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Thoughts on biomass prep for profitability and processing

Before we begin, I'd like to introduce myself as a hemp processor that wants to get this information out there to make things profitable and easy for everyone in the hemp game. This document was created with industrial hemp biomass in mind, and more specifically to increase profitability for all sectors of the industrial hemp supply chain (farmers, brokers, extractors/processors and any downstream / waste product consumers). Everybody is chasing the highest margins they can get and I hope to assist everyone I possibly can to that end.

As such, it's assumed that hemp sellers (farmers) are wanting to command as much possible PPP (price per percent-pound). Brokers and buyers want to maximize every dollar they spend on hemp biomass from the farmer, and those same brokers and buyers want to get the most action for their dollars when paying per pound or on a split with a processor to take the hemp into crude, and again to take the crude to a finished product.

It's also been my understanding and one that needs to be communicated to many farmers that hemp seeds and hempseed oil contains no cannabinoids, and that in a price/lb processing arrangement any percent of seeds in the biomass will reduce margin by whatever weight % the hemp seeds make up. It's worth noting here that we have seen biomass come in with as much as **40%** seed content by weight. If you are selling that crude on an open market, the hemp seed oil extracted will reduce the total cannabinoid % in the crude and reduce the outgoing product's value as well. As such farmers should place an extreme emphasis on keeping their crop feminized to avoid seed production & maximize cannabinoid production.

The stalks and any part of the root have a much lower cannabinoid content relative to the higher cannabinoid parts of the plant (buds, leaves and sugar leaves). Larger stalks and roots should be assumed to contain a negligible amount of cannabinoids.

From a buyer's perspective, it is good to be skeptical of claims of high CBD/CBD-A content. From experience, sellers advertise inflated cannabinoid content (often 18-20%+) obtained by cherry picking select bud samples for testing. Often times, those samples come from sacks that also contain considerable amounts of shredded whole plant material and even seeds. To expect the COA's from those bud samples to be indicative of the CBD composition of a semi trailer full of hemp is only going to end poorly! The best bet is to shred and homogenize samples from multiple bags to send to the lab doing potency testing.

Onto some pictures - Note that these are nearly all spent material samples and sometimes a bit sun bleached.

This material is seedy, but overall low stem/stalk to bud ratio and hammer milled at low speed to fit through a 1/2" screen. Smallest particle size is above 1/8"

Ideal material, low stalk/stem content, lots of buds and sugar leaves, hammer milled at low speed to fit through a 1/2” screen

Very stalky material, high ratio of stem/ stalk to bud and leaves. This is difficult to process as-is because it pokes holes in the processors mesh bags and makes filling those bags to a given weight very difficult. Also very difficult to load/unload as the thick stalks like to intermesh and stick together. This material cannot be hammer milled at low speed because of the fibers in the stalks which will clog up and stall the hammer mill.

This is the same material as in the above picture after size reduction through a chipper, which brings max length of stalk/ stem pieces down considerably. We are able to fit nearly 50% more material in a bag after size reduction like this which results in faster lb/day rate and turnaround time

Not Pictured - because these lots were all rejected! - anything completely ground into a fine powder (kief) falls through mesh bags and clogs filters and pumps. Ideal material profile for alcohol/ethanol extractors is between 1/8" and 3/8" and will nearly all pass through a 3/8 or 1/2" shaker screen. If your processor specifies that finely ground is how they want material, you can certainly do so (this is what some CO2 extractors desire), but most processors desire a specific size profile that is considerably larger. As I like to remind clients, we can always size reduce harvested material further, but size increasing is nearly impossible.

Also not pictured - lots of rope, screws, nails, horse poop, dog turds, carrots, wire ties, zipties, lighters, plastic snow fence, wooden sticks and 2x4s, cigarette butts and all manner of other non-hemp material that was swept off the barn floor into the super sack to increase weight but has no cannabinoid content whatsoever!