

# Space Is The Place\*

## Fiber Hemp Plant Spacing As It Relates to the Bast:Hurd Ratio

A commonly accepted truism is that hemp grown for fiber should be grown close together like corn. When crowded together the plants grow tall stretching towards the light which produces long fibers. The closer the plants the greater the bast:hurd ratio because tall plants need to transport water and nutrients 10, 12, 15 feet, or more.

Generalities are of little use compared to real world growth data measuring the bast to hurd ratio in relation to the planting density on a per cultivar basis. **fiberCalc** is a spreadsheet written by Jerry Whiting, that uses guesstimates about dry fiber yield per acre (5 tons), the bast:hurd ratio (3:1), etc. The resultant conclusions are fuzzy at best and could lead to erroneous decisions with potentially disastrous results for farmers and the customers alike.

**Space Is The Place** is a field trial that will measure the bast:hurd ratios of subplots planted at various planting densities. The sites are in different locations each with its own terroir and it involves multiple hemp fiber cultivars. After this year's harvest, **fiberCalc** can then be populated with real growth data. The more field trial locations and cultivars the more accurate the model will be even when factors like watering (dry farming, drip lines, pivots, etc.), growing season (seed to harvest), are isolated and factored in.

The data from each test site will be stored in separate CSV files. Hopefully other field trials besides WSU's measure and store their growth data in such a way that it will be easy to import into **fiberCalc**.

Being on the spectrum I'd like all the seeds planted everywhere to be spaced with a ruler. In the end it's all about how many seeds, by count or weight, were planted on what size area. Plots should be large enough that the plants on the inside have no light from the sides as if they were in the middle of a huge farm. Even if a given field plot is planted in only one density, that data is still valuable. Ideally each site will have at least two planting densities per cultivar.

One goal is to help farmers select specific genetics and cultivation techniques that meet the needs of their buyers. Some will target the bast market (paper, textiles, etc.) and others the hurd market (hempcrete, hempwood, etc.). *"Which cultivar(s) should I plant? How much do I need to grow to break even on the input costs? How can I add hemp to my crop rotation and make more money per acre? Lastly, how can **fiberCalc** help me set prices as the hemp fiber market grows and evolves?"* In many **Space Is The Place** combined with **fiberCalc** will take the guesswork out of growing industrial hemp at scale.

We anticipate this project having a site on WSU's land in eastern Washington, Hunter & Reich Farms in Eatonville WA, and Thane Evans in central Ohio. There are one or two other smaller sites that might

participate as well. Neo and a Chinese fiber cultivar are the two seeds to be planted. Measurements will be done parallel to how WSU has done in the past.

**Space Is The Place** is made possible by the generous support and encouragement of David Gang and his staff at the Washington State University's Center for Cannabis Policy, Research, and Outreach. **Space Is The Place** is named in honor of Herman Blount (Sun Ra), May 22, 1914- May 30, 1993, an inspiration to us all.

*"The future is fiber and fiber is the future."*

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J2 | drip line

	A	B	C	D	E	F	G	H	I	J
1	<b>cultivar</b>	<b>acres</b>	<b>seeds/acre</b>	<b>seeds/pound</b>	<b>number of seeds</b>	<b>germination rate</b>	<b>plant count</b>	<b>plant spacing</b>	<b>grow season</b>	<b>watering</b>
2	<b>Arkestra</b>	1.000 acres	25 lbs	27,840	696,000	100.00%	696,000 plants	0.64 /sq in	100 days	drip line
3		43,560.000 sq ft	[ @ 25 lb/acre ]	<i>cultivar specific value</i>	<i>cultivar specific</i>	obviously variable	D2 * E2	[ to be calculated ]	planting to harvest	
4		4,046.860 sq meters								
5	<b>plant height</b>	<b>stem diameter</b>	<b>green stem weight</b>	<b>dry stem weight</b>	<b>hurd weight</b>	<b>bast weight</b>	<b>hurd:bast ratio</b>			
6	82 in	.625 in	100. gr	30. gr	22.5 gr	7.5 gr	3:1			
7	6' 10"				75% of stem weight	25% of stem weight	<i>pot of gold @ the end of the rainbow</i>			
8					<i>cultivar specific value</i>	<i>cultivar specific percentage</i>	<i>cultivar specific percentage</i>			
9										
10										
11										
12										

The cultivar profiles are stored in CSV files.

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- dry farming
- drip line
- pivot
- flood
- other