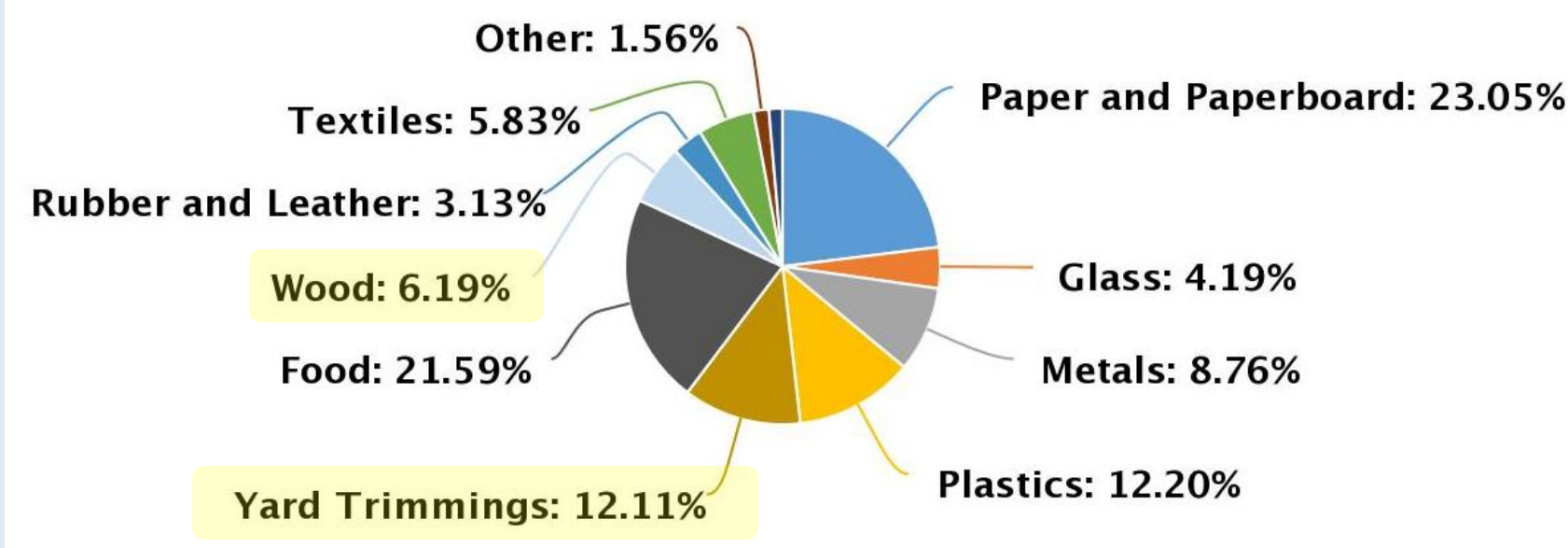


Motivation

Green Waste makes up **18.3%** of the Total Municipal Solid Waste in 2018



Green waste can be used as a feed for HTL, but it isn't as efficient as food waste unless it's pretreated

Hypothesis:

Explore how decreased particle size & lower green waste crystallinity due to ball milling contribute to increased biocrude yield from green waste

Method:



