Development of a Pacific Northwest Biochar Atlas

Translating the Results of Biochar Studies into Usable Information for Growers

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Morrison, US Biochar Initiative
“the product of heating biomass in the absence (or limited presence) of air to at least 250°C”

- Johannes Lehmann, Biochar for Environmental Management, 2015

• Biochar specifically refers to soil amendments or carbon used for environmental management
BIOCHAR: feedstock origin impacts physiochemical properties

Hazelnut

Juniper

Poultry Litter
BIOCHAR: feedstock origin and production conditions impacts physiochemical properties

Difficult to predict how biochar will interact with soils and plants
BIOCHAR: How do we synthesize information?

- Builds healthy soil
- Sequesters carbon
- Reduced acidity
- Increases soil water holding capacity
- Retains nutrients
- Increases soil microbial abundance

Biederman and Harpole 2012. GCB Bioenergy
BIOCHAR: Barriers to adoption

- No general recommendations
- One-plant one-biochar studies have limited impact
- No predictive tools
- No standard labeling requirements
- Lack of communication from early adopters
- Price and source

How can we move from inception to adoption?
The four goals of the PNW Biochar Atlas

- Synthesis studies that measure how water behaves in different soil types amended with commonly available chars.
- Facilitate communication from early adopters
- Build predictive and decision support tools
- Connect biochar suppliers with growers
BIOCHAR: overcoming barriers with decision support tools
Future of the PNW Biochar Atlas

• Synthesis studies that measure how water behaves in different soil types amended with commonly available chars.

• Surveys to evaluate the online tools.

• Build more case studies
The discovery of **BIOCHAR**: coupling soil science & waste utilization

Bioenergy \{ Bio oil, Heat, Syngas, Char \}

Will adding charcoal to soils improve soil health and increase crop productivity?