



NORTH CAROLINA AGRICULTURAL
AND TECHNICAL STATE UNIVERSITY

HEMP- HARVEST AND POST HARVEST CONSIDERATIONS

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AGGIES **DO**

Research Objectives

1. Observe how different CBD varieties perform in North Carolina
1. Determine what fertilization rate has the highest CBD percentage and yield within the allowable THC limit (less than .3% THC)



Should I use Clones or Seedlings?

- Clones are taken from a “mother” plant which should ensure the clone being female
- Seedlings must be sexed before planting, male rates in most varieties is 30-55%
- It was estimated that NC had a male incident rate of about 15-25% in our fields this year.
- Pollen can travel up to 1-5 miles





Harvest

- Harvest will be your largest labor cost, must decide to hand harvest or mechanically harvest
- It will take approximately 5-10 people 8 hours to harvest an acre (roughly 2000 plants)
- Then you must transport your harvest to curing/drying chamber
- Space needs to be a big consideration, most field plants will take up 3-5 square feet unless bucked from the stalk



Drying is carried out inside a shipping container where plants are hung upside down.

- Temperature range: 60-70 °F (optimal)
- Ventilation requirement: one air exchange per hour.
- Buds may take 1-12 days to dry, depending on the initial moisture content, bud size and density.
- If the plan is to extract and distill CBD oil, then plants just need to be dried.
- If the plan is to sell to smoke, then buds need to be cured.



Ref: Robert Bergman, 2017, Harvesting, Drying and Curing Indoor Marijuana Plants

- **Curing** is carried out at NCA&T inside a 20 ft. shipping container using an air conditioner, and fans. (Stable temp of 60-72 degrees is desired)
- Drying is done at a much slower rate when curing, usually taking 2-4 weeks to dry
- After drying, buds are placed in curing containers (airtight Tupperware) to bring the **RH to stabilize at 62%**.
- **If RH is higher than 62%** in curing container, then open the containers to reduce moisture (or use dehumidifier)
- Proper **curing will take about 1-3 months**.

*Ref: Robert Bergman, 2017, Harvesting,
Drying and Curing Indoor Marijuana Plants*

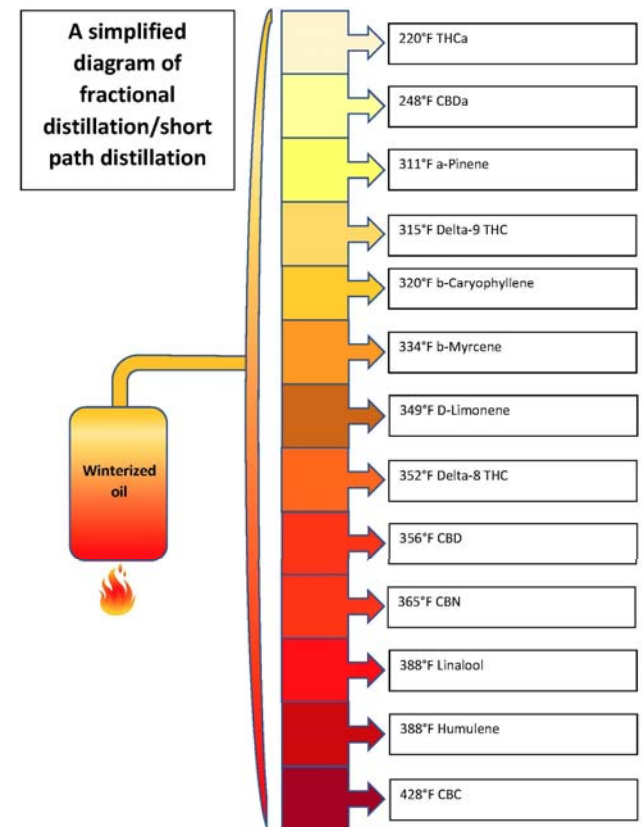






Distillation

- **Evaporative distillation** is used to **fractionate crude CBD oil** to its many chemical constituents.
- Distillation can yield **high purity** and **high value products** for the farmers and processors





- Price per pound of **dried CBD flowers** is \$15-\$60 depending on CBD content and condition of the flower.
- Price per pound of **cured CBD flowers** is about \$250-\$1000
- Price per pound of **distilled CBD oil** is \$2,000-\$4,000
(~12 pounds of dried flower is needed to produce a pound of CBD oil)
- Currently, our **cost per plant** is \$15.95, without labor. This includes irrigation, nutrients, soil, genetics and a shipping container for drying.
- We harvested plants that weighed 90 grams up to 3,136 grams.
- This crop should be treated like a **horticultural or specialty crop**, needing **intensive management**.



















Thank you, Aggie Pride!

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NCA&TSU Industrial Hemp Page- <https://www.ncat.edu/caes/hemp-program/>