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► **To cite this version:**

S bastien Guyader, Fran ois Bussi re. Comparing antrachnose dynamics and leaf wetness duration in staked and unstaked plots of water yam. Plant and Canopy Architecture Impact on Disease Epidemiology and Pest Development, Institut National de la Recherche Agronomique (INRA). FRA.; Agence Nationale de la Recherche (ANR). FRA., Jul 2012, Rennes, France. hal-02745790

HAL Id: hal-02745790

<https://hal.inrae.fr/hal-02745790>

Submitted on 3 Jun 2020

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COMPARING ANTHRACNOSE DYNAMICS AND LEAF WETNESS DURATION IN STAKED AND UNSTAKED PLOTS OF WATER YAM

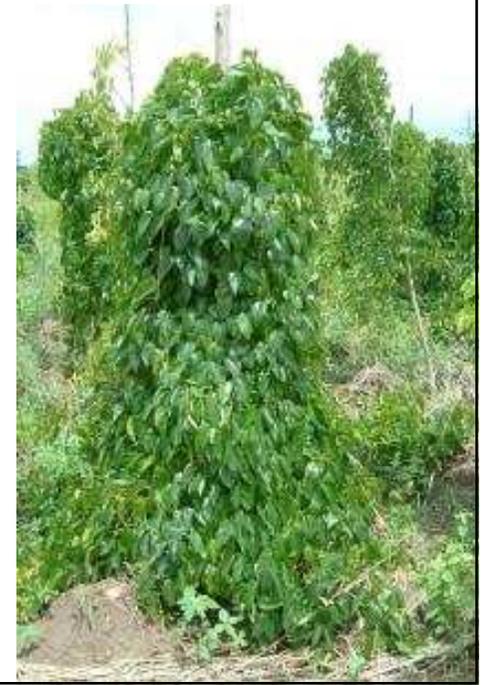


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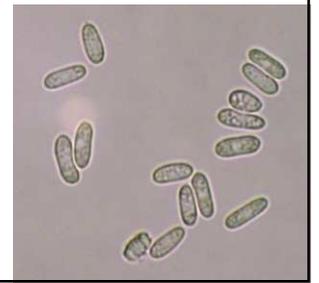
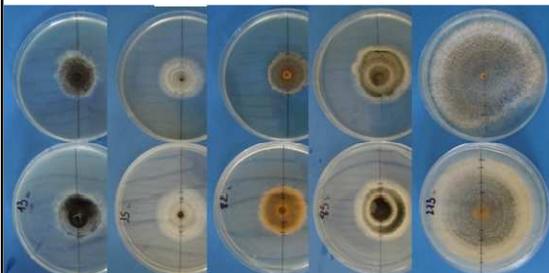
Water yam

- ❑ Water yam: *Dioscorea alata*
- ❑ Root tuber: ranks 4th in worldwide tuber production
- ❑ Consumed as staple food in tropical countries
- ❑ Annual crop, 6 to 9-month cycle
- ❑ Main pest: anthracnose
Losses of up to 80%



Anthracnose

- *Colletotrichum gloeosporioides*
- Spores (conidia) spread by rain splashing
- Leaf wetness plays crucial role in the infection process
- Hypothesis:
 - ▣ architecture or training system can affect leaf wetness duration (LWD), and disease severity
 - ▣ two training systems: staked vs. unstaked

