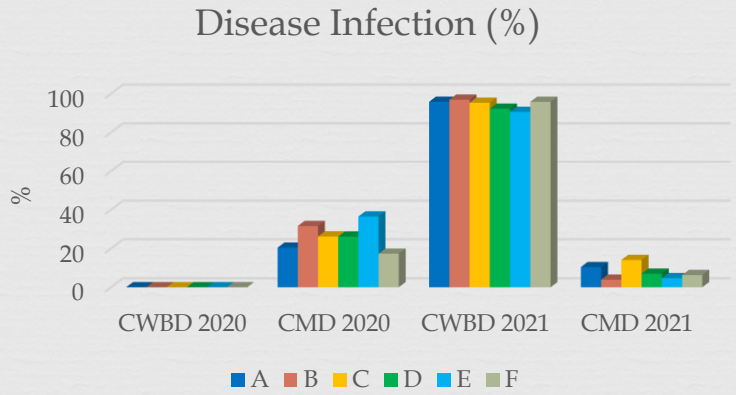


Figure 6: Disease infection in 2020 & 2021

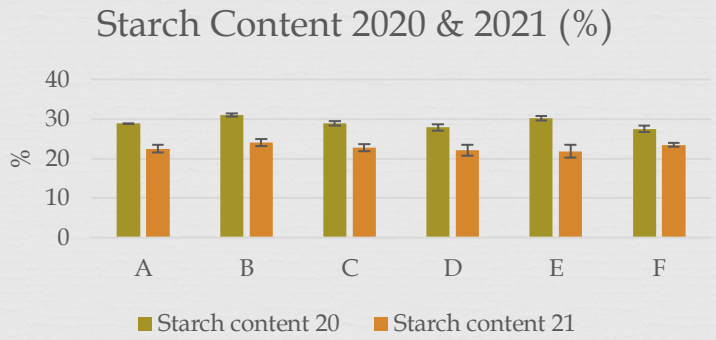


Figure 5: Percentage of starch content 2020 & 2021

A-1m x 1m + 80N -20 P_2O_5 80 K_2O, **B**-1m x 0.5m + 80N 20P_2O_5 80K_2O, **C**-1.5m x 0.5m + 80N 20P_2O_5 80K_2O

D-1m x 0.5m + 160N 40 P_2O_5 160 K_2O, **E**-1.5m x 0.5m + 106.7N-26.7P_2O5-106.7K_2O, **F**-1m x 1m (No fertilizer)

Planting date (2021) & harvesting duration trials (2020)

Why these experiments were conducted?

- How its response to different times and duration
- Does they affect farmer income
- Important for tunnel plantlets that will come all seasons

Planting date and harvesting duration trials

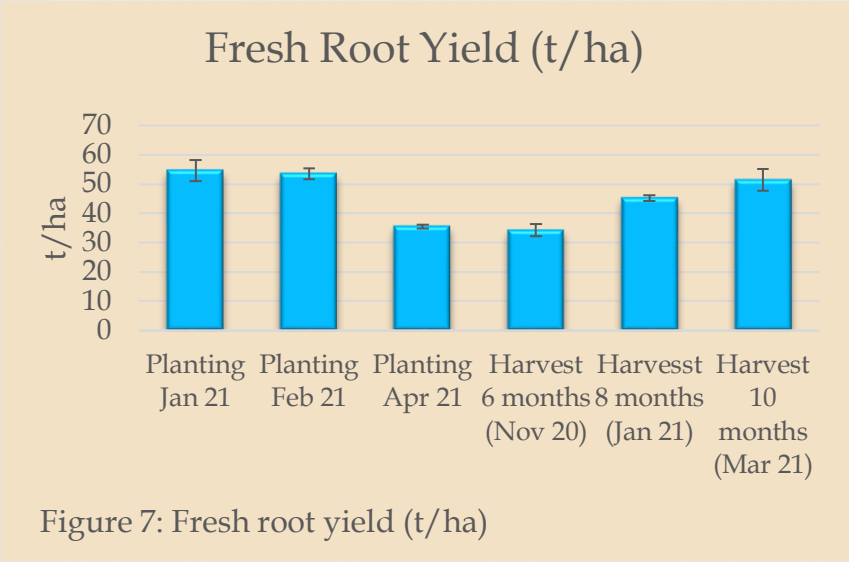


Figure 7: Fresh root yield (t/ha)

