Florentaise : biochars for plants growth

Bordeaux, April, 27th, SUDOE Workshop
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
A significant international presence

- 5 factories and partners around the world

- 2016: Opening of our factory in China
1 R&D facility: 4000 m²
7 engineers and 3 PhD
13 Patents
1200 K€ R&D investments
1 Microorganism Homologation
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 and biochars
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
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
Soil culture results

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

  Around 30% weight more

  1 t/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 manure
  - Fertilizer: 0.5.7.
  - Analysis: 85% P available; 70% K available
  - => organic fertilizer?

- Results of trials on Tomatoes
  - Similar growth
  - Harvesting: similar for doses 6 kg/m³
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
Thank you for your attention