



Alliance



Establishing sustainable solutions to cassava disease in mainland Southeast Asia

Update and planning for research of whitefly (*Bemisia tabaci*)

María Isabel Gómez J.

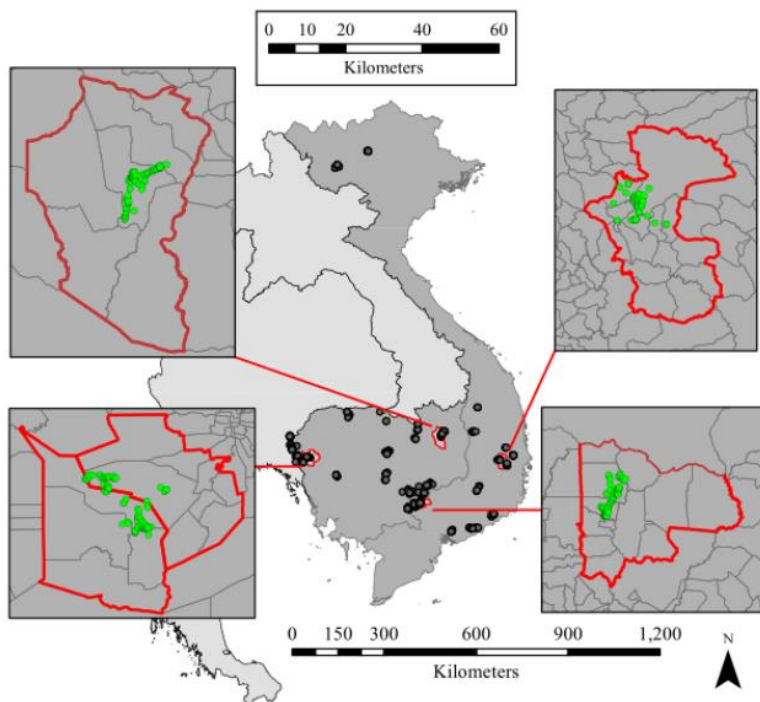


Annual report

project

Short Research Activity: Developing an emergency response and long term management strategy for Cassava Mosaic Virus in Cambodia and Vietnam

In 2016 from 150 whitefly samples collected in Cambodia and Vietnam, 149 were identified as Asia II 1 and one as Asia II 6.



Y. Chi, et al. 2020

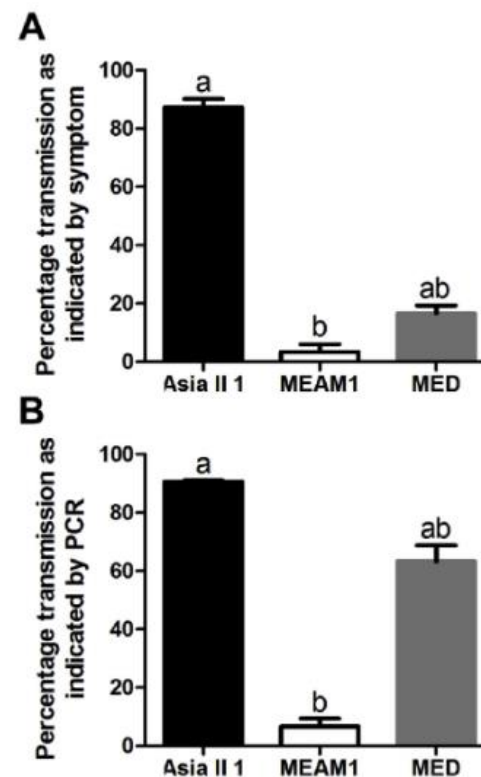
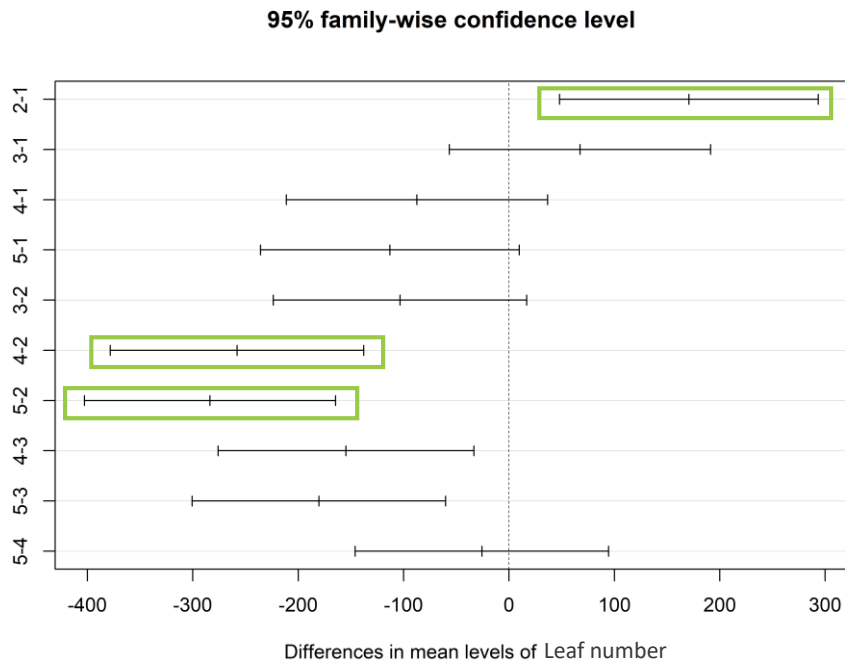
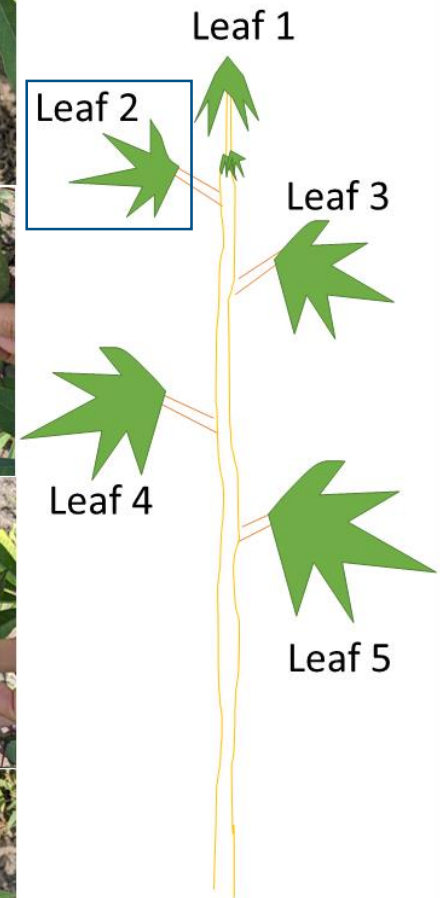