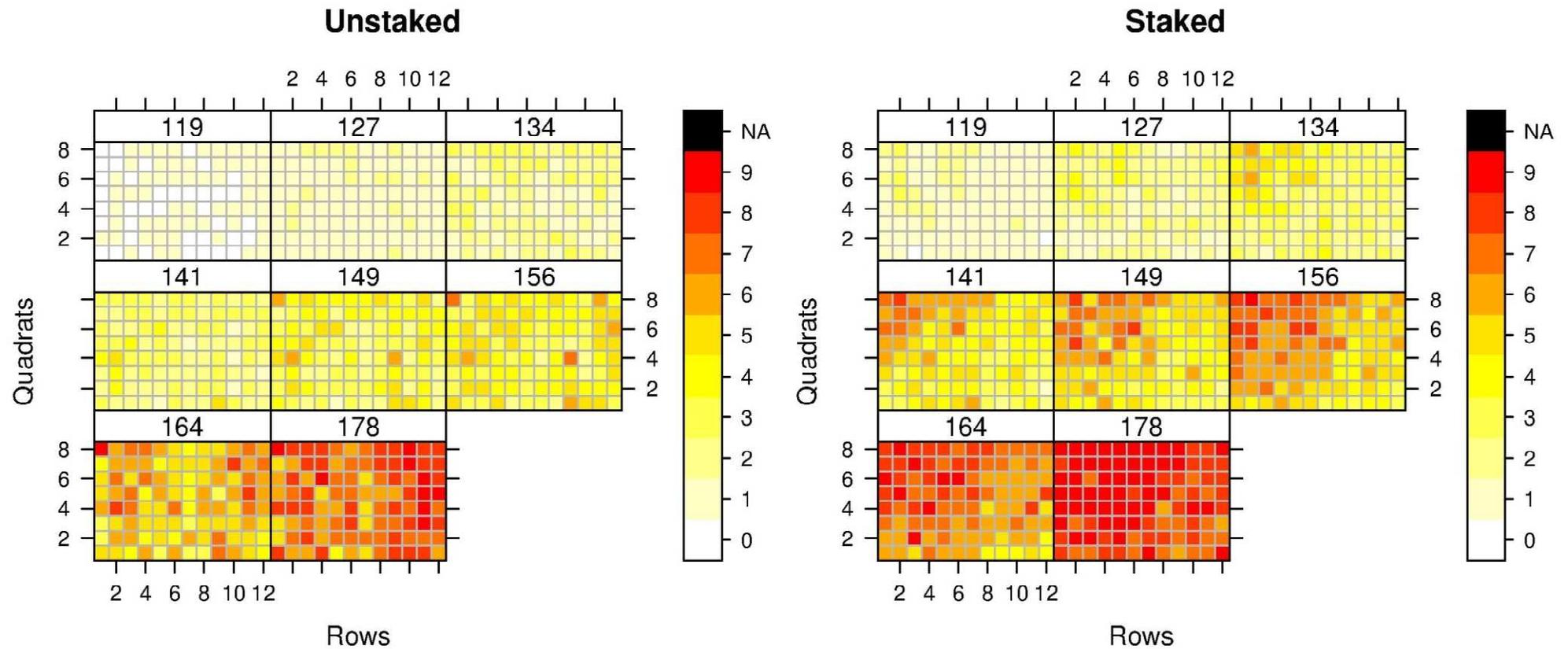


The experiment

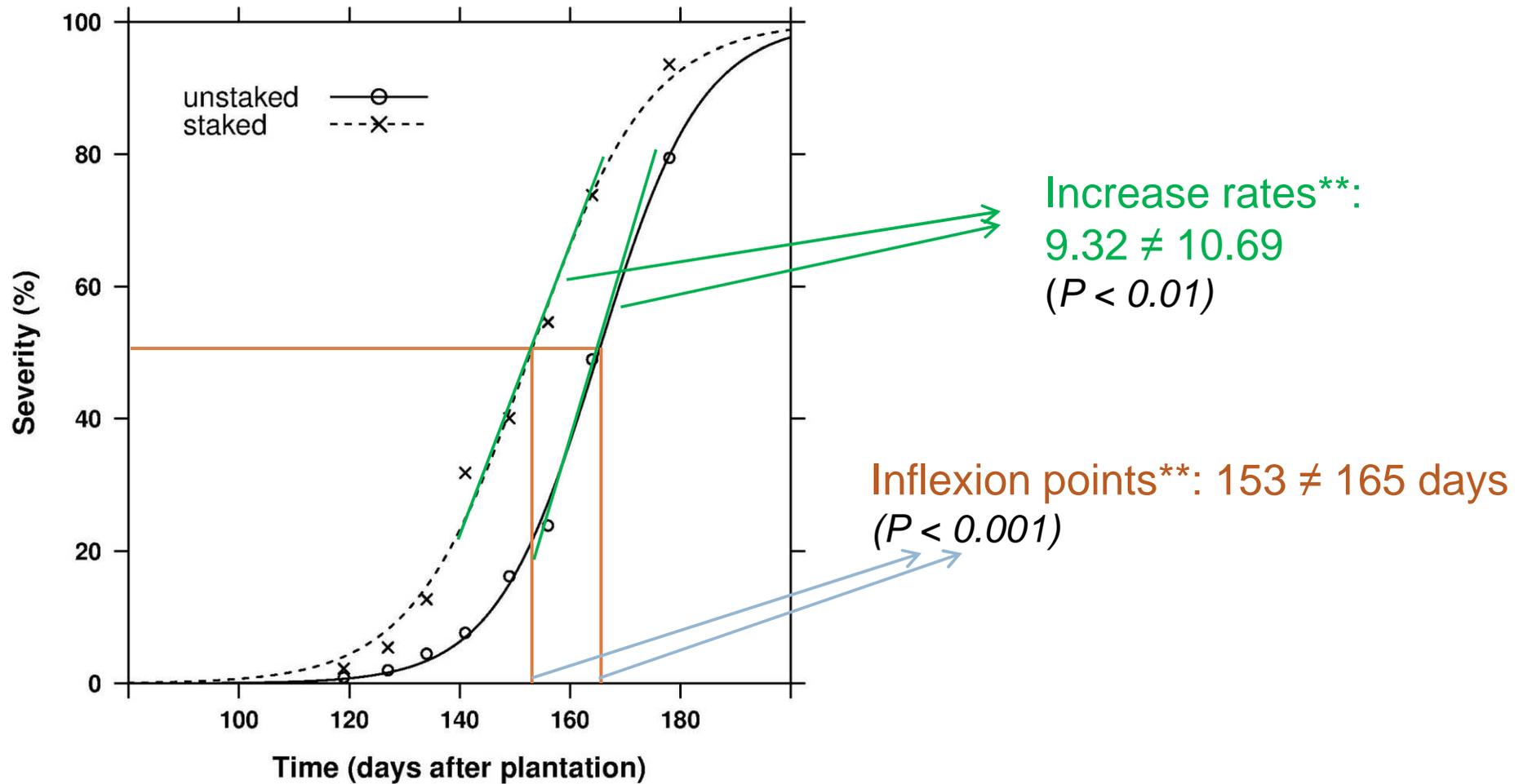
- Goal: field trials to compare the disease dynamics and microclimate variables in staked and unstaked plots
- Conducted for 3 years, but only last year is exploitable
- Plants were naturally infected
- Measured variables:
 - ▣ disease severity
 - ▣ climatic variables (rain, RH, temperature...)
 - ▣ microclimatic variables (LWD, light, temp...)



