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Knowledge gap, small farms and insecure land tenure limit the adoption of research-based recommendations for cocoa swollen shoot virus disease control

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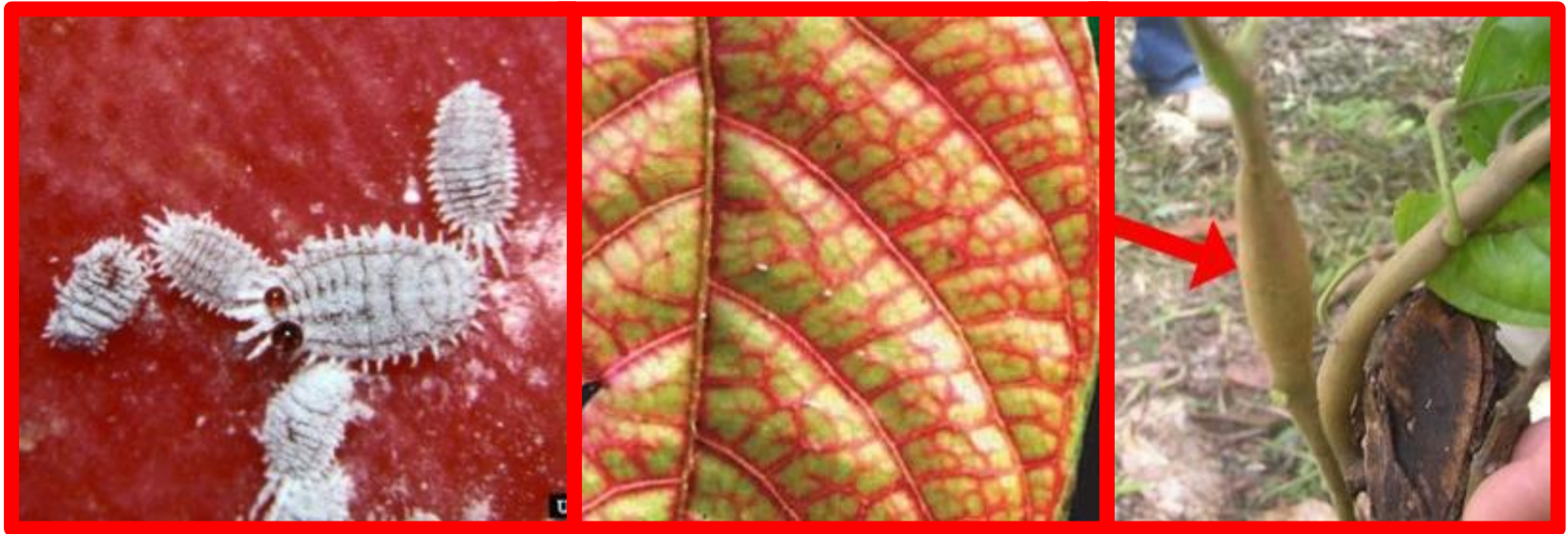
13-17 November 2017

Cocoa Swollen Shoot Virus Disease (CSSVD)

- One of the major limitations for cocoa productivity in West Africa (Ghana and Côte d'Ivoire).



Vector, symptoms and current control



- CSSVD first observed/described in 1922/36, respectively (Steven, 1936)
- Eradication program cut > 300 Mio. infected trees since 1946 (Dzahini-Obiatey, pers. Comm.)
- Despite these efforts, CSSVD still prevalent (Ameyaw et al., 2014)
- Potential control options (PCOs) not implemented by farmers (Ameyaw et al., 2014) Insecticide against vector, tolerant planting material, barrier crops

Potential control options are not implemented by farmers (Ameyaw *et al.*, 2014)

- **Control of vectors**
- **Use of more tolerant planting material**
- **Barrier cropping**

What are the socio economic constraints for farmers?

Methodology

Quantitative survey – Questionnaire

- Using tablets for face-to-face interviews
- Four districts:
 1. Nkawkaw
 2. Oyoko
 3. Sefwi Bekwai
 4. Boako

- Total **388** filled in forms



Focus group discussion

- Dig deeper into the complex of problems around adoption of recommended CSSVD prevention measures



Transdisciplinary multi-stakeholder workshop

Case PCO “barrier cropping”

2. Barrier Cropping

- 10m barrier with non-host crops (e.g. citrus, oil palm)
- When mealybugs move into new plantings through barriers, they become non-infective



