



Biochar “Hot Shots” Academy

June 19 – 30, 2023

Draft Syllabus

(Updated 1/4/2023)

Day 1 – Biochar Overview

- Welcome & Student introductions
- Syllabus review
- Intro to Biochar
- History & heritage of biochar
- Current biochar industry overview
- Carbon cycle & biochar
- Climate change & biochar: IPCC, mitigation, adaptation, NETs, CDR,

Day 2 – Biochar Production

- Biochar production: production parameters
- Biochar production technologies
- Co-products
- Feedstocks
- Material handling – transportation
- Demo of low-tech biochar production (weather dependent)

Day 3 – Sampling, Analysis, Standards, Certifications

- Biochar sampling
- Biochar analysis: where, interpretation, why
- Standards
- Specifications

Day 4 – Agricultural Uses

- Lessons learned & myth busting
- Cost/benefit
- Climate resilience
- Nutrient leaching impacts
- Water use efficiency
- Setting up trials
- Application techniques
- Case Studies
- Organics Management on farms



- Compost & other methods of charging
- Feed char

Day 5 – Field Trip – Cornell, Dairy Farm, etc.

Day 6 – Non-Ag Uses

- Building materials
- Urban tree planting
- Stormwater management
- Filtration
- Remediation
- Well capping
- Anaerobic digestion
- Batteries & beyond

Day 7 – Carbon Markets

- Overview of Biochar Carbon Market eco-system
- Puro
- CarbonFuture
- VERRA
- Artisanal C Sink
- Life Cycle Assessments

Day 8 – Economics of Biochar Production & Use

- Financing mechanisms and business models
- Circular Economy examples
 - Small holder
 - Large scale Crop Residues
 - Waste Management: sludge, manure, wood

Day 9 – Wrap-Up & Graduation

- Framing biochar: UN SDGs
- Adaptation
 - Forestry Management
 - Loss & Damage Projects

Day 10 – Field Trip (1/2 day) to Rochester Institute of Technology & mushroom farm