

QUALTERRA – SCALABLE BIOMASS PROCESSING TECHNOLOGIES FOR SUSTAINABLE AGRICULTURE

Seanna Hewitt, Qualterra, Inc., Pullman, WA, USA
seannah@qualterraag.com

David Drinkard, Qualterra, Inc., Pullman, WA, USA

Amit Dhingra, Qualterra, Inc., Pullman, WA, USA and Texas A&M University, College Station, TX, USA

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Qualterra is a U.S.-based agriculture-technology company (Pullman, Washington) that strives to develop innovations to support sustainable agriculture. In alignment with this mission, we have pioneered a patented Biomass Processing Unit (BPU) technology that processes any agricultural biomass waste into unique, consistent-quality formulations of biochar while generating renewable energy.

Each Qualterra BPU is housed in a rugged, modular shipping container and combines time-tested gasification and energy generating processes with modern, automated control systems, and they are adaptable to accommodate a variety of biomass types and site requirements. Moreover, during the gasification process, BPUs generate renewable energy as syngas that can power a generator, deliver energy to a boiler system, and/or heat a facility located adjacent to the processing unit.

The biochar produced from the BPU operations is a stable carbon sequestration medium that imparts improved water and nutrient holding capacity, aeration, and microbial activity when used to amend agricultural soils. These improvements enable plants to use less water and fertilizer while increasing resilience to stresses. The water and nutrient holding capacity represents an important climate adaptation benefit as drought and high temperature conditions become more prevalent.

The scalable and portable nature of the BPUs makes them ideal for positioning at sites of prolific agricultural activity, where large amounts of crop waste are generated. This waste can be converted into biochar and reapplied to the fields/orchards to bolster crop and soil health. Recently, Qualterra set up and operationalized a first-in-kind Agriculture Regeneration Station (ARS) to demonstrate how the BPU technology integrated with an agriculture operation can serve as a full-lifecycle approach to sustainably processing biomass waste and enhancing crop production.

Overall, Qualterra's BPU technology and biochar products offer a comprehensive solution for modern production and recycling challenges in agriculture. As we continue to promote and expand on this technology, Qualterra aims to establish the foundation for broad adoption. These efforts are directed towards propelling the agricultural sector into a more sustainable and resilient future.



Figure 1– Qualterra's biomass processing technology combines gasification and energy generating processes with modern, automated control systems to convert biomass into renewable energy and biochar. The Biomass Processing Unit (BPU) is housed in a shipping container and is portable and scalable to accommodate a variety of biomass types and site requirements. The BPU is portable and scalable to meet the needs of the end user.