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la bioingénierie et de l'environnement*

**Paper No. CSBE13-053**

## **Influence of biochar properties on soil performance and plant response: Research gaps**

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**Written for presentation at the  
CSBE/SCGAB 2013 Annual Conference  
University of Saskatchewan, Saskatoon, Saskatchewan  
7-10 July 2013**

**ABSTRACT** Applying biochar to soil improves its functions and sequesters carbon (Verheijen, F. 2010). Biochar research is in its early stages and more scientific information from experimental data is very much needed to predict its effects on agricultural soils. The aim of this poster is to highlight the influence of physico-chemical properties of biochar on soil functions and processes. Variations in feedstock biomass and pyrolysis conditions could control the latter properties. That contributes to soil responses towards water retention (Saran, S. 2009). Pelletizing might provide a means to engineer biochar for a particular soil condition and to reduce its dustiness when applied to soil. Detrimental effects on human and the environment could occur if this irreversible operation is applied haphazardly. Thus, the behavior, fate and transport in soil profile are must be understood. Significant accumulation of toxins which can adversely affect the soil flora and fauna (Verheijen, F. 2010). The impact of biochar application to soil on plant productivity showed significant differences in most cases on yield and biomass. However, the predictability and certainty of such mechanism are not yet attained for the deployment of biochar on a large scale.

**Keywords:** Biochar – Pelletization – Soil Compaction – Soil Characteristics – Carbon Sequestration