

WYOMING HEMP BASICS

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UNIVERSITY OF WYOMING

Goal is to provide helpful information and assist with hemp problem solving when production begins

Currently, industrial hemp cannot legally be grown in Wyoming. WDA Hemp Program

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Endless opportunities & challenges,
but birds will be the winners





Hemp Fraud Hits Farmers with Clone Scams and Seed Scams.

Grower was sold seed for high CBD plants and harvest had no CBD



Male plant producing pollen



indica



sativa



ruderalis



sativa



indica



ruderalis

For starters

1. The USDA Year Book in Agriculture 1913 has a chapter completely devoted to hemp production (can be read at WYO Hemp IPM)
2. While the Internet is great, it has a lot of info that is misleading.
3. Hemp production can be done by hand on a small scale. For example: Planet Jr, hand sickles, and Vogel type threshers.
4. Main Hemp outputs (Fiber, Seed & CBD)
5. There are dual purpose varieties which produces both fiber and seed, but not with the yield or quality of single purpose cultivars.

6. CBD is NOT found in significant amounts in the grain.

CBD comes primarily from the flower material and only from special hybrid varieties of cannabis that produce high concentrations of CBD.

Hemp oil from the grain does NOT contain marketable CBD.

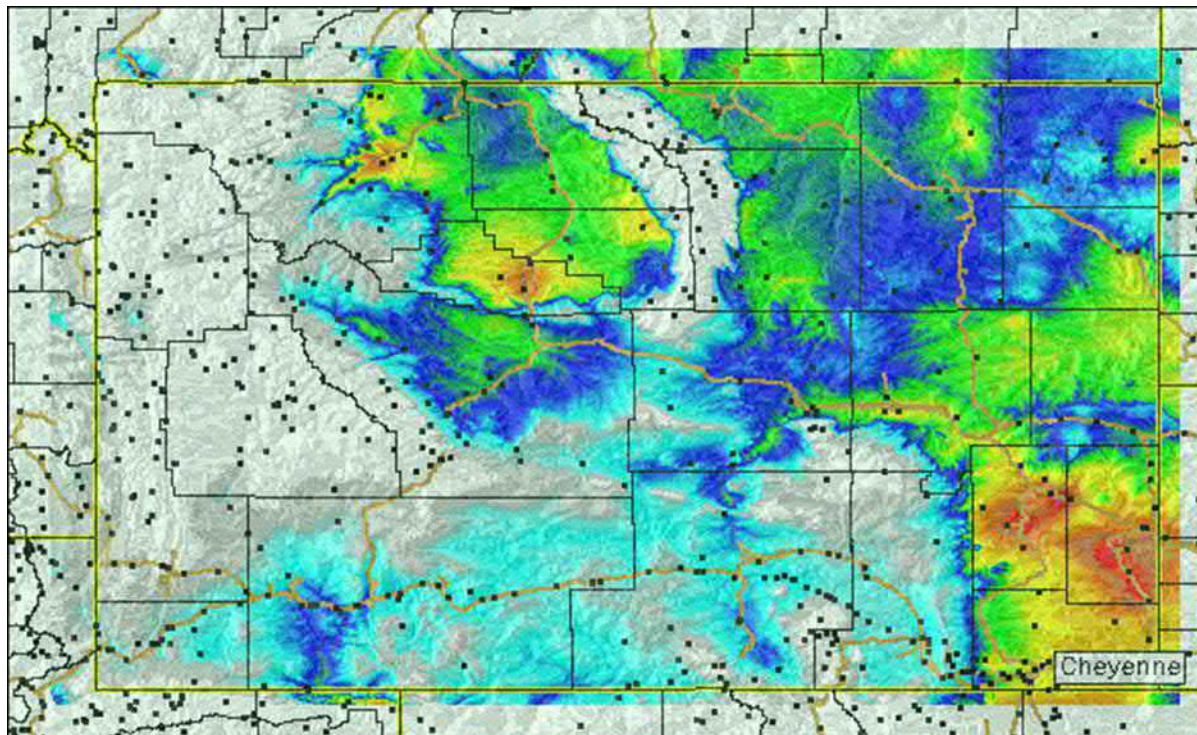
Seeds are not a by-product of CBD production!

Wyoming has many areas that will not be productive for growing hemp outside.

Hemp needs 85 to 115 days to mature.

Seedlings can tolerate some exposure to frost and in most areas can be planted after spring grain, and before corn.

A map showing the warmer areas of the state in red and orange.



Powell, Thermopolis, Wheatland, Torrington are the first places to warm up



CBD hemp
is intensive
horticulture

vs.

Grain hemp
is a good
rotation crop

CBD

A random example of what CBD clones can cost

PRICING:

Ellepots price per 70 count tray	4" potted clones price per unit
1 – 10 trays = \$699.30 per tray / \$9.99 per plug	1 – 25 = \$19.99 each
11 – 20 trays = \$524.30 per tray / \$7.49 per plug	26 – 100 = \$16.49 each
21 – 50 trays = \$419.30 per tray / \$5.99 per plug	101 – 250 = \$12.99 each
51 – 200 trays = \$314.30 per tray / \$4.49 per plug	251 – 500 = \$9.49 each
201 + trays = \$279.30 per tray / \$3.99 per plug	500 + = \$8.49

Cannabis is generally photoperiod sensitive

Lighting schedule

Growth stage	Hours of light	Hours of darkness
Seedling	16-24	8-0
Clone	18-24	6-0
Vegetative	18	6
Flowering	12	12

Greenhouse light management

Light deprivation, also called “light dep,” is an agricultural growing technique that controls how much, and how often plants receive light.

Light deprivation greenhouses accomplish this by using blackout material to cover the plants, simulating different seasonal changes.