Fig. 1. Transmission efficiency of SLCMV to tobacco by three species of the *B. tabaci* complex (Asia II 1, MEAM1 and MED). Whiteflies were allowed a 96 h virus AAP, and then transferred onto tobacco seedlings to transmit the virus for another 96 h. The number of whiteflies per test plant was 10, and for each whitefly species, three replicates were conducted with each consisting of 10 plants. The values represent mean $\pm$ SEM of the percentage of PCR positive test plants (A) and percentage of test plants that showed typical symptoms (B) in all plants tested. Different letters above the bars indicate significant differences (Kruskal-Wallis test, $P < 0.05$).

Standardization

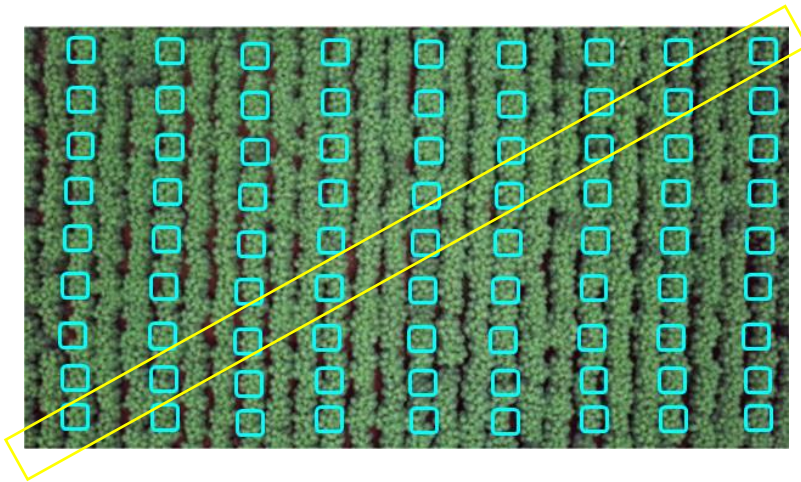


FIVE YOUNGEST LEAVES OF CASSAVA PLANT



Number of plants per field

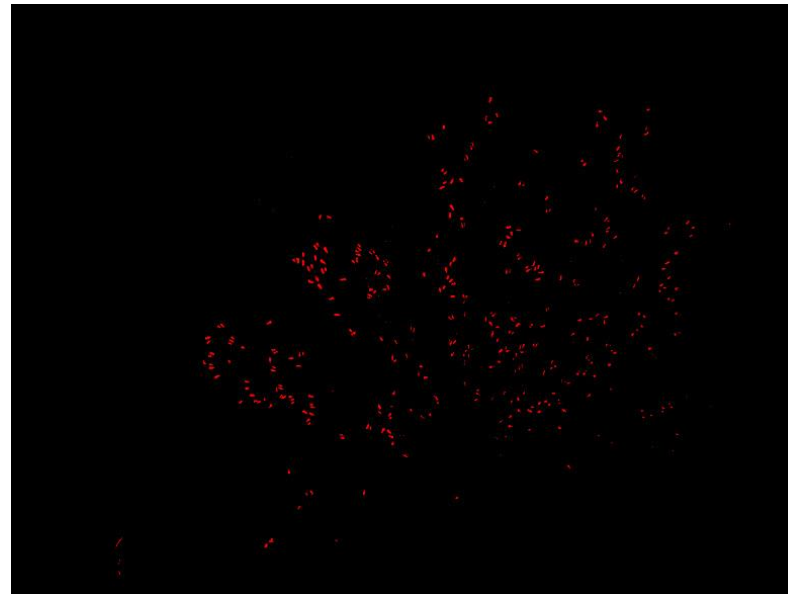
N= 99 plants
X=56,85 adults/leaf/plant



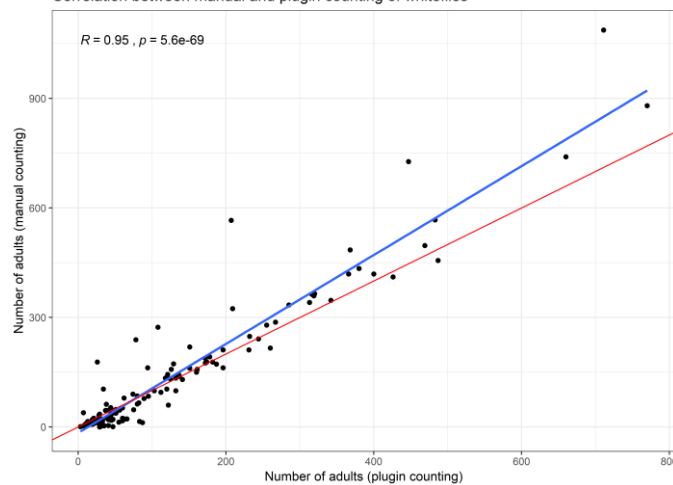
N	Whiteflies Average	StdDev	StdErr
99	56,85		
10	56,69333333	23,13	7,314
20	56,95447368	13,41	4,241
30	56,74333333	4,904	1,551
40	56,5225	6,13	1,939
50	54,918	3,54	1,119
60	56,09166667	3,533	1,117
70	55,32714286	3,887	1,229
80	57,77	2,866	0,906
90	57,47444444	2,131	0,674

Mean time in seconds	48,16667
Mean x 30	1445
Total time (mins)	24,08333

NYMPHSTAR

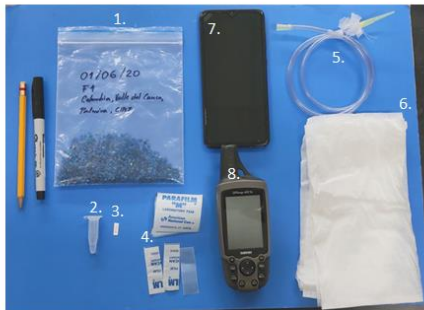


Correlation between manual and plugin counting of whiteflies



Training

- Protocols
- Brochures
- Videos
- Virtual Meetings



SAMPLING MATERIALS PER ONE FIELD

1. Ten (10) 10 x 10 cm Ziploc bags containing silica gel. Just the first one must be labeled with the date, number of the field, location identifiers and coordinates. In the field, you should take a picture of this bag.

2. One Eppendorf tube (1.5 mL) with 0.5 mL of 96% ethanol labeled with the field number in the lid using a permanent marker and with 3. one small paper label into the tube with the field number written using a pencil

