hemp contracts & tips for floral hemp

Dr. Sanjun Gu
Extension at A&T
“Although hemp is still a relatively new crop in North Carolina, contracts for hemp are similar to contracts for other products. Parties should conduct business with other reputable parties and conduct their own due diligence before entering into an agreement. Parties should consider consulting an attorney licensed in North Carolina to review agreements before signing.”
Good to Go

✓ Delivery point and price are clear and timely
✓ Buyer places a portion of funds in escrow to cover the purchase
✓ Purchase price for flower is based on delivered weight and percent CBD
✓ Required testing, sampling protocol, and acceptable limitations are clearly described
✓ A third-party testing facility is mutually agreed upon between producer and buyer
✓ Buyer is providing plant material in the form of seeds or transplants
✓ Buyer is registered with the Secretary of State
Proceed with Caution

? Post-delivery location of product is unclear
? Payment will be made all or in-part with product instead of cash
? Purchase price for CBD is based on delivered weight only
? Non-compete clause preventing selling to another buyer for a period of time after the contract has been filled
? Exclusivity: Restriction for contracting with any other buyer for the current year or multiple years
? Buyer completely dictates the variety to be grown
? Purchase price for floral bud is based on acreage only
Steer Clear

✗ Company contact information is not disclosed in the contract
✗ No specific purchase information is included
✗ Payment will be delayed until final product is marketed
✗ Assigning grower license to buyer
✗ Non-disclosure provision about disputes or contract terms
Hemp for Floral Buds (CBD)

- Do not grow hemp without a (good) contract!
- Fully understand the basics of hemp plants: dioecious, short day species, have pests, sucker
- Choose good cultivars from reliable sources
  - Low THC, high CBD, high biomass (buds)
  - Avoid male plants: careful with feminized seeds
  - Use good quality clones: avoid root bound
- Identify the ideal transplanting date(s)
  - Use transplants/clones
  - June to August
  - Adjust spacing based on planting dates
- Loam soil with good OM: 100-120 lb N/acre
  - Use raised beds
  - Avoid plastic mulch if not well drained
- Treat hemp as a horticulture crop (tomato?)
  - Training/Staking/Pruning
- Remove any male plants
  - Know what your neighbor’s hemp
- Be ready for pests: pesticides limited
- Timely testing for THC
  - Watch plants for female flower/Ask for a retest if hot
- Timely harvest
  - Get you labor ready
- Proper drying facility
  - Use buds, not leaves and stems
- Proper storage facility
  - Air-tight bags, cool and dry place, away from direct sunlight
Plastic mulch suppress weeds but cause problems in poor drainage field.
Pest Control

*Insects, mites, diseases, weeds*

- Minimum risk pesticides *(25b pesticides)*
- 10 pesticides approved by EPA (12/19) for use on hemp
  - 9 biopesticides
  - 1 conventional pesticide

https://www.epa.gov/pesticide-registration/pesticide-products-registered-use-hemp
NC Industrial Hemp Pilot Program
Request THC Testing
https://apps.ncagr.gov/agrysysportal/industrialhemp/sampleresquest or google “NCDA Hemp Sample Request”

WHEN TO REQUEST SAMPLE
At flower initiation

YOU WILL BE CONTACTED BY
• Hemp Sampling Coordinator within ~1 week, and
• Hemp Inspector within ~2 weeks of your request

YOU WILL RECEIVE
An email confirmation immediately after your request is submitted

If you do not get an email confirmation or hear from the Hemp Coordinator or Inspector within a week, send an email to IndustrialHempRequests@NCagr.gov

NC Industrial Hemp Sample Request Form

Please note:
• For multiple counties, please submit a form for each county.
• If more than 3 varieties are flowering, submit an additional form as needed.
• Variety photos: Gray close-up of side view of blooming inflorescence. For further information on photos, please click here.
• For the crop address please give a street address closest to the location of the hemp crop that needs sampled or the first location that your specialist will need to meet you.
• If your location is difficult to find please use the Special Instructions section to help guide your inspector or any other comments you feel may assist your sample.

