
GOOD HEMP
TM
Welcome:
Plant Spacing: Decisions About Your Hemp Field Design
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Arcadia
BIOSCIENCES

Plant Density: Decisions about your field design

- How types, varieties, timing and the quality of seed impacts field design
- Begin with the end in mind: Harvest plans, yield hopes, equipment and timing
- How Arcadia designs our varieties and ensure seed quality
- Questions and answers

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Decisions about hemp type impact field design

- Growing hemp for grain and fiber
- Growing hemp for smokable flower
- Growing hemp for CBD and other cannabinoids (biomass)

Decisions about hemp type impact field design: Grain and fiber

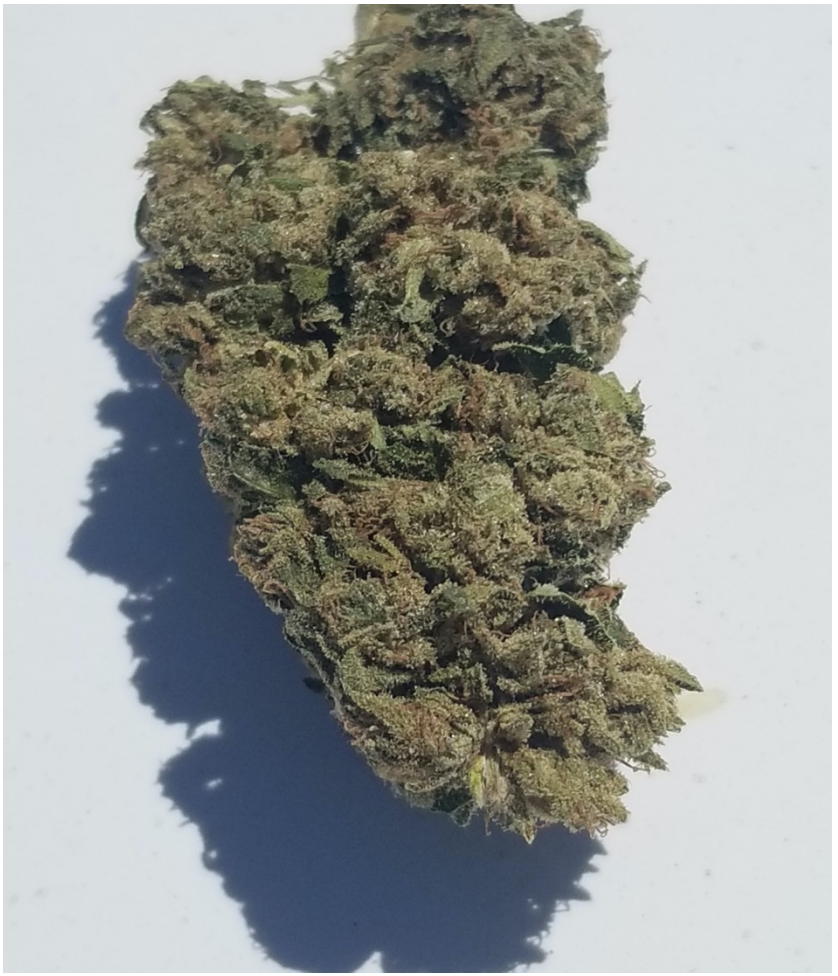
What are you growing?

- Planted like any other grain crop,
- Is harvested in two stages 1) by combine to harvest the grain and later by swather to remove the fiber
- Is direct seeded and
- Is planted at densities from 70,000 seed per acre up to 150,000 seed per acre
- Treated as a low value commodity crop with low inputs

Decisions about hemp type impact field design: Smokable flower

What are you growing?