4. Parafilm strips

5. An insect aspirator

6. Sixty (60) tissue papers

7. A cellphone or camera with the function of GPS location of pictures activated and date and time updated

8. In case your device doesn't have GPS function you will need a GPS tracker

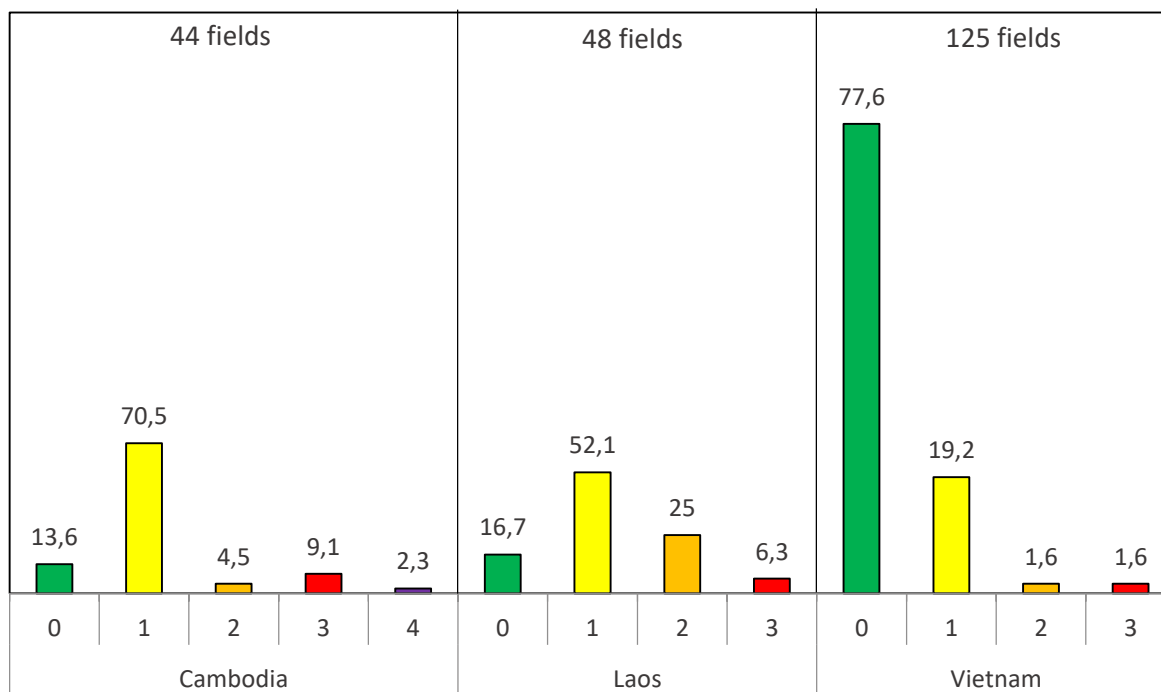




