



Cornell Hemp

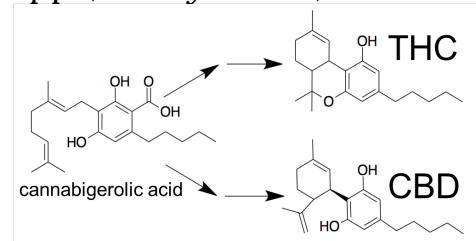
<http://hemp.cals.cornell.edu>

Evaluation of hemp cultivars for CBD production in 2019

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Production of cannabinoids:

Cannabidiol (CBD) is becoming very popular as a supplement for relief of seizures, pain, and anxiety. It is made in specialized trichomes on female floral tissue.



Average percent of plot flowering

VARIETY	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6
KG9201	100.0	100.0	100.0	100.0	100.0	100.0
KG9202	100.0	100.0	100.0	100.0	100.0	100.0
Nebraska Feral	100.0	100.0	100.0	100.0	100.0	100.0
Tangerine	100.0	100.0	100.0	100.0	100.0	100.0
Umpqua	87.5	97.5	100.0	100.0	100.0	100.0
TJs CBD	80.0	100.0	100.0	100.0	100.0	100.0
Deschutes	70.0	100.0	100.0	100.0	100.0	100.0
RNF	65.0	95.0	100.0	95.0	95.0	97.5
Rogue	55.0	82.5	100.0	100.0	100.0	100.0
A2R4	52.5	87.5	100.0	100.0	96.9	100.0
RN16	22.5	82.5	90.0	90.0	95.0	100.0
Brilliance	57.5	90.0	82.5	72.5	71.3	85.6
AC/DC	50.0	87.5	77.5	80.0	77.5	85.0
T2	0.0	50.0	90.0	100.0	100.0	100.0
Otto II	25.0	82.5	85.0	77.5	67.5	87.5
RN17	32.5	60.0	63.1	76.3	61.3	89.4
RN19	20.0	67.5	65.0	60.0	65.0	82.5
Cherry 5	20.0	54.3	67.9	65.7	62.1	79.3
Cherry 308	26.7	56.7	63.3	50.0	50.0	56.7
RN13a	11.4	54.3	57.1	62.9	54.3	60.0
Cherry 307	12.5	50.0	45.0	45.0	55.0	67.5
NY Cherry	4.0	24.0	44.0	32.0	40.0	52.0
First Light 49	25.0	30.0	35.0	42.5	10.0	7.5
First Light 80	0.0	0.0	5.7	28.6	0.0	0.0
First Light 70	0.0	2.5	2.5	8.1	0.0	0.0
First Light 58	0.0	0.0	0.0	10.0	0.0	0.0
First Light 71	0.0	0.0	0.0	0.0	2.5	0.0
FL71x71	0.0	0.0	0.0	0.0	0.0	2.5
FL70x70	0.0	0.0	0.0	0.0	0.0	0.0

Locations and production methods:

We are testing cultivars in two small-plot trials on Cornell research farms in Geneva and Ithaca. Plants were established from seeds or cuttings in 50-cell flats in early May. Females were transplanted to raised beds with plastic mulch and drip irrigation on June 5 (Geneva) and June 7 (Ithaca).

Plant trait measurement:

We are measuring several plant traits throughout the growing season including plant height, time to flowering, flowering form, pest and disease incidence, chlorophyll content, and leaf area. We saw variability within and between cultivars for flowering time and form. The 'Kayagene' varieties were flowering when we planted them and most 'First Light' varieties haven't flowered yet.

Harvest yield and quality assessment:

We will harvest whole plants and air dry them to measure dry biomass. Cannabinoids will be measured from floral tissue to determine regulatory levels (top 10 cm) and whole plant yields.



Cultivars/lines in our 2019 trials:

Cultivar/Line	Source	Cutting or Seed	Germ.	% Female
AC/DC	Winterfox Farms, Eagle Point, OR	Seed (Dioecious)	97%	49%
Otto II	Winterfox Farms, Eagle Point, OR	Seed (Dioecious)	93%	48%
Nebraska Feral	Winterfox Farms, Eagle Point, OR	Seed (Dioecious)	46%	50%
A2R4	Winterfox Farms, Eagle Point, OR	Seed (Dioecious)	68%	52%
RNF	JDMI Limited, Talent, OR	Seed (Dioecious)	85%	53%
RN13a	Go Farm Hemp, OR	Seed (Dioecious)	73%	40%
RN16	Go Farm Hemp, OR	Seed (Dioecious)	98%	51%
RN17	Go Farm Hemp, OR	Seed (Dioecious)	97%	59%
RN19	Go Farm Hemp, OR	Seed (Dioecious)	97%	55%
Brilliance	Green Lynx Farms, CO	Seed (Feminized)	90%	
KG9201	Kayagene, CA	Seed (Feminized)	>90%	
KG9202	Kayagene, CA	Seed (Feminized)	>90%	
T2	Boring Hemp, CO	Seed (Feminized)	100%	
TJ's CBD	Stem Holdings, OR	Cutting		
Tangerine	NY Hemp Source, NY	Cutting		
Late Sue	NY Hemp Source, NY	Cutting		
Deschutes F1	Industrial Seed Innovations, OR	Seed (Feminized)	96%	
Umpqua F1	Industrial Seed Innovations, OR	Seed (Feminized)	94%	
Rogue F1	Industrial Seed Innovations, OR	Seed (Feminized)	100%	
First Light 49	Sunrise Genetics, CO	Cutting		
First Light 58	Sunrise Genetics, CO	Cutting		
First Light 70	Sunrise Genetics, CO	Cutting		
First Light 71	Sunrise Genetics, CO	Cutting		
First Light 80	Sunrise Genetics, CO	Cutting		
First Light 70x70	Sunrise Genetics, CO	Seed (Feminized)	62%	
First Light 71x71	Sunrise Genetics, CO	Seed (Feminized)	96%	
Cherry 5	HempLogic, WA	Seed (Dioecious)	83%	46%
Cherry 307	HempLogic, WA	Seed (Dioecious)	45%	52%
Cherry 308	HempLogic, WA	Seed (Dioecious)	88%	42%
NY Cherry	Genesis Hemp Alliance, NY	Seed (Dioecious)	69%	34%