Step 1: Grind up and ball mill BDP Green Waste



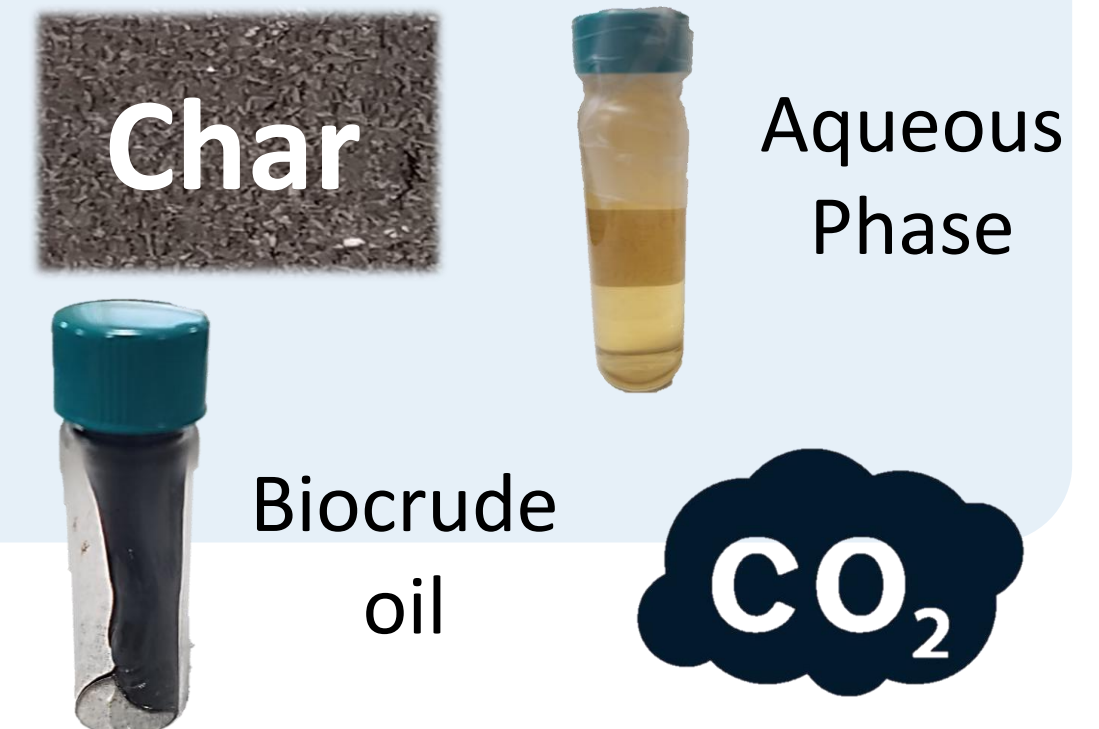
Step 2: Sieve to 4 particle size ranges



Step 3: React 10wt% of feed with the rest DI water in a HTL reactor

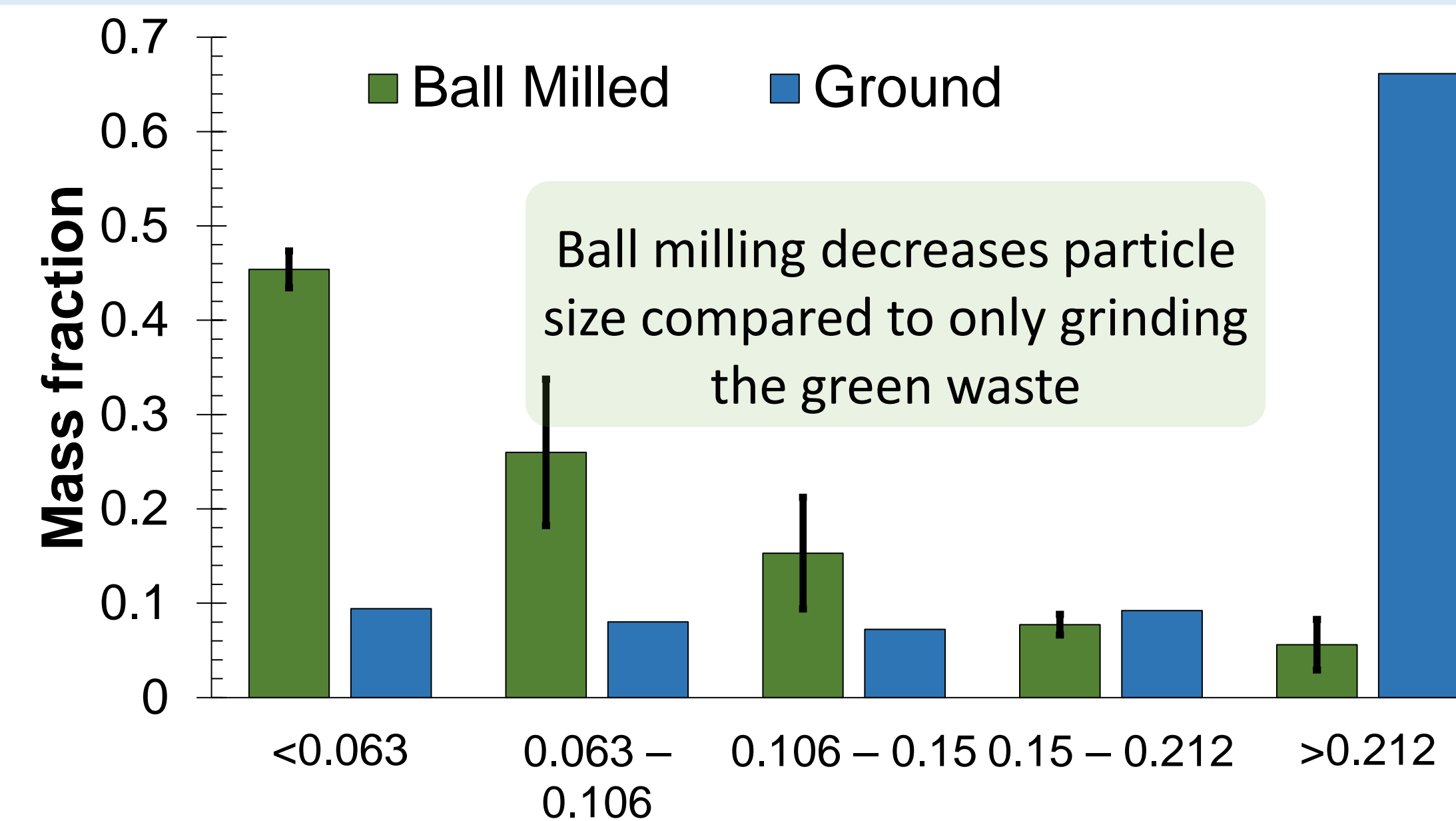
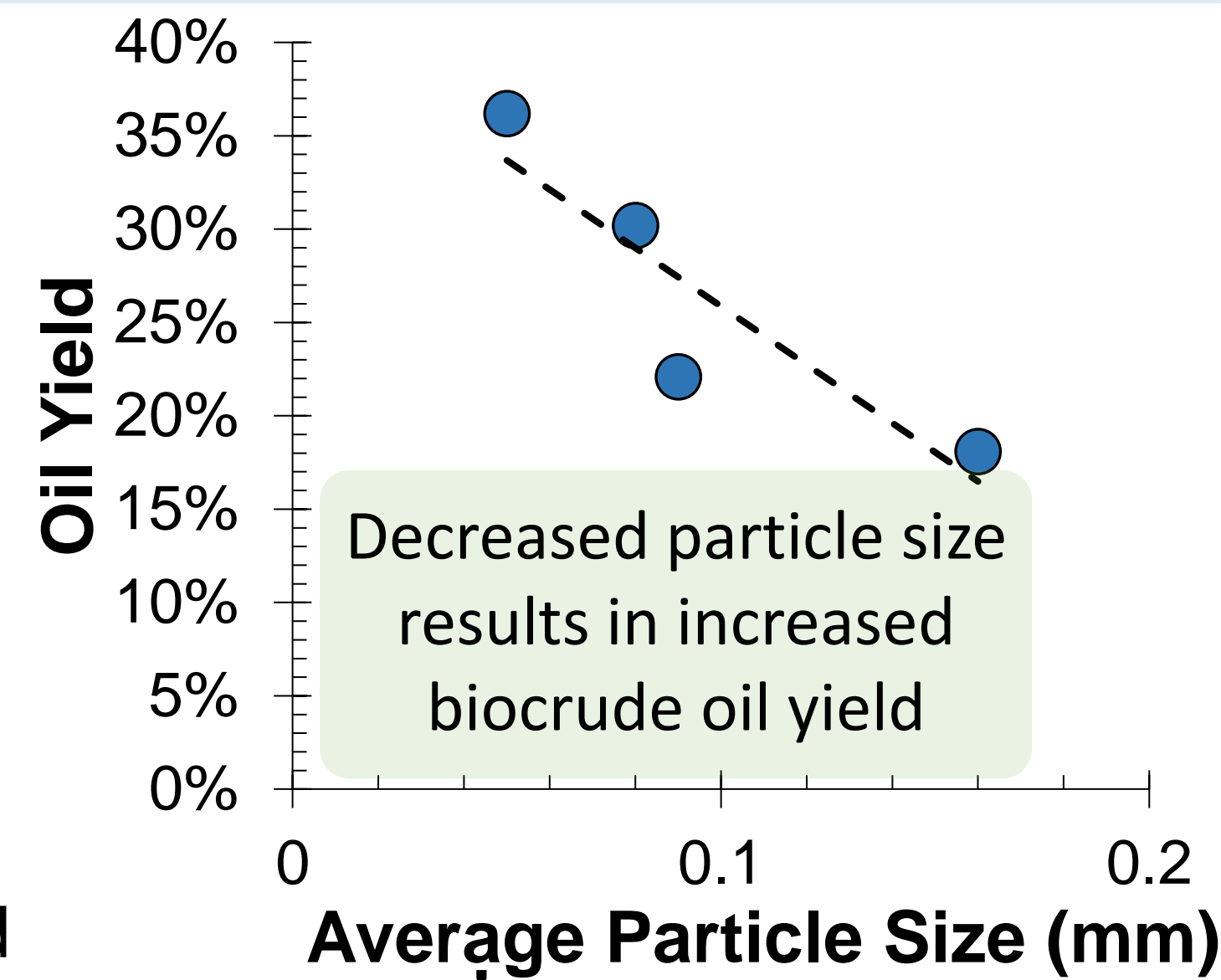
T= 300 C
P= 1700 psi
t= 1 hour

Step 4: Separate and analyze end products



Results

Due to decreased crystallinity and decreased particle size, ball milling provides a larger oil yield



Conclusions/Future Work

- Ball milling green waste increases biocrude yield compared to grinding
- Determine effect of the ash content on oil yield
- Explore if ball milling can be used for HTL feeds other than green waste, such as cellulose or lignin

References

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