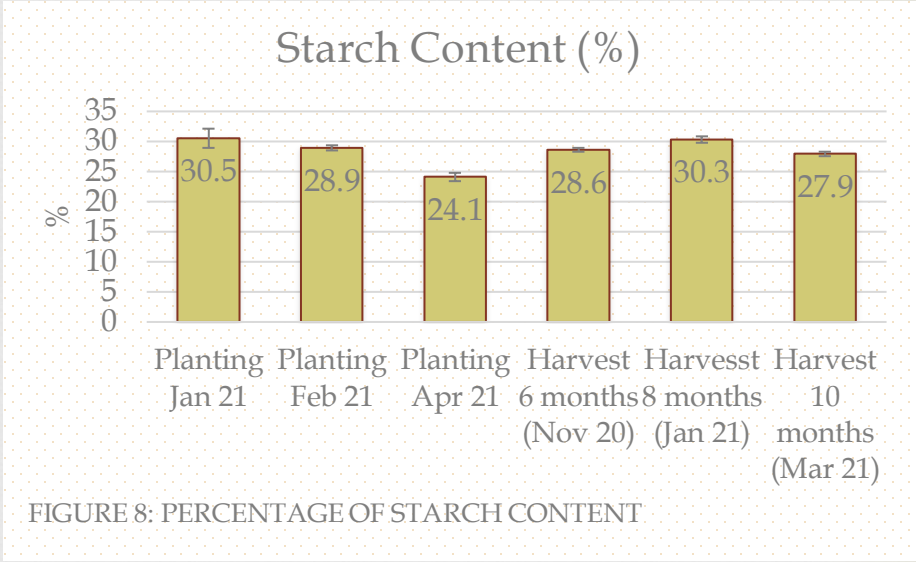


FIGURE 8: PERCENTAGE OF STARCH CONTENT

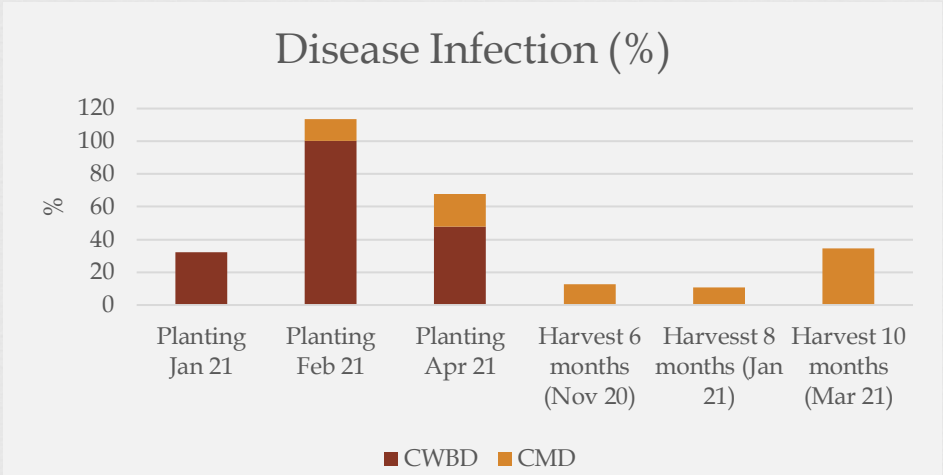


Figure 9: Percentage of disease infection

Plantlets and Stakes

- Why the experiment was establish?

Cassava stakes

Cassava plantlets

Plantlets and Stakes

Treatment	CMD infection (%)	CWBD infection (%)	Fresh root yield (ton/ha)	Starch Content (%)	Fresh Root Pictures
Plantlet from tunnel	7	34.7	36.9 ± 4.5	27.5 ± 0.8	
KU50-Clean stake	6.9	62.7	44.3 ± 7.3	29.6 ± 1.3	

Challenges

- Lack of clean planting materials for conduction experiment
- Root rot during harvest

Lesson learns

- Cassava can be planted in any season in Cambodia if we can provide water for a short period of time
- Using healthy/cleaned planting material with proper fertilizer application always provide good yield and starch content
- Good cooperation with different countries help to reduce risks disease infection in the region
- Sharing information among stakeholders can help farmers to minimize the spread of disease on cassava

Activity Photos

Trials views

Soil sampling

Planting activities

Weeding

Harvesting activities

Collecting data

Thank You !