QUALTERRA
Innovations for Agriculture and Sustainability

Northwest Bioenergy Summit

David Drinkard – Qualterra VP of Biomass Processing Division

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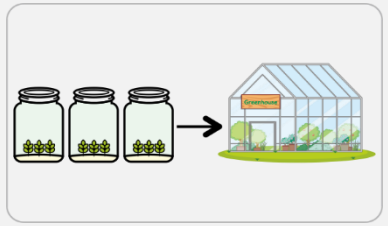
PROPAGATION



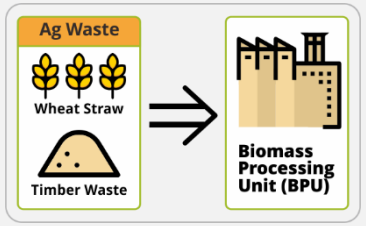
1.6 million
plants produced

VALIDATION

Molecular Plant Testing

- Virus screening
- DNA True-To-Type
- Confirm New Varieties

REGENERATION



Biomass Mitigation

Biochar production

Tons of carbon offset

Better Soils, Plants, Yields and Profitability in a Sustainable approach for farmers

System Approach

- Moveable/**Portable** gasification system
  - Minimal infrastructure required
  - Located near feedstock locations
- Modular design for **scalable** production capacity

- Continuous feed, **Fully autonomous**
- Designed for **Feedstock Flexibility**
- Controlled Parameter to produce the right product for the right application – **Superior Results**!
- Proven Technology with over **25,000 hrs run-time**

Potential Revenue

Tipping Fee	
Price/Ton	Revenue/Year
$30	$13,500
$50	$22,500
($30)	($13,500)

Energy*	
Rate	Revenue/Year
$.12/kWh	$44,676
0.6kWh	$18,360
$1.00/therm	$10,440

Biochar Revenue	
Price/ton	Revenue/Year
$500	$56,000
$1,000	**$112,000**
$1,500	$168,000

Carbon Credits	
Price/Ton	Revenue/Year
$50	$3,920
$100	$7,840
$150	$11,760

* Energy based on 50% utilization

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What is Biochar?

Biochar Production

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High Quality Biochar Production