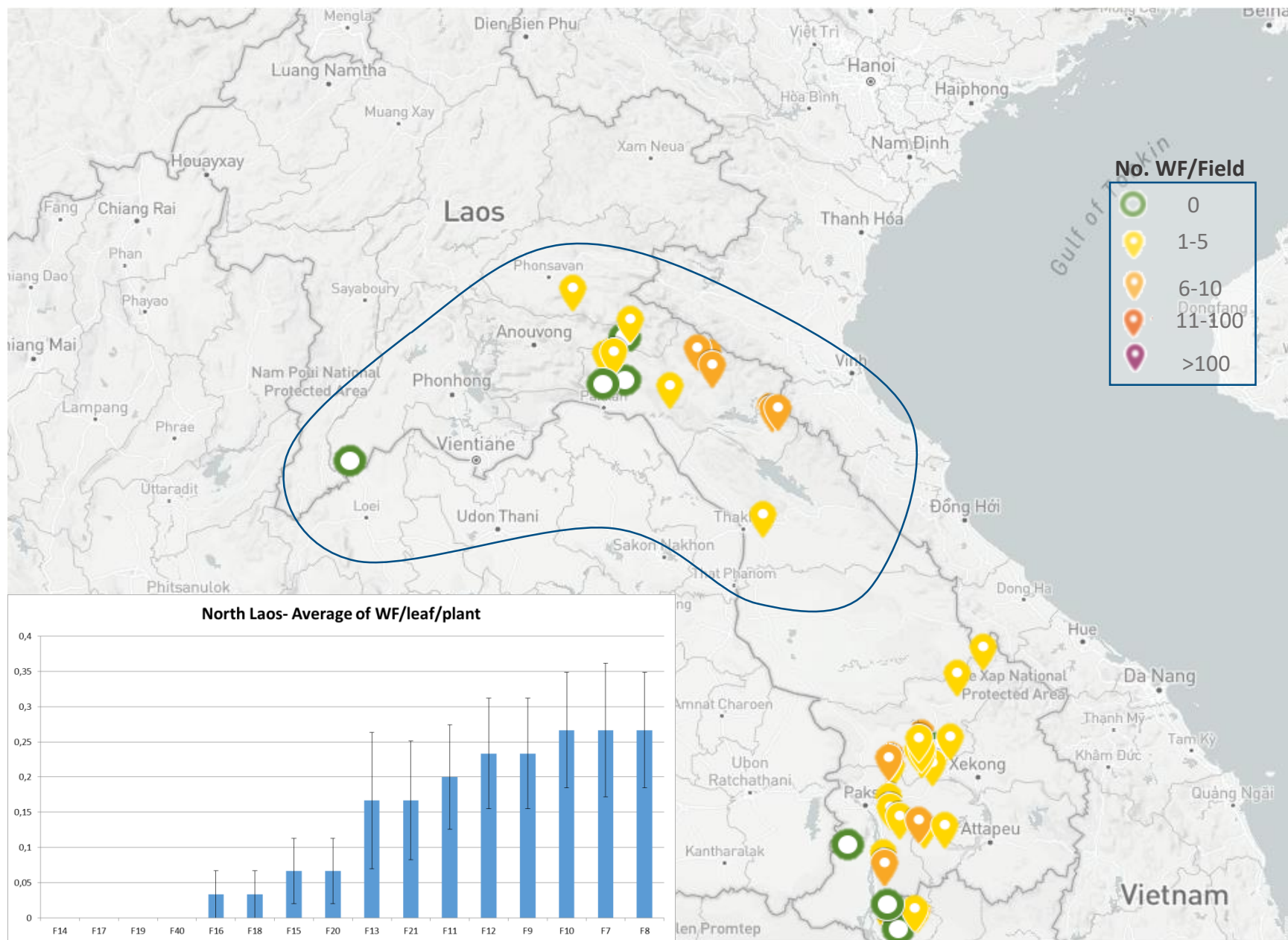
>6500 photos

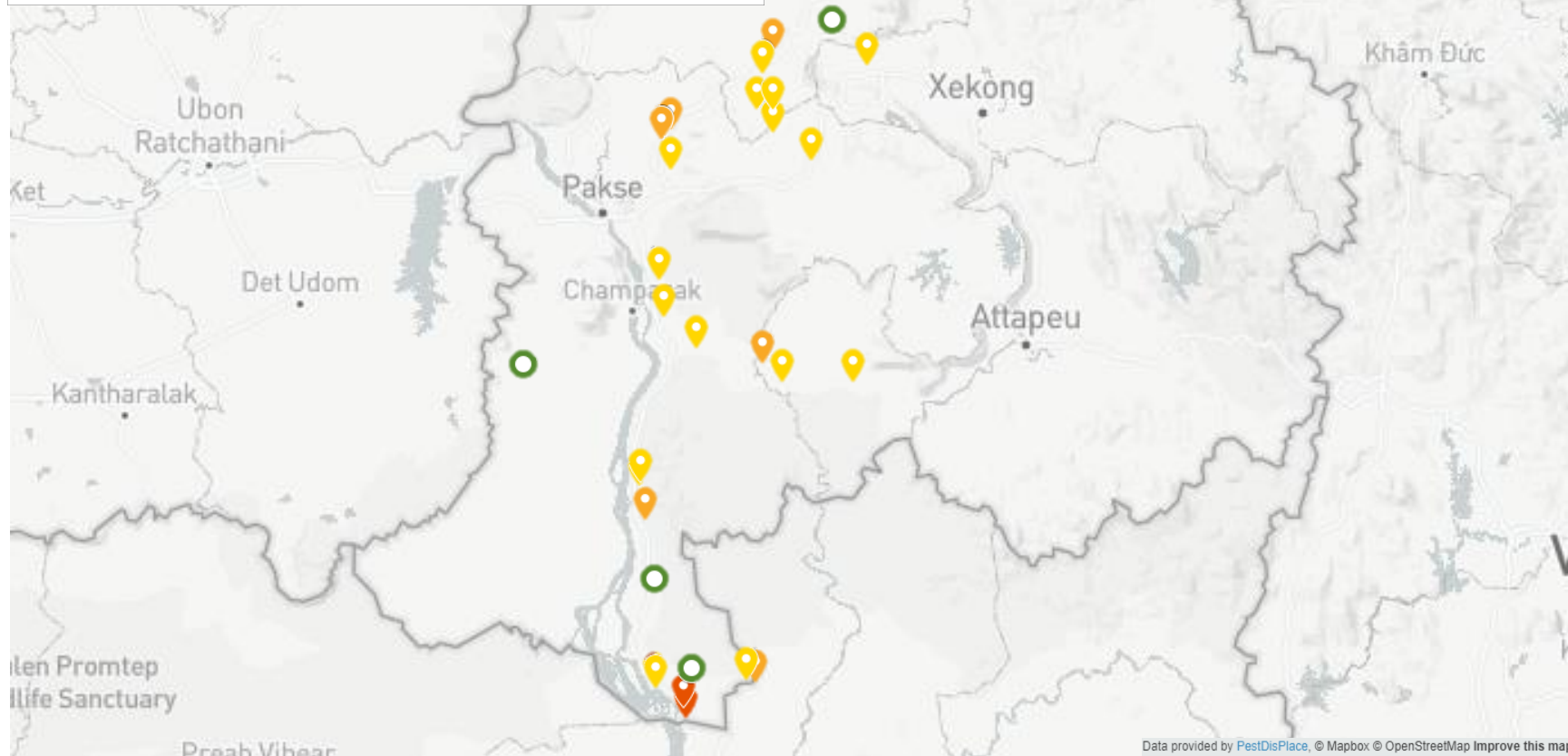
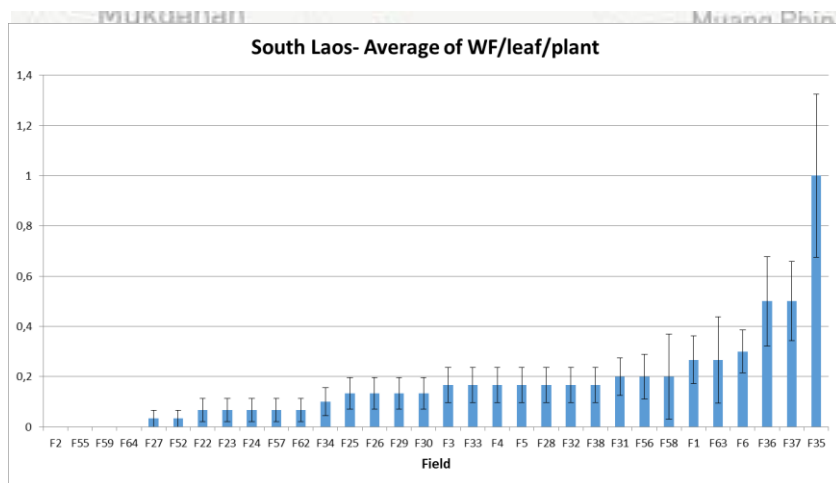


Percentage of fields in each population scale



	Scale	No. WF/30 plants	Average/leaf/plant
0	0	0	0
1	1	1-5	0,033-0,16
2	2	6-10	0,2-0,33
3	3	11-100	0,36-3,33
4	4	>100	>3,33

