

Harvesting Hemp: a challenge we all face

Going into Harvest 2018 American industrial hemp farmers face two challenges: starting & finishing, seeds & harvest. Hemp is a growth industry starting from scratch after a 70+ year hiatus. Simply put there is no infrastructure, only what we create.

There are two bottlenecks bringing hemp from farm to market. The first is identifying and securing the right genetics, seeds or clones, to plant. Assuming a successful summer one is then faced with cutting, drying, curing, and storing the crop. There are no off the shelf harvesting tools or solutions for small scale, let alone large, hemp crops.

You can use the tools you have to harvest hemp. If you're growing hemp to harvest for CBD extraction you are primarily interested in the flowers at the top of the plant. The upper 6 inches contain the trichomes, the plant structures that produce CBD and other cannabinoids as well as terpenes, the volatile aromatics that give hemp its subtle but important characteristics.

Treat the fluid filled trichomes gently. Breaking them will decrease the cannabinoid and terpene content of your harvest and ultimately reduce its market price. The lab results of your harvest are your best selling tool. **high cannabinoid and terpene levels = a high price**

Only plant what you can harvest + 10% (in case you get lucky). There's a learning curve when working with a new crop coupled with a market that mercurial with few rules of thumb. Better to plant too little than overextend yourself and washout.

The larger your hemp crop the more automated the harvest needs to be. Hand cutting works on a small scale, an acre or less. Mechanization is the only answer the more you grow. But even cutting the top 6 inches isn't ideal.

If you're growing hemp for CBD extraction, it's the flowers and their trichomes you're interested in. Unlike growing hemp for fiber, hemp for the CBD market is planted 5 ft on center instead of 6 inches on center. The former emphasizes flower growth, the latter long, tall stalks. While the largest flowers tend to be on the top of the plant, significant flower growth is on side stalks too. To leave these flowers behind is to leave money on the table. Yes, you can second cut the next 12 inches as a B grade but that doubles the workload. Ideally hand cutting should follow machine cutting.

The gotcha is that some hemp strains (cultivars) are new and unstable, showing wide variation between individuals in the a field. Setting machines to handle variable plant heights is tricky at best. Plant closer together to reduce side growth may well result in a smaller flower mass.

When you harvest can be your make-or-break point. If you take the advice of marijuana farmers, in person or online, their advice will emphasize high THC levels. Wander over 0.3% THC and your crop is non-compliant. CBD matures before THC. Don't wait until 15% of the trichomes turn amber. If you do, you'll have missed the window for maximum CBD and may well find the THC levels will rise turning your hemp harvest into low quality (and illegal) marijuana. Resist the temptation to push your harvest date out to increase yield. Cut early and your crop will have a higher CBD:THC ratio, a number many based their buying decisions on. I'd rather have 100 lbs of 12:1 hemp than 110 lbs of 10:1. YMMV

Cutting is one thing, drying is another. 75% of the flower weight is water. Drying fresh hemp is the second challenge after cutting. Because we want to preserve the terpenes heating is not an option. Terpenes begin to evaporate at less than 120°F. Hemp can not be dried like field corn or tobacco. The ideal is 60/60 dark. 60°F at 60% humidity in the dark. Air movement but no stiff breezes. New hemp farmers probably won't have a perfect drying shed. Not only are the temperature and humidity important but cleanliness is too. One's harvest and products made with it may well be

subjected to inspection and analysis before entering the supply chain. Pests, molds, bacteria and mycotoxins will render your crop unsellable. Forget using barns with old manure, sheds with rodents, or other similar outbuildings. Investing in a temporary tent canopy or hoop house beats risking your hard work on questionable hygiene practices.

First you dry then you cure. Don't think you're done because your cut hemp is dry. Curing is the next step. Slower and arguably just as critical because it too drops to the market price. Learn how to cure from cannabis farmers. Google Jorge Cervantes' Youtube videos on the subject.

Bring trichomes to the market. Given that you're growing for CBD and CBD is made in the trichomes on the flowers, trichomes are what you're selling. Your customers don't want whole hemp plants because that's not what they can use. Separate the trichomes from the flower, get them lab analyzed and sell them as a base ingredient to one & all. They can be used to make concentrates like CBD oil, infused butter for edibles, isolate, and other products.

Make haste slowly. *Aldus Manutius* Start small, take notes, scale up next year. Not only is there no physical infrastructure there's no oral history or best practices and neither 4H nor your county extension agent can offer much help. If you're committed to hemp you've signed up to forge a new frontier. There's risk and reward. Lessons to be learned and shared. We're all in this together.

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