$C + O_2 \rightarrow CO_2$

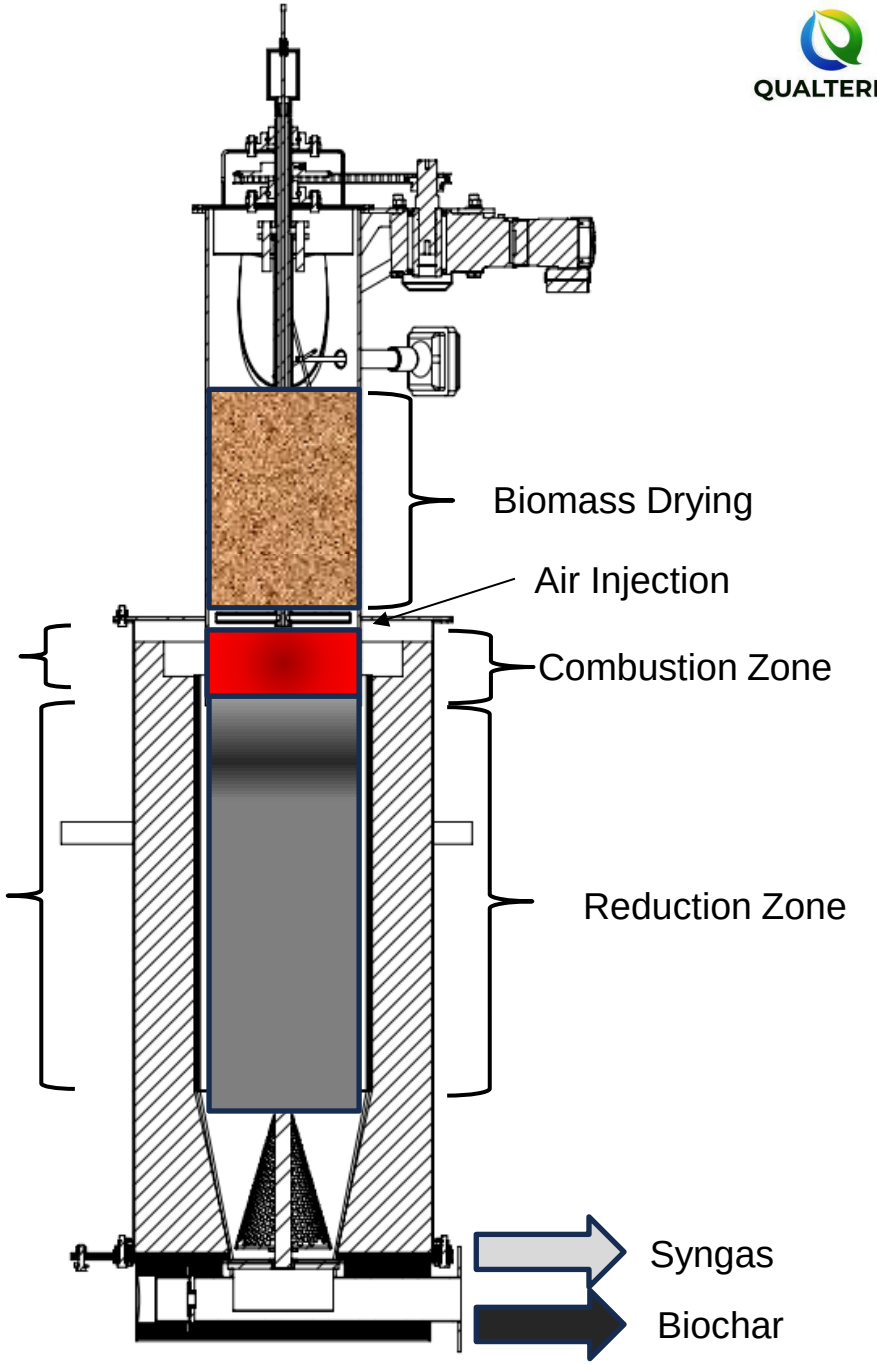
$2H_2 + O_2 \rightarrow 2H_2O$

$C + CO_2 \rightarrow 2\,CO$

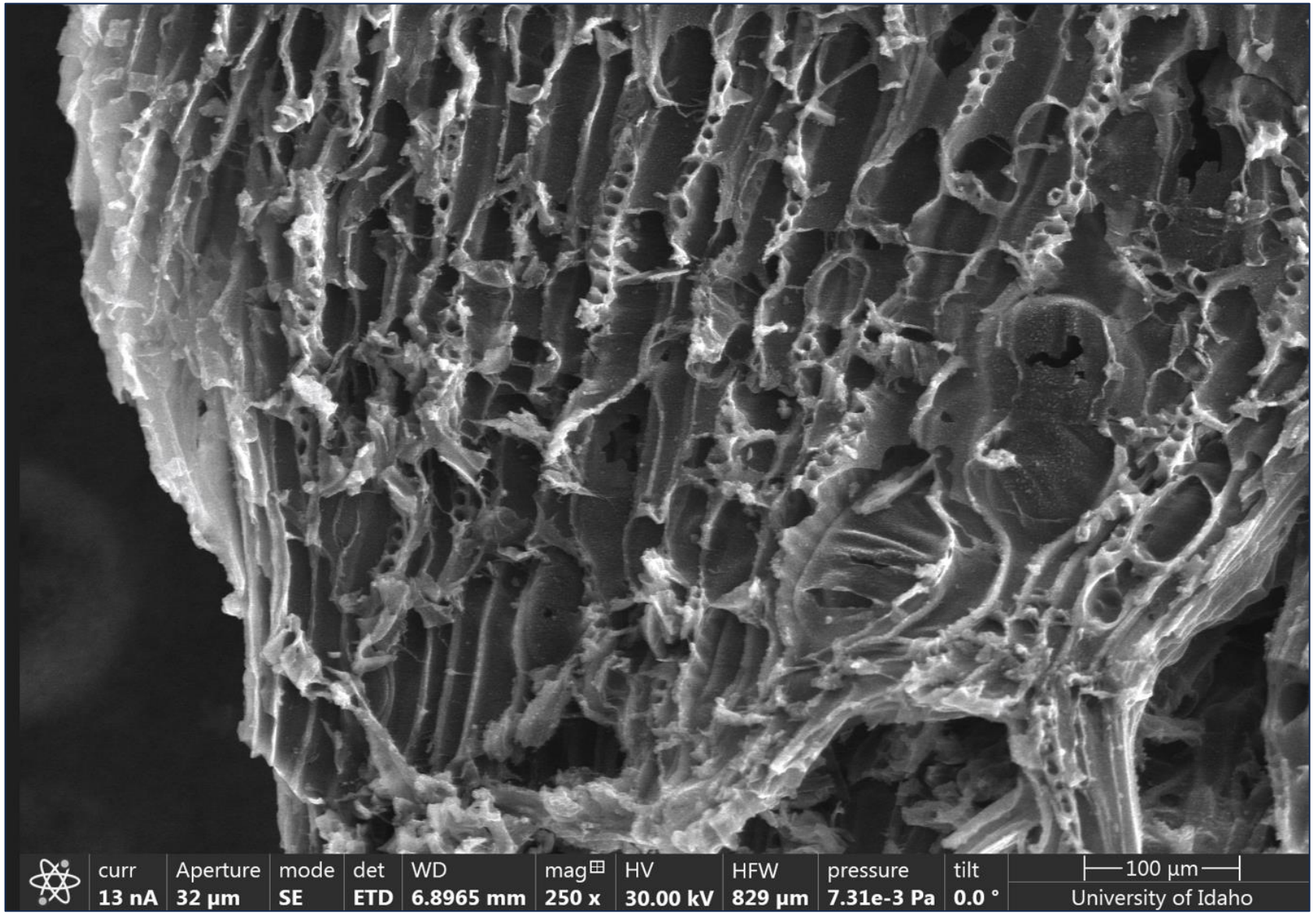
$C + H_2O \rightarrow CO + H_2$