IPM

Hemp may be a good crop for transitioning to increased IPM or organic production

Weeds are the primary pest in hemp production since there are no herbicides labeled for the crop. Hemp can out compete some weeds.

The two hemp diseases are Grey Mold and White Mold. Grey Mold and White Mold develop in high humidity.

Crop rotation is a management option available to avoid disease build-up. A 4-year rotation is recommended. Do not grow hemp on the same fields following edible beans.

Insect pests are not a common threat to hemp grown for grain. A high pest density nearby can cause problems.

Hemp grain production basics

1) Field Selection

Hemp does not like wet soils so well-drained fields that do not stay saturated after rains are ideal. It is a little bit drought tolerant.

Choose fields with the lowest weed pressure and highest fertility

Don't follow beans

2) Seedbed Preparation

Limited herbicides are labeled for hemp so clean tillage provides for optimum control of weeds

A shallow, firm seedbed allows for uniform seeding depths – similar to alfalfa/clover establishment

Some growers roll and pack the soil after planting (some broadcast)

3) Timing

Seeding dates should coincide with soil temperatures of 50 degrees F or higher (May-June) for rapid germination and emergence.

Optimum germination can help the crop compete with weeds

4) Planting

Planting is best accomplished with a grain drill (some shattering w air seeders)

Seeds roll – so smooth cones are not ideal

Seeding depth is targeted at ½ inch with a range of ¼ – ¾ inches deep

There are approximately 27,000 seeds per pound

Seeding rates range from 25-35 pounds/acre

5) Maturity

Seeds mature approximately 90-100 days after planting

Seed maturation occurs at the bottom of the seed head and moves upwards

Seed bracts expose seeds when they mature to allow for natural air drying



6) Harvest

Harvest begins approximately 100-120 days after planting (September-October)

Grain moisture at harvest should be 12-18% to reduce fiber wrapping. It gets worse as it dries.

Easy to plug equipment! So Don't try to get it all.

Fiber is not your friend at grain harvest. Have sharp knives!

Rotary combines with draper headers work very well but conventional combines work also

Plants should be cut directly below the grain head to reduce the amount of fiber brought in the combine

Combine settings are similar to Wheat or Canola

Typical grain yields can be in the are 1000 lbs/ac range



7) Post-Harvest

Harvest starts on the moist side to reduce loss due to shattering.
Seed requires drying from 25% dried to 8% or 9%

Grain should be dried to 9% moisture

Grain should be immediately cleaned off the combine (scalped) and put on air before spoiling occurs

Do not leave harvested grain sit overnight without air

Belt conveyors are preferred but augers ran full and slow can also reduce seed cracking

Potential grain processors

GF Harvest POWELL WY 888-941-9922

Colorado Hemp Works Longmont CO matt@coloradohempworks.com

9) Fiber Harvest

Fiber harvested after a grain crop should be cut 1-2 days after harvest or the following spring

Fiber should be baled in large square bales at 15% moisture or less

Typical fiber yields after a grain crop is 1-3 tons/acre

10) Clean Field Borders

Prevent weeds issues, pollen sources, and pest habitat.

More information Google search; [Wyo Hemp IPM](#)

Questions??

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References page 1:

The National Hemp Association

<https://nationalhempassociation.org/>

Lists of products used on hemp in CO, OR & WA

Colorado: Pesticide Use in Cannabis Production Information

<https://www.colorado.gov/pacific/agplants/pesticide-use-cannabis-production-information>

Oregon: Cannabis and Pesticides

<https://www.oregon.gov/oda/programs/pesticides/pages/cannabispesticides.aspx>

Washington: Pesticide and Fertilizer Use for the Production of Marijuana in Washington

<https://agr.wa.gov/pestfert/pesticides/pesticideuseonmarijuana.aspx>

Hemp Insect Factsheets

<https://hempinsects.agsci.colostate.edu/hemp-insects-text/>

References page 2;

Hemp Production eGuide

<http://www.hemptrade.ca/eguide>

Joshua Stanley – CBD bred with no THC

https://www.youtube.com/watch?v=c9OzqB8_wdc

The surprising story of medical marijuana and pediatric epilepsy | Josh Stanley | TEDxBoulder

<https://www.youtube.com/watch?v=ciQ4ErmhO7g>

Growing degree day calculator for Wyoming

<https://ippc2.orst.edu/WY/ddmaps.html>

CBD research publications at the Hebrew University Multidisciplinary Center on Cannabinoid Research.

<https://cannabinoids.huji.ac.il/>

Video clips showing basics:

Fiber example video: Hemp Farming in NZ (7 min)

<https://www.youtube.com/watch?v=DedRrEph9OA>

Seeds example video: food grade grain or certified seed
- Industrial Hemp production basics for Ontario (5 min)

<https://www.youtube.com/watch?v=mUs--6DAIaA>

AgweekTV: Hemp harvest ND (3 min)

<https://www.youtube.com/watch?v=IlmHIDJR12Q>

CBD Charlotte's Web Hemp Extract Founder Discusses Brand's Impact

<https://www.youtube.com/watch?v=9tQWxjNcZsl> (2 min)

Charlotte's Web Hemp Extract Founder Talks Hemp Farming in Colorado (2 min)

https://www.youtube.com/watch?v=ufz1xQi_FKA

Hemp processing Video from 2007 (4:51 min)

<https://www.youtube.com/watch?v=5k0GGWGTfII&feature=youtu.be>

How to germinate CBD hemp seeds for the greenhouse (2 min)

<https://www.youtube.com/watch?v=nceXeARBOhs>

Example of CBD production efficiency

<https://www.youtube.com/watch?v=fikzu6HOpRQ>