

Hemp Seed - at the Crossroads

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2018 Farm Bill (selected key provisions)

- ▶ **Removed hemp from Schedule 1 drug status** and from definition of marijuana in federal law.
- ▶ **Moved hemp from DEA** (Department of Justice) oversight **to USDA** oversight with requirement for new rules and recognition of state programs.
- ▶ Did not remove current hemp research law until 1 year after USDA adopts final rules.
- ▶ Did not change status of marijuana, CBD, CBN, etc. Under the FDA Food, Drug, Cosmetic Act. This applies to human and animal foods.

USDA Rules

- ▶ **0.30% Total THC** or lower with measurement of uncertainty
- ▶ Above 0.5% is submitted to DEA as a negligent growing operation - *gnashing of teeth on this point.....*
- ▶ Sample and test every planting date of every variety
 - ▶ OISC would have to hire 27 new *inspectors*
 - ▶ *Put in more lab space*
 - ▶ *Hire new chemists*
- ▶ *Not feasible*
- ▶ **So far, only 6 states have approved plan. Ohio, New Mexico and Louisiana, Delaware, Nebraska and Texas**

State and Tribal Plans

- ▶ Most submitted
- ▶ Only **six** states approved by January 29
- ▶ Seven Tribes approved by January 29
- ▶ Some states are dumping it back in the USDA's lap - Maryland, New Hampshire
- ▶ Many state are falling back to the 2014 Farm Bill and Research Only

The Wild Wild West Was Tame!

- ▶ Fraudulent CoA's - Same one in multiple states with different names
- ▶ Fraudulent Seed Test Results - same one for multiple varieties
- ▶ Variety Name Changes - Variety name stays with variety for life.
- ▶ Ignoring legal contracts with grower partners. Catch me if you can!
- ▶ Moving hot crops out of state to a legal marijuana state in the middle of the night.

Knowledge Base? Not so much...

- ▶ Not much agricultural knowledge among many in this group of growers
- ▶ Several inherited a few acres and want to cash in!
- ▶ Use pesticides even if not labeled in some/many cases
- ▶ Rumor mill and consultants are thick and misinformed of actual laws/regulations
- ▶ Defense is to be bold and aggressive with regulators. Threats of getting physical with regulator, suicide and lawsuits are not uncommon.
- ▶ Dicamba Drift? That will be a very expensive crop - lawsuits likely.

What Laws and Regulations Govern Seed?

- ▶ Federal Seed Act of 1939
- ▶ Indiana Code 15-15-13 Indiana Seed Law
- ▶ IAC 360-1-1 Administrative Rules - updated 2019

Is Hemp Seed Governed By Same Rules?

- ▶ YES!!!!
- ▶ ABSOLUTELY YES!!!
- ▶ WITHOUT A DOUBT YES!!!
- ▶ YES! Yes! Yes! Yes! Yes! YES! Yes!
- ▶ No Doubt about it under any circumstances.... The answer is Yes!