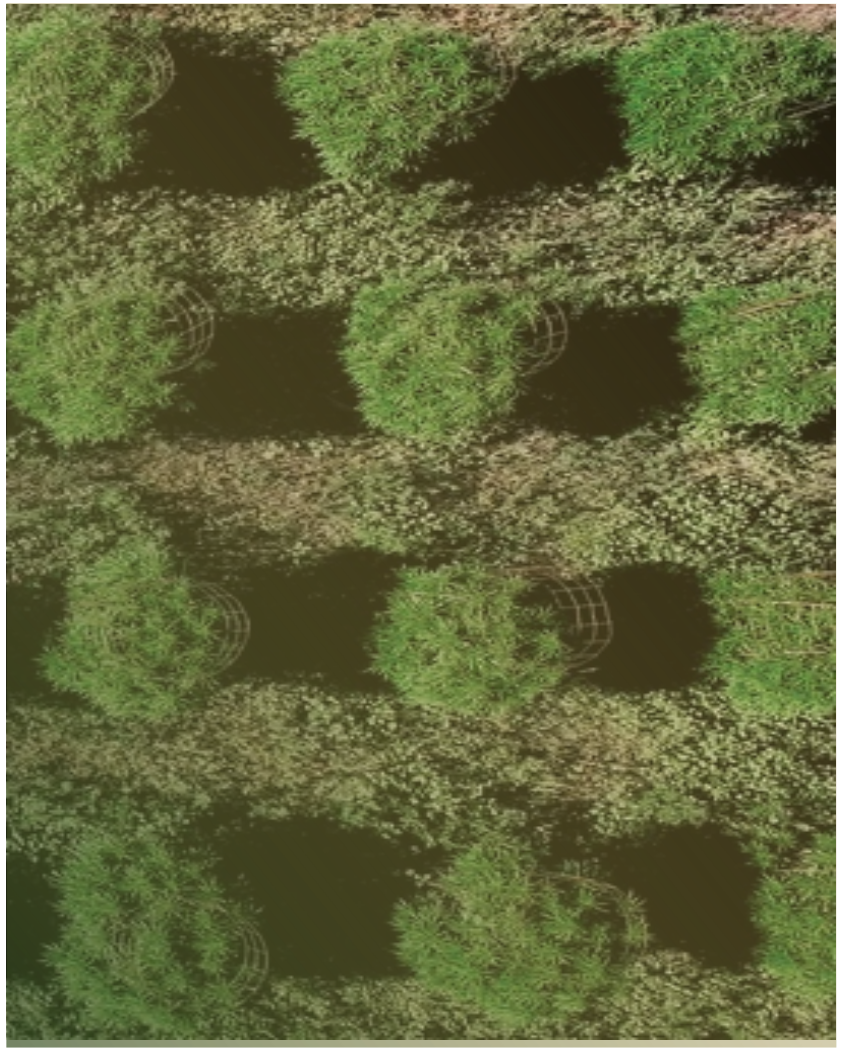
- Smokable flower is a niche market; a small percentage of acreage should be allocated
- Grown for quality not quantity
- Plant spacing like that for biomass but leave drive rows every 5 acres
- Drive rows allow for crews to enter field without disturbing the whole plant



Decisions about hemp type impact field design: CBD and other cannabinoids

What are you growing? Biomass

- As an industry we are all testing many different planting and harvesting options
- When planting early in the season, a longer vegetation period will create larger plants. Bigger plants = higher yields per plant.
- If planting later, tighten up plant spacing to offset the shorter vegetation period and preserve yields
- Growing conditions also determine plant density. For example, we climates need more space between plants for air movement to reduce disease pressure



CBD Planting scenarios by variety type and harvest strategy

- Auto-flower varieties
- Intermediate varieties
- Standard varieties

For Autoflower varieties:

- Begin flowering sooner and grow to lower heights, yielding 2 to 6 oz per plant
- In general autoflower varieties are planted at 4- 10X the rate of standard varieties, usually in the 10,000 – 30,000 plants per acre
- In 2021, our portfolio of GoodHemp seeds will include autoflower options
- Many growers prefer autoflower varieties at dense planting rates because of their ease of mechanical harvest
- Dense plantings can discourage weed growth – an important consideration to avoid mechanical control costs. Remember there are no registered herbicides in hemp

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Examples of autoflower varieties in the field

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Intermediate Varieties

- Have an autoflower variety in their breeding background
- Are usually shorter seasoned – flowering sooner than standard varieties and completing the season sooner than other varieties
- Good option for growers looking to avoid wet fall weather
- Important for growers who will transition to a second crop in the fall (like vegetables or winter wheat)
- Planting density varies widely depending on the variety and the harvest plan
  - If you're going to mechanically harvest, consider higher rates of 4500 per acre or above
  - If you're hand harvesting, consider lower rates in the range of 1800 to 2500 per acre

Intermediate Varieties from Arcadia

Umpqua (from ISI):

- Flowers by late July and finishes in early September
- Sticky, green flowers ideal for either smokable or extract hemp
- Recommended density: 1800- 2200 per acre

ASG 202-1111:

- Our version of the popular Remedy cultivar, flowers and finishes early
- Recommended density: 2500 – 6000 plants per acre

New Development Variety ASG 212-333:

- Expected to be a short-season
- Targeting the smokable market
- Talk to our team about the right planting density for your conditions

Umpqua

ASG 202-IIII

Standard extract hemp (biomass) varieties

- Are grown as bushy or tree-like plants
- Usually planted in the 2500 – 6000 plants per acre range
- Irrigation strategy can impact the field design
  - Following rows laid out to optimize flood, drip or overhead irrigation practices
- If you plant late, increase the planting rate in order to optimize the per acre harvest yield in flower and biomass
- Wide variety of standard varieties both for smokable and extract hemp at www.arcadiabio.com/goodhemp

Biomass Varieties, example

Standard extract hemp varieties

- **Plant density** is an **important** agronomic factor related to micro environment of your field

- Plant density affects:
  - Plant growth,
  - Crop development and
  - Yield of crops…

- The optimum plant **density** to attain highest yield depend heavily on the cultivar and geographical location

- Talk to our team of agronomists about your specific conditions and your harvest goals…. We have a variety and a plant density recommendation for you


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THANK YOU
Please register and join for our next session in
Partnership with Great American Media:
Seed Priming & Conditioning Effects in Hemp
Thursday, June 25th, 11 am pacific time | 2 pm eastern time
www.GrowGoodHemp.com
www.HempInnovationSeries.com