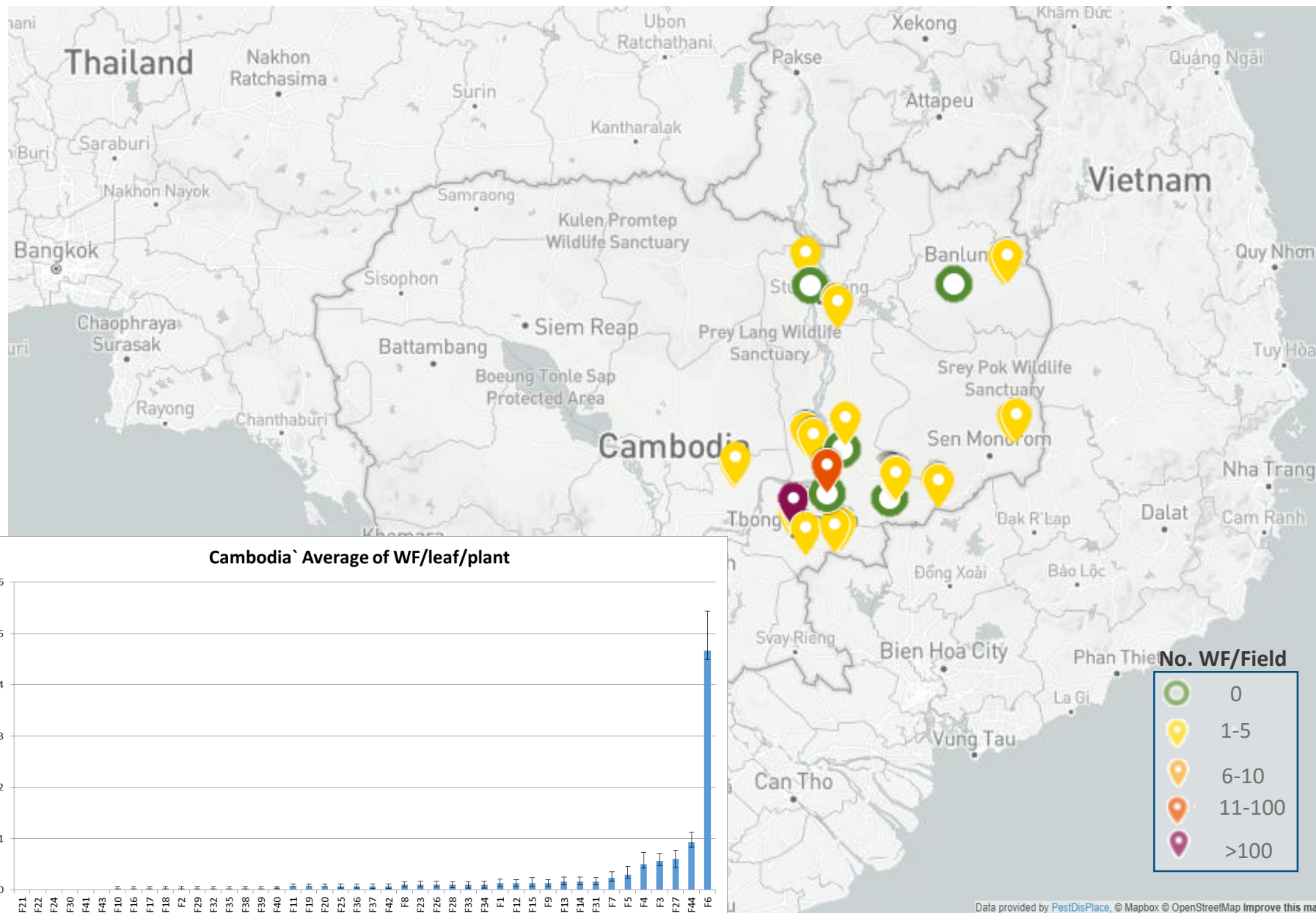




Data provided by [PestDisPlace](#), © Mapbox © OpenStreetMap Improve this map

Alliance



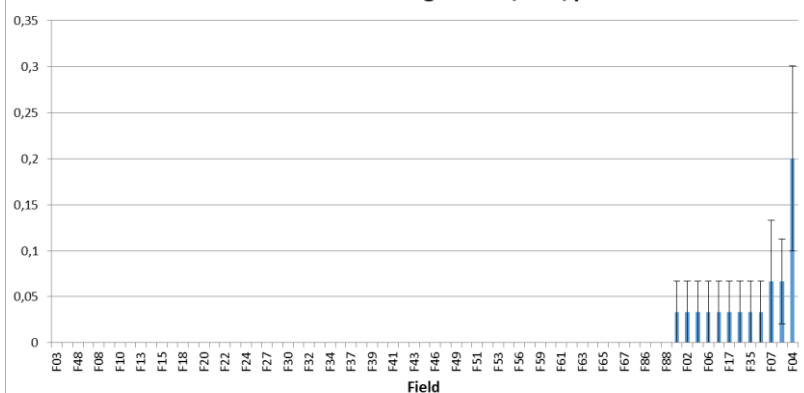


Data provided by [PestDisPlace](#), © Mapbox © OpenStreetMap Improve this map

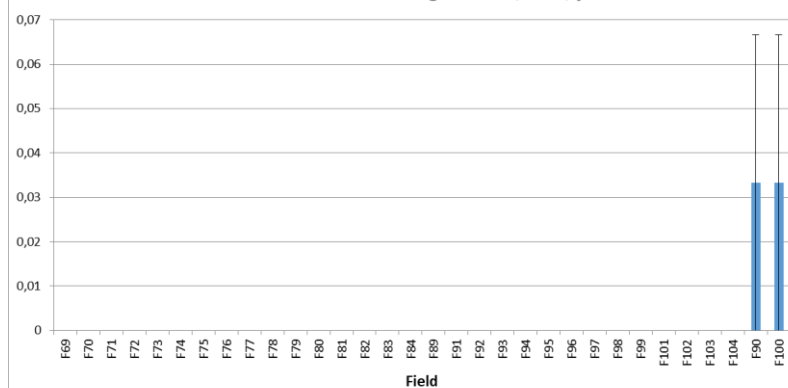
Alliance



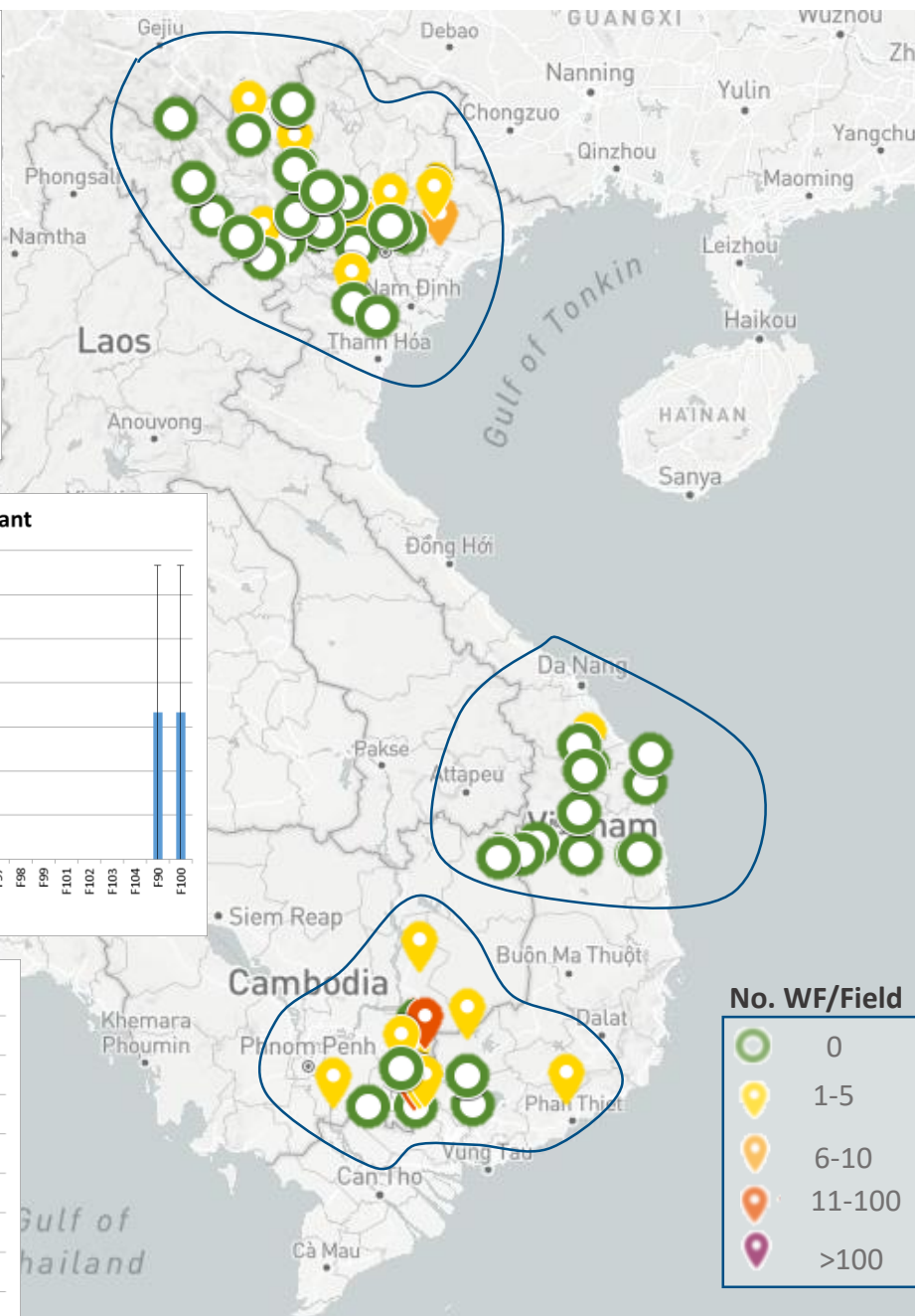
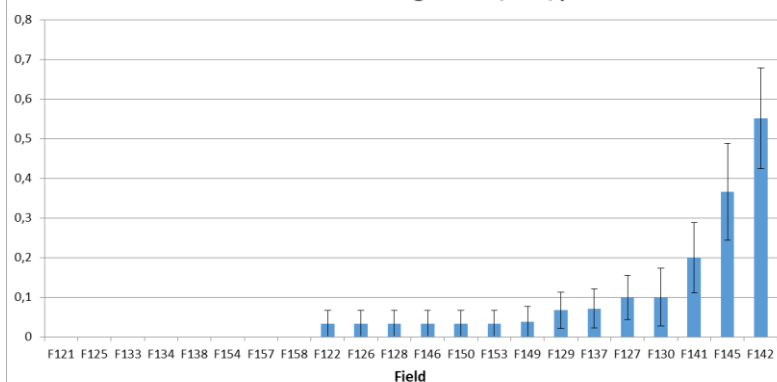
North Vietnam - Average of WF/leaf/plant