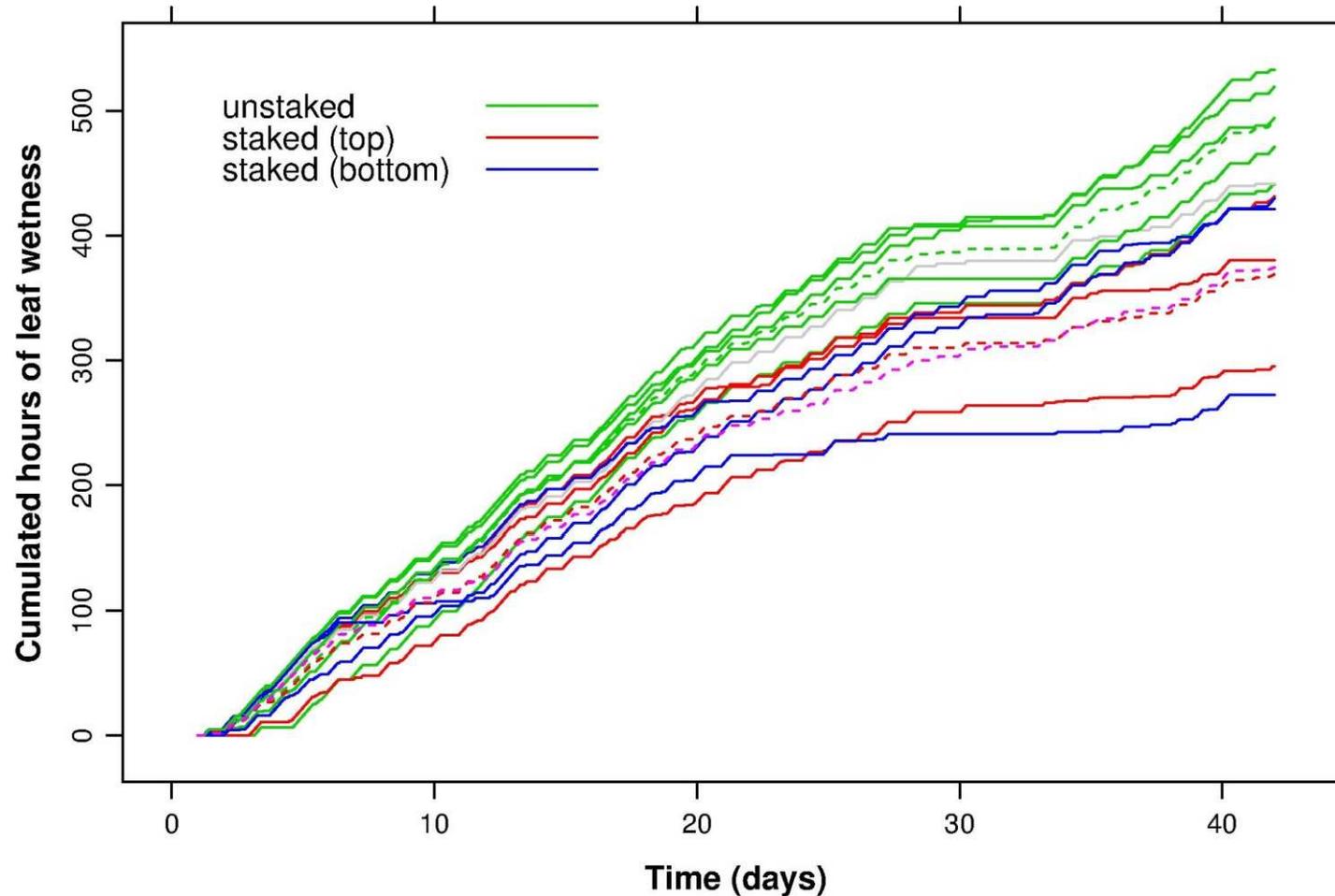
Results: disease dynamics



Results: disease dynamics



Results: leaf wetness duration



Cumulated LWD**:

491 hrs \neq 371 hrs
(KW test, $P=0.028$)

Conclusions

- The training system (staking or not) has an effect on disease dynamics

- It does also have an effect on LWD

Longer LWDs in unstaked plots likely speed up the disease infection process

- However, primary inoculum (interception) may have an important effect on the disease onset

Aknowledgements

- ANR « Archidemio » contract
- Archidemio project collaborators
- INRA Guadeloupe: T. Bajazet, J-B Nanette, F. Poliphème, M Pallud, M. Salles



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