$CO + H_2O \rightarrow CO_2 + H_2$

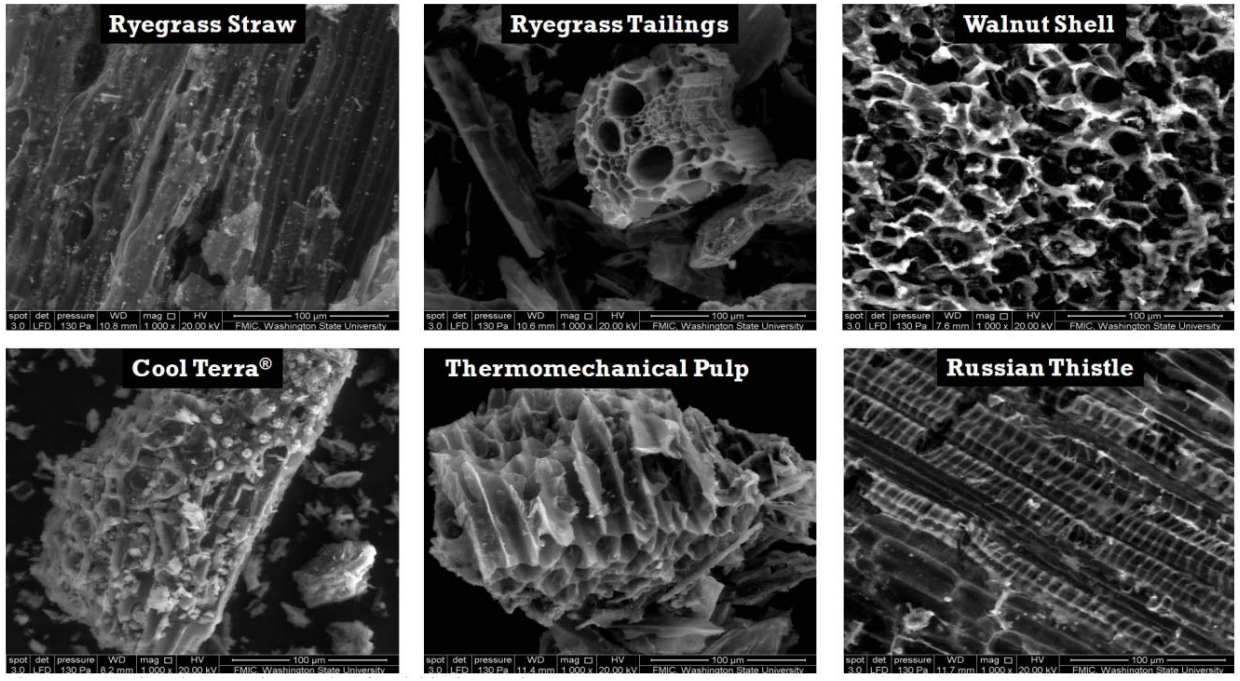
$C + 2H_2 \rightarrow CH_4$



High Quality Biochar



Not all Biochar is Created Equal



Processing Variations:

- Feedstock type
- Temperature
- Dwell time
- Amount of oxygen and water

Characteristics:

- Micro porosity structure
- Surface area
- Carbon content
- Nutrient content
- Conductivity