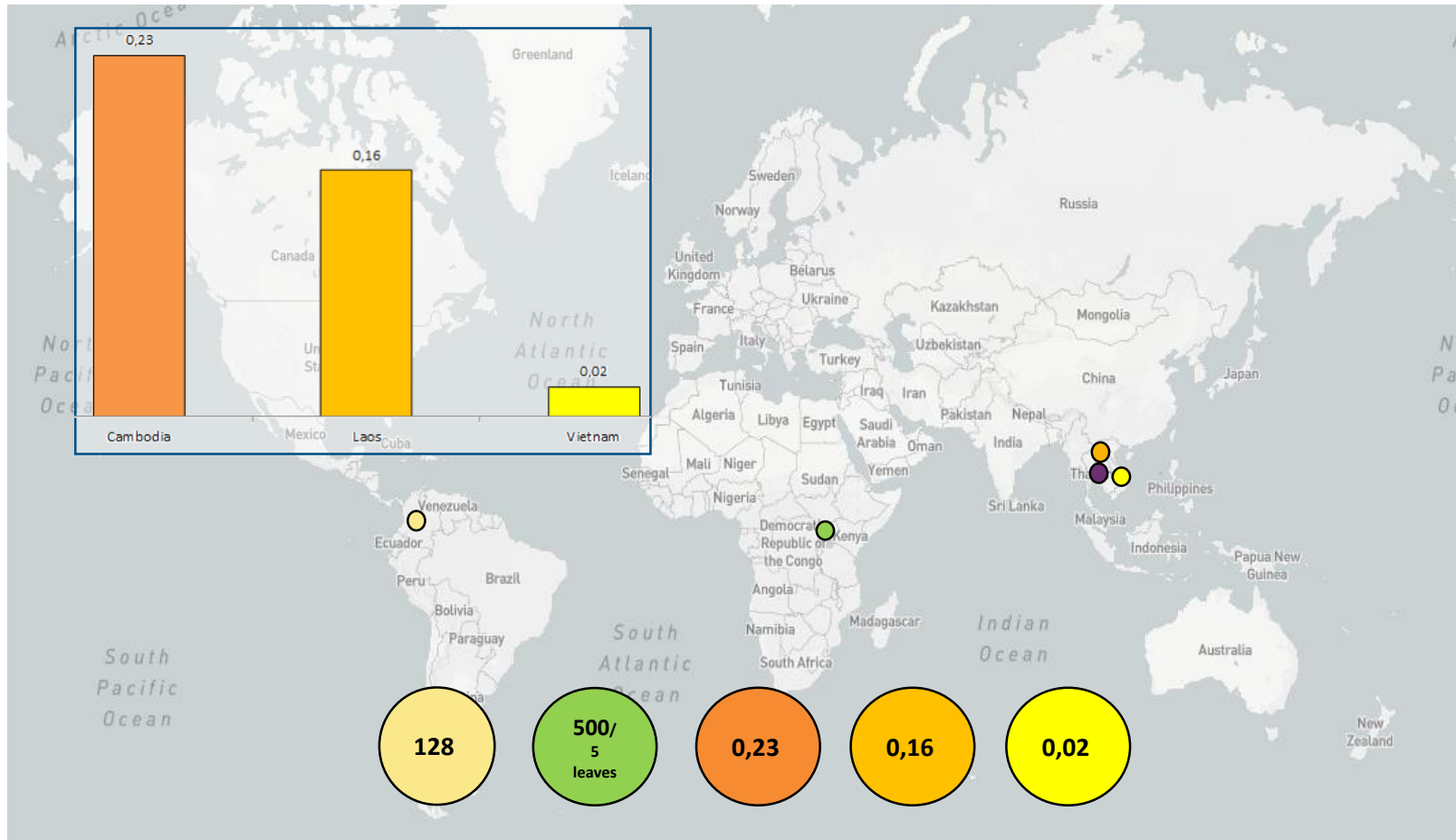
Central Vietnam - Average of WF/leaf/plant



South Vietnam - Average of WF/leaf/plant



Average WF/leaf/plant



Article | Open Access | Published: 15 October 2019

What has changed in the outbreaking populations of the severe crop pest whitefly species in cassava in two decades?

Hadja M. Ally, Hajar El Hamss, Christophe Simiand, M. N. Maruthi, John Colvin, [Christopher A. Omongo](#) & Helene Delatte

Genetic diversity using mtCOI

“Standard” mtCOI primers on other animals

LCO1490	GGTCAACAAATCATAAAGATATTGG
