**Management of an important fungal aerial disease of bananas**

Black Leaf Streak Disease (BLSD), caused by the fungus *Mycosphaerella fijiensis*, is a foliar disease resulting in substantial yield losses. Most importantly, this disease alters fruit conservation (fruit greenlife) that renders bananas unfit for export because greenlife should exceed transit time. The banana industry relies on the cultivation of a unique susceptible cultivar, generally in humid tropical conditions conducive for BLSD. As a consequence, this industry requires an intensive use of fungicides. However severe constraints to chemical control have emerged: fungicide resistance, increasing costs, environmental pollution and evolution of legislation that becomes very restrictive in some countries. Then, alternatives to chemical control is an important challenge for this industry and more generally for the control of a fungal aerial pathogen. The design of cropping systems excluding the use of fungicides requires an innovative agro-ecological approach mixing cultural practices aiming to slow down the epidemic cycle and cultural practices aiming to reinforce crop tolerance.

### Slow down epidemic cycle through specific cultural practices

- **Example of agro-ecological control of BLSD in a commercial plantation of Dominican Republic (dry tropical conditions)**

  **Cultural practices of this cropping system evaluated over 3 crop cycles**

  1. **Slow down epidemic cycle**
     - **Dry season**
     - Delaying of leaf emission before flowering
     - Low leaf area (landscape scale banana are associated with other crops)

  2. **Reinforce crop tolerance**
     - Optimal agronomic management high level of nutrition, optimal irrigation, monitoring of foliar parameters
     - Deleafing of necrotic leaf portions after flowering

### Results
- Foliar area decreased after flowering in different manners according to crop cycles and disease pressure.
- Low weight losses ranging from 0% (1st cycle) to 15% (2nd cycle).
- Greenlife always remained high (40-50 days at 31°C), even on the trial when few leaves were present at harvest time (3rd cycle).

### Conclusion
- Deleafing enable to maintain a high greenlife compatible with exportation.
- In dry tropical conditions yield losses are low as long as foliar leaf emission is important.

Further evaluation of this cropping system in tropical humid conditions.

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**Perspectives**