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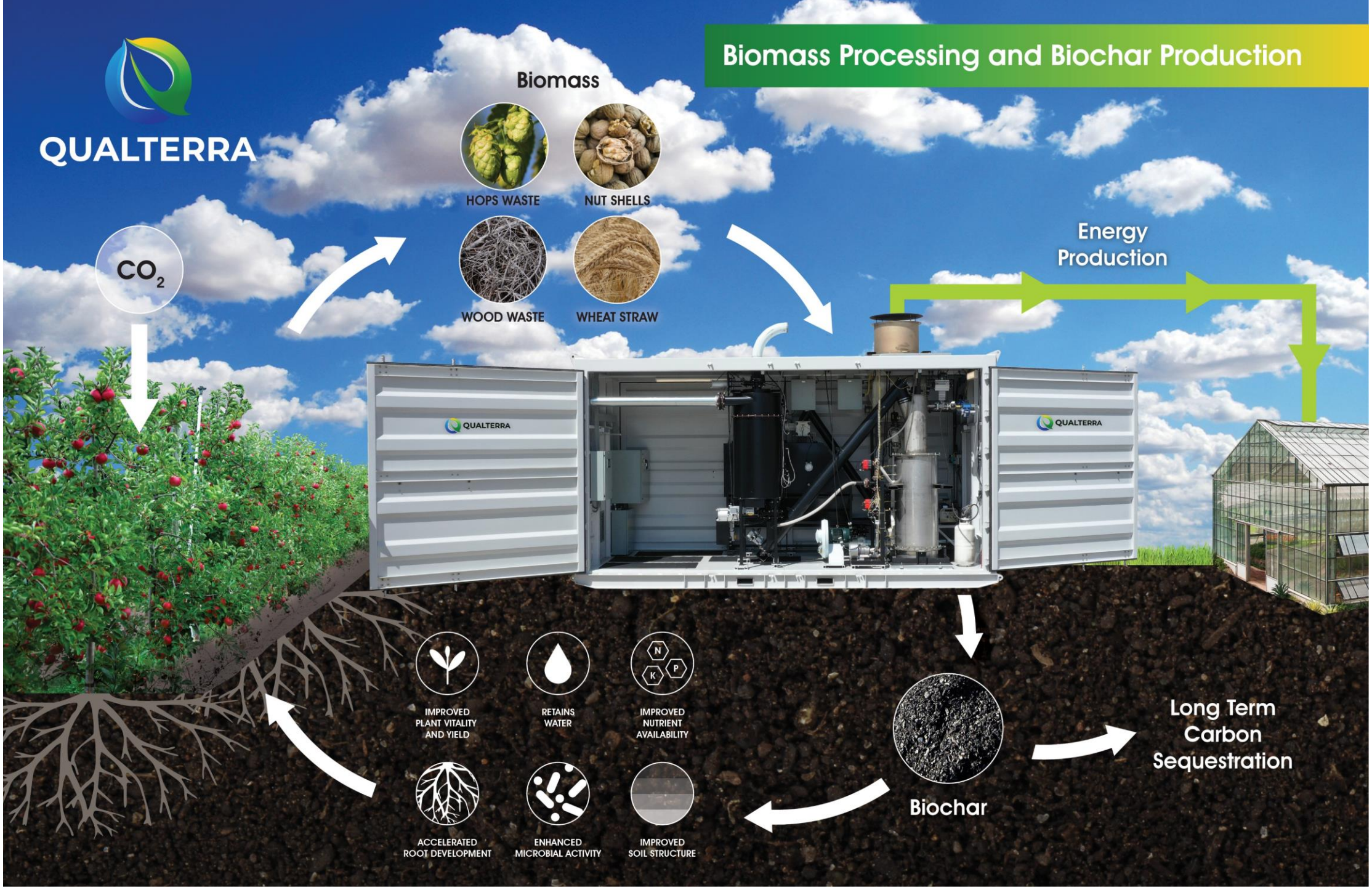
Volume
Value
Readiness
Building Materials
Livestock Feed
Volume
Value
Readiness
Packaging Materials
Volume
Value
Readiness
Filtration
Volume
Value
Readiness
3D Printing
Volume
Value
Readiness
Remediation
Volume
Value
Readiness
Fuel Cell
Volume
Value
Readiness
Gardeners
Volume
Value
Readiness
Carbon Offsets
Volume ? ? ? ? ?
Value
Readiness
Agriculture
Volume
Value
Readiness
Low
Low/Medium
Medium
Medium/High
High or Immediate
Biochar
Markets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Biomass Processing and Biochar Production
Biomass
HOPS WASTE
NUT SHELLS
WOOD WASTE
WHEAT STRAW
CO_2
Energy Production
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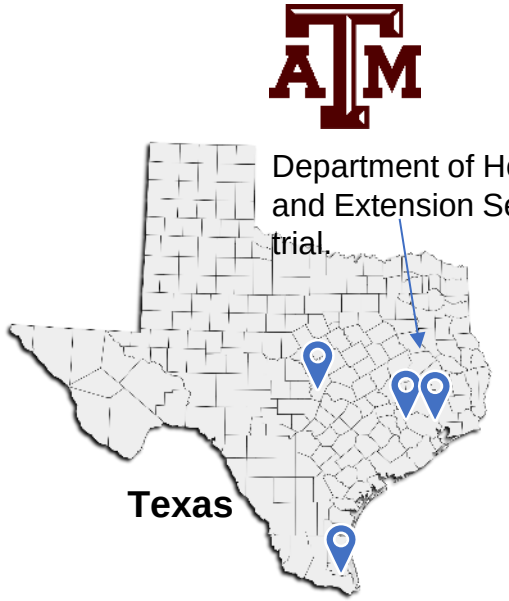
QUALTERRA
IMPROVED PLANT VITALITY AND YIELD
RETAINS WATER
IMPROVED NUTRIENT AVAILABILITY
N
K
P
ACCELERATED ROOT DEVELOPMENT
ENHANCED MICROBIAL ACTIVITY
IMPROVED SOIL STRUCTURE
Biochar
Long Term Carbon Sequestration

Qualterra has deployed a portfolio of on-farm and University Extension based field trials as part of its 2024 biochar market development strategy.

A collaborative, shared-cost approach that encompasses 27 field trials in 13 different crops, across 52 acres and 3 states.

Washington State

Flagship on-farm trial as part of the WSU Extension Service
2024 Smart Orchard Project.



Department of Horticulture and Extension Service field trial.

Texas

Louisiana

Partnering with a global consumer brand to improve soils in their pepper fields and fulfilling their ESG mission.

Crops included in Qualterra's trial portfolio:

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Additional Activity

Department of Energy Contract:

- Decarbonization of the construction industry
- Partner with WSU and CEMEX
- Biochar in concrete - making concrete carbon neutral

Filtration:

- Working with partner to create unique biochar for PFAS removal from water

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More on Qualterra Biochar Field Trails:

Day 2 Building Markets for Biochar

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