HC02198	TAAACTTCAGGCTGACCAAAAAATCA

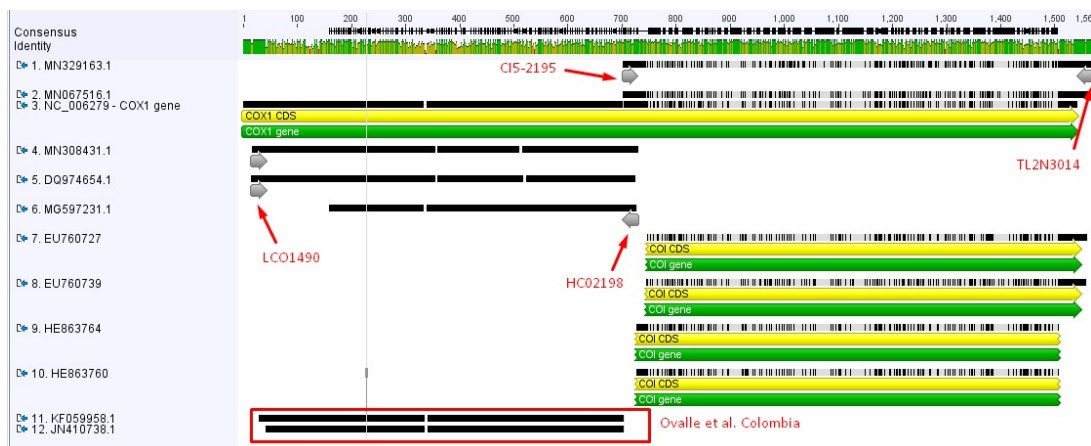
African ancestry of New World, *Bemisia tabaci*-whitefly species

Habibu Mugerwa^{1,2}, Susan Seal¹, Hua-Ling Wang¹, Mitulkumar V. Patel¹, Richard Kabaalu², Christopher A. Omongo², Titus Alicai², Fred Tairo¹, Joseph Ndunguru¹, Peter Sseruwagi^{1,3} & John Colvin¹

2018

2195Bt	(5'-TGRTTTTTTGGTCATCCRGAAGT-3')
C012/Bt-sh2	(5'-TTTACTGCACTTTCTGCC-3')

5 of 20 samples were amplified using PCR without DNA extraction



Alliance



Thank you!

María Isabel Gómez J.

MSc. Entomology

m.i.gomez@cgiar.org