Licensee Name
Contact Name
License Number
Preferred Email
Preferred Phone
Flowering County
Crop Address
Harvest Date
Initiation of Flowering Date
Special Instructions
Varieties
Type variety name here and click the ‘Add Photo’ button below to upload your photo
Add Photo
Add Additional Variety

I'm not a robot
How to Take Photos for a Sample Request

https://apps.ncagr.gov/AgRSysPortal/industrialhemp/SampleRequestPhoto
Harvest considerations

*Timing is critical for high level of CBD... you finally get here...*

- **Timing**
  - 55 to 70 days after flowering (Sept to October): *check with your clone provider*
  - When majority of trichomes are milky to slightly amber in color;
  - When stigma turned orange

- **Methods: manually, plants are tough**
  - A saw or machete will do

- **Harvest buds for small scale; whole plant for large scale**

- **Plan well: labor and facility**
  - Let your sheriff know when transfer!
THANK YOU!
high tunnel vs. open field
bare Soil vs plastic mulch
for floral hemp buds

Sanjun Gu, Becca Wait, Guochen Yang and Valerie Giddings
Objectives

- High tunnel versus open field environment
- Plastic mulch versus bare soil
  - Both in a high tunnel and open field environment

This project is funded by the Golden LEAF Foundation!

- Planted in the 1st week of June
- Cultivars: Spectrum, Otto 2 and Otto x Spectrum
- Beds spaced 5’ apart
- Plants spaced 4.5’ apart in rows
Plugs: Carolina Canna, Madison, NC
CBD Hemp in High Tunnel

Early June (just transplanted)

Mid-June

Mid-July

Mid-August
Average Plant Growth: field vs high tunnel

Plant Height in **High Tunnel**

Plant Height in **Open Field**

- **Otto 2**
- **Spectrum**
- **Otto x Spectrum**
Plastic vs. Bare Soil Beds in High Tunnel

**Plant Height on Plastic Beds**

*Weeks Since Planting*

**Plant Height on Bare Soil Beds**

*Weeks Since Planting*

- Orange: Otto 2
- Blue: Spectrum
- Green: Otto x Spectrum

N.C. A&T
STATE UNIVERSITY
COOPERATIVE EXTENSION

www.ag.ncat.edu/extension
**Plastic vs. Bare Soil Beds in Open Field**

**Plant Height on Plastic Mulch Beds**

**Plant Height on Bare Soil Beds**

- **CM**
- **Weeks since Planting**

- **Otto 2**
- **Spectrum**
- **Otto x Spectrum**
High Tunnel

Field
**Dry Weight: Bare Soil vs Plastic Mulch**

**Plastic Mulch vs Bare Soil in Field**
- Dry Weight (gram)
- Buds: Bare Soil = 311.9, Plastic Mulch = 237.5
- Total: Bare Soil = 654.0, Plastic Mulch = 720.3

**Plastic Mulch vs Bare Soil in High Tunnel**
- Dry Weight (gram)
- Buds: Bare Soil = 480.2, Plastic Mulch = 399.9
- Total: Bare Soil = 1280.2, Plastic Mulch = 1341.3
**Dry Weight: Field vs High Tunnel**

- **Buds**: Field - 274.7, High Tunnel - 440.1
- **Total**: Field - 687.2, High Tunnel - 1310.7

**Dry Weight (Buds): Cultivars**

- **OXS**: High Tunnel - 900.0, Field - 700.0
- **Otto 2**: High Tunnel - 800.0, Field - 600.0
- **Spectrum**: High Tunnel - 700.0, Field - 500.0
CBD (% Dry Weight)

**Open Field CBD**
- O x S
- Spectrum
- Otto 2

**High Tunnel CBD**
- O x S
- Spectrum
- Otto 2

Legend:
- CBD Bare soil
- CBD Plastic mulch

Source: www.ag.ncat.edu/extension
Total THC (% dry weight)

Field THC

- O x S
- Spectrum
- Otto 2

High Tunnel THC

- O x S
- Spectrum
- Otto 2

THC Bare soil  THC Plastic mulch
Preliminary conclusions

- Otto 2 appears to be the most vigorous and resilient cultivar (High Biomass)
- Plants in the high tunnel are significantly larger than plants in the open field
- There does not appear to be an advantage to using plastic mulch
- THC may be high in both field and high tunnel environments
Questions and Comments?

Sanjun Gu
Office: 336-285-4661
            336-285-4954
Email: sgu@ncat.edu