Healthy cocoa

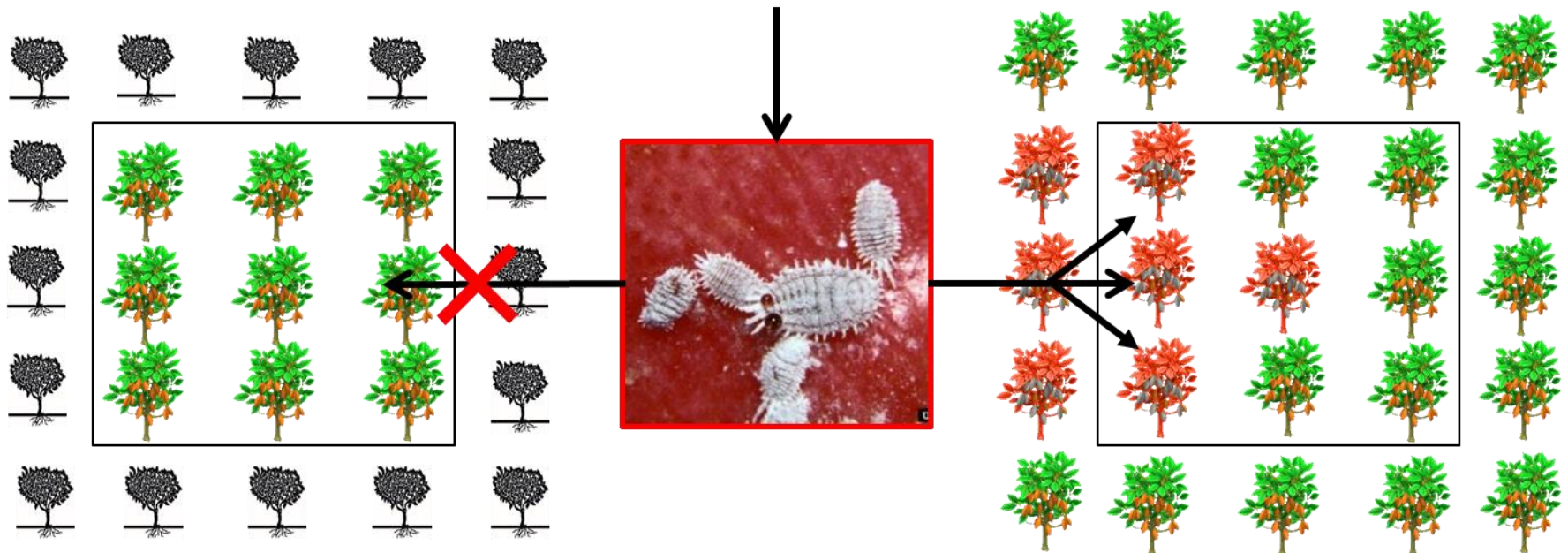


Citrus, oil palm



Infected cocoa

Spread of Cocoa Sasabroah



Preliminary results PCO “barrier cropping”

Barrier-Cropping

Factors	P-value	p<0.05?
Knowledge: No/Some	0.000	YES
Farm size	0.039	YES
Certified: Yes/No	0.633	NO
Owner/Share-Cropping	0.042	YES
Farming years: More or less than 15	0.223	NO
Experience from infection No/Some	0.413	NO
Social network	0.002	YES

Farmers with some knowledge are **24 times** more likely to adopt Cordon-Sanitaire than farmers with no knowledge!

An increase in 1 acre is increasing adoption by **11%**

Landowners are **3 times** more likely to adopt than share-croppers

Farmers who know more than 1 person who adopts barrier-cropping are **4.7 times** more likely to adopt than farmers who know 1 or less

Preliminary results general challenges

What are farmers **challenges** in adopting the recommended CSSVD prevention measures?

Challenges: General

<u>Count</u>	<u>Statement by farmers</u>
146	I have no knowledge
29	I have no money
22	I have no challenge
8	I have not enough time

Preliminary results general needs

What are farmers **needs** in adopting the recommended CSSVD prevention measures?

<u>Count</u>	<u>Statement by farmers</u>
181	Education, technical advice
71	Chemicals
61	Money
61	Machines (Chainsaw, knapsack sprayer, spraying machines, cutlass)
17	Access to improved cocoa, citrus and oil palm seedlings

Preliminary conclusion

Farmers' survey revealed that:

- Knowledge is highly associated with adoption
- Social network size has higher effect on adoption than educational level
- Farm size plays an important role for adoption
- Limited access to hybrid seedlings
- Trends (increasing adoption)
 - Younger farmers
 - Land owners
 - Experience with CSSVD

Transdisciplinary multi-stakeholder workshop



Results:

- Need for more participation of stakeholder in research, information sharing, quality assurance and policy making
- Facilitated information exchange at demonstration farms (incl. traditional leaders) to monitor & steer activities on the ground
- Call to revise land tenure systems with in participatory process with traditional leaders (chiefs)

Thank you for your attention!



Project partners:

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