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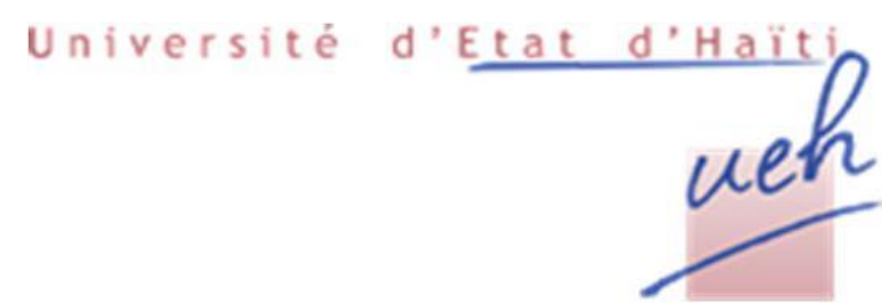
# What tools for agroecological diagnosis ?

## Towards a methodological approach with Plantain (*Musa paradisiaca*)

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**CONTEXT :** Agroecological diagnosis of cropping systems is a prerequisite to identify i) the main constraints affecting crop health and nutrition, ii) ecological processes than can be held as alternatives to chemical inputs like fertilizers and pesticides.

**Are there appropriate methods to inventory the potential role of functional biodiversity ?**

**AIM :** To define agroecological methods for the design productive and chemicals' free. plantain cropping systems

**HYPOTHESIS :** Banana plantations led in an agroecological way present a highest biodiversity and a good phytosanitary state, what would strengthen the resistance and the vigor of the plant against the attacks of pathogenic agents.



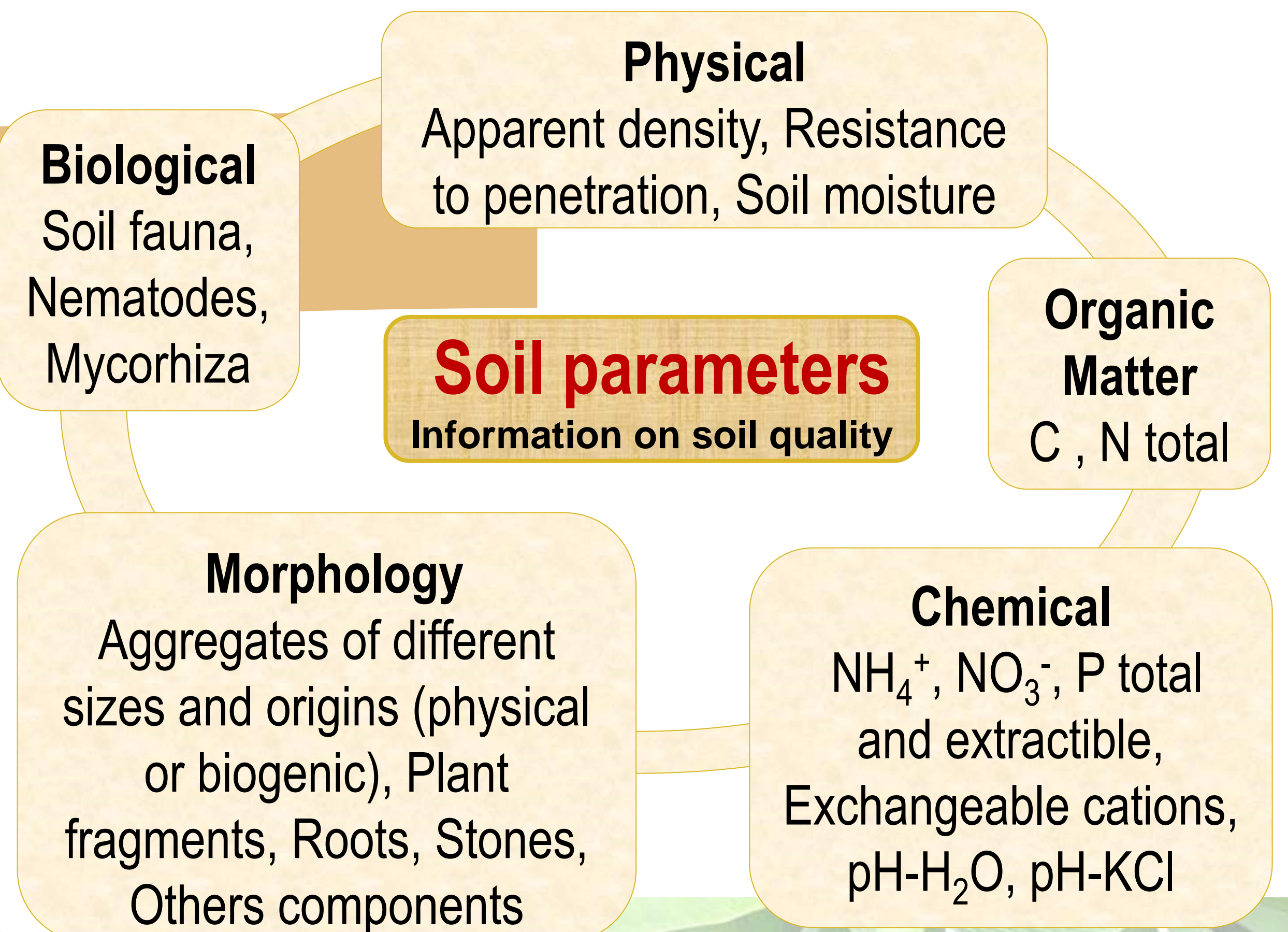
Plantain Field  
(*Musa paradisiaca* L.)

### METHODS

**Agroecological Diagnosis in plantain fields in Guadeloupe, Colombia and Haiti**

Measuring different parameters to establish an agroecological diagnosis linking cropping practices and plantations environmental quality

#### 1. Measurements of soil parameters



#### 2. Estimation of foliar necrosis or symptoms caused by :



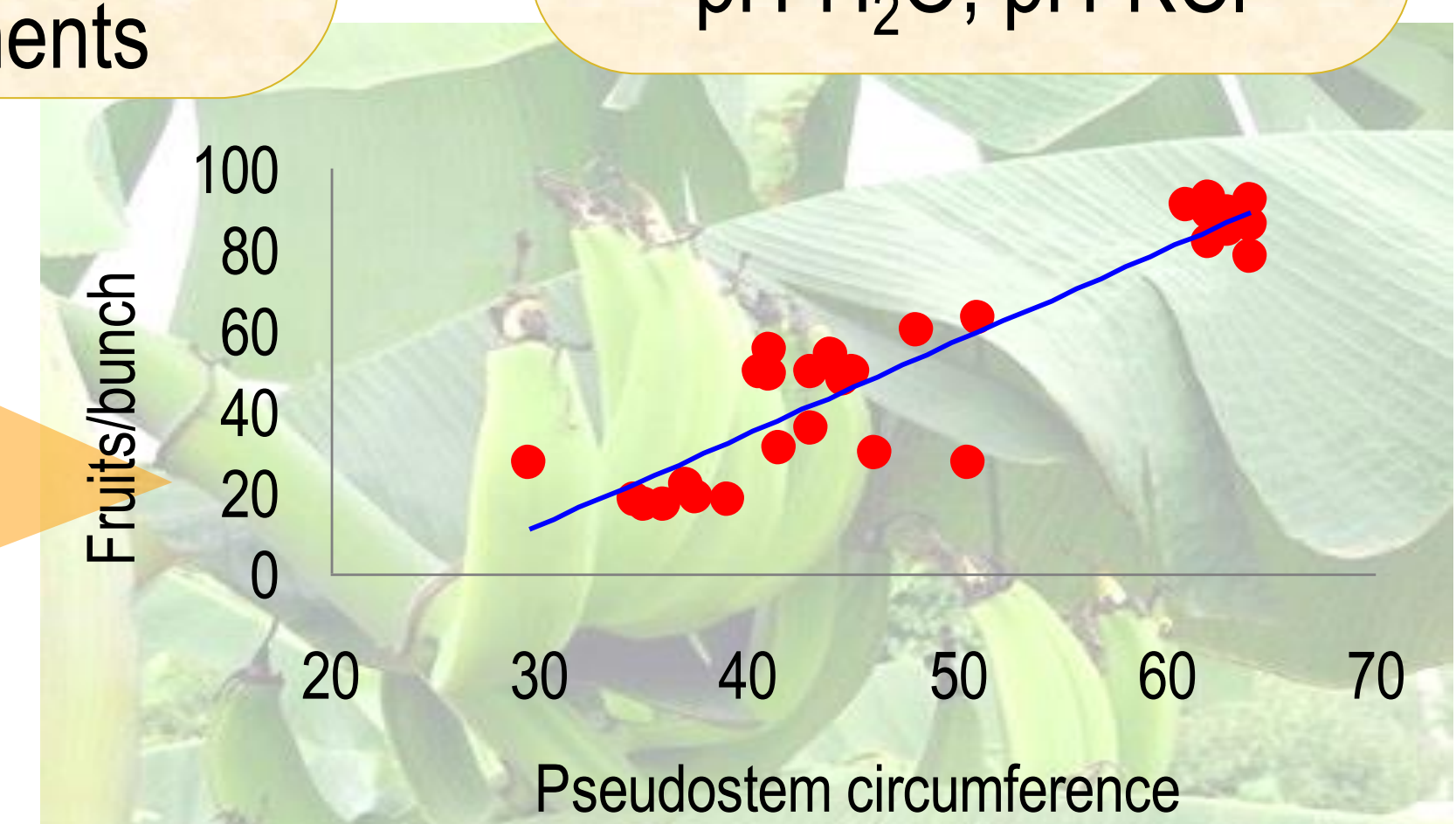
#### 3. Estimation of root necrosis caused by phytoparasitic nematodes



#### 4. Estimation of bulb infestation caused by banana weevils



#### 5. Estimation of banana production through a sample of plants selected in the plot (yield evaluation by the relationship between the circumference of pseudostem, and the number of digits by bunch).



### CONCLUSION

Results obtained will help to identify the main problems affecting plantain performances in different Caribbean regions and to bring some agroecological alternatives. Hypotheses on how ecological processes i.e. food webs, soil engineers, etc, ... could be involved in the resolution of some of these constraints will be tested both in controlled and in on-farm experiments.

### Caribbean Agroecology Networking Symposium

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47<sup>th</sup> Annual Scientific Meeting of the Caribbean Food Crops Society, Lloyd Erskine Sandiford Centre, Bridgetown, Barbados, July 3-9, 2011



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