Florentaise : biochars for plants growth

Bordeaux, April, 27th,

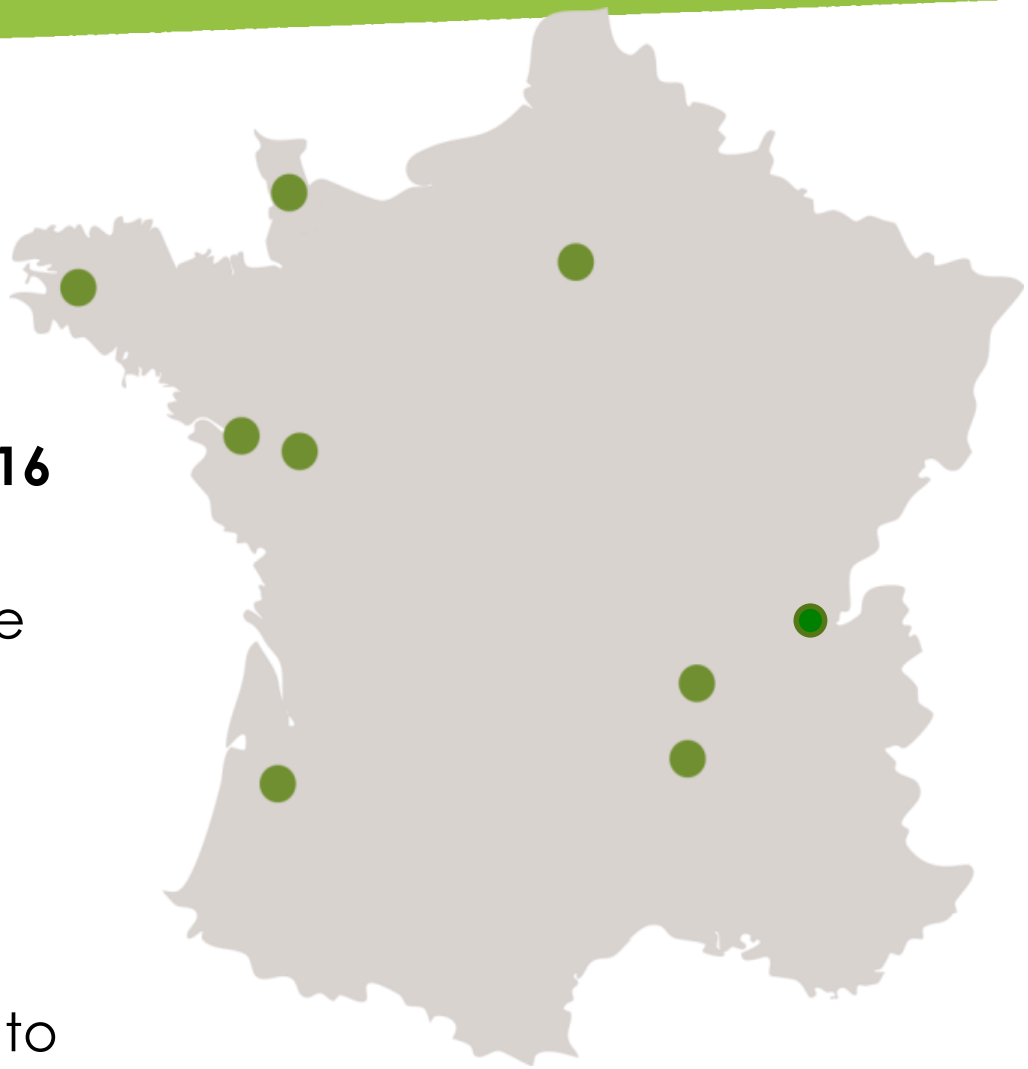
SUDOE Workshop

FLORENTAISE

A 40 years long lasting story

Leader on French substrates market

- **1 000 000 m³** of substrates/year, including **400 000 m³** abroad
- **€38** million turnover in **2016**
- **9** production sites in France
- **150** employees
- **65%** of sales are to the hobby market and **35%** to professionals



FLORENTAISE

A significant international presence

- **5** factories and partners around the world

- **2016 :** Opening of our factory in China

FLORENTAISE

1 R&D facility: **4 000 m²**

7 engineers and **3** PhD

13 Patents

1200 K€ R&D investments

1 Microorganism Homologation

GreenProtect® Algiflore® Aquastock® Nutriflore®

With Natural and Renewable Raw Materials

« Our strategy : Innovating together to grow, feed and care for plants in a greener world »

Jean-Pascal CHUPIN
Managing Director

FLORENTAISE

Florentaise and biochars

GreenCHAR®

Why biochars?

- 1st goal : to be Carbon neutral
  - 16,2% of reduction between 2011 and 2016
  - Go further : substrate « Zero Carbon »

- 2nd : to develop and sell an industrial process
  - Pyrolysis up to 200 kg/h, with low energy consumption
  - Combining production of biochar and production of energy

  => Industrial process + raw material sourcing = homogeneity and regularity in production

- 3rd : to valorize biomass

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Agronomic properties

- Bibliography
  - A lot of studies in soil
  - Almost nothing in soilless culture

- 2 types of biochar interesting for these types of valorization :
  - Pine bark => soil
  - Poultry manure => substrate / P & K fertilization

GreenCHAR®

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Soil culture results

- Cultures in soil : salads *(Valerianella locusta)*

Control | Bark-Greenchar

Around 30% weight more

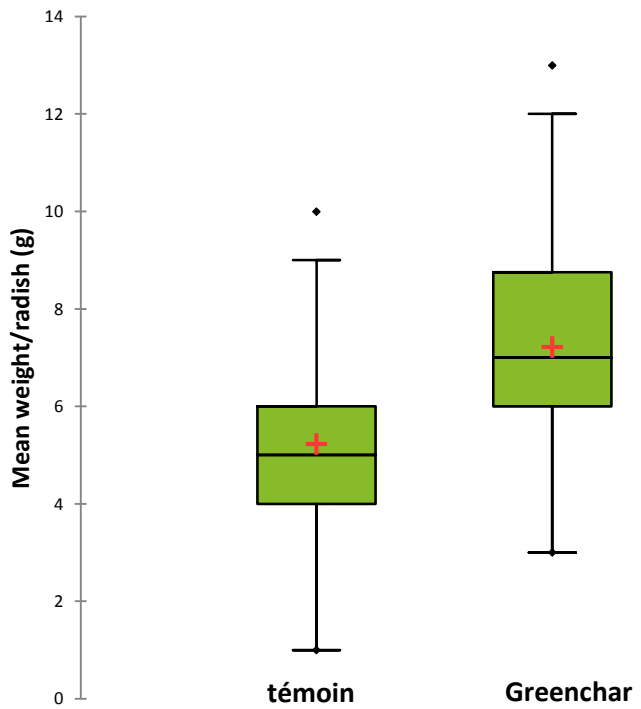
1t/ha application, end 2015.

6 harvestings done. Regular results.

Duration?

Soil culture results

- Radish *(Raphanus sativus)*



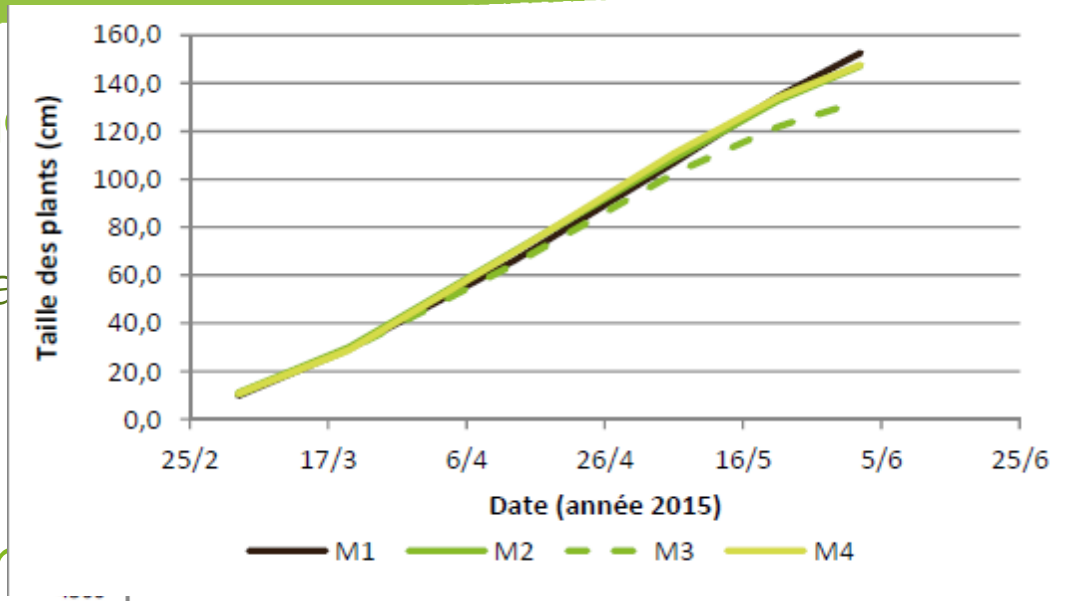
Mean value : 38% more weight with bark-Greenchar®

Hyp :

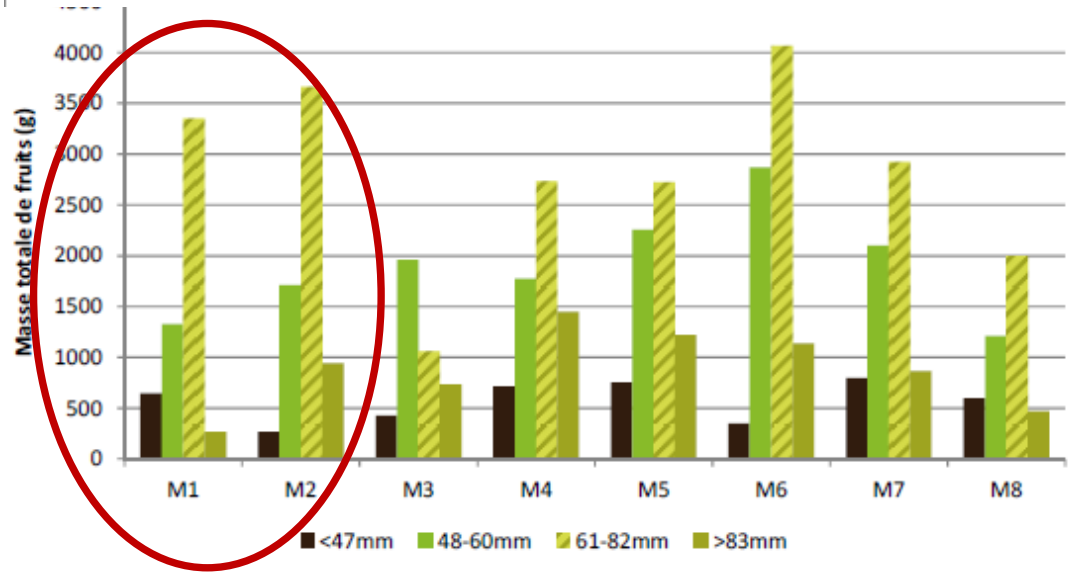
- Improve water retention ?
- Prevent fertilizer from lixiviation?

Soilless culture

- Biochar of poultry m
  - Fertilizer : 0.5.7.
  - Analysis : 85% P availa
  - => organic fertilizer ?



- Results of trials on To
  - Similar growth
  - Harvesting : similar fo



Conclusion

- Still a lot of questions on mechanisms
  - Dynamics of availability?
  - Interactions with the N management?
  - Chemical characterization vs. macroscopic /agronomic effects?

- Phytoremediation
  - Valorization of the properties of biochars ? Interesting market for Florentaise, but new application

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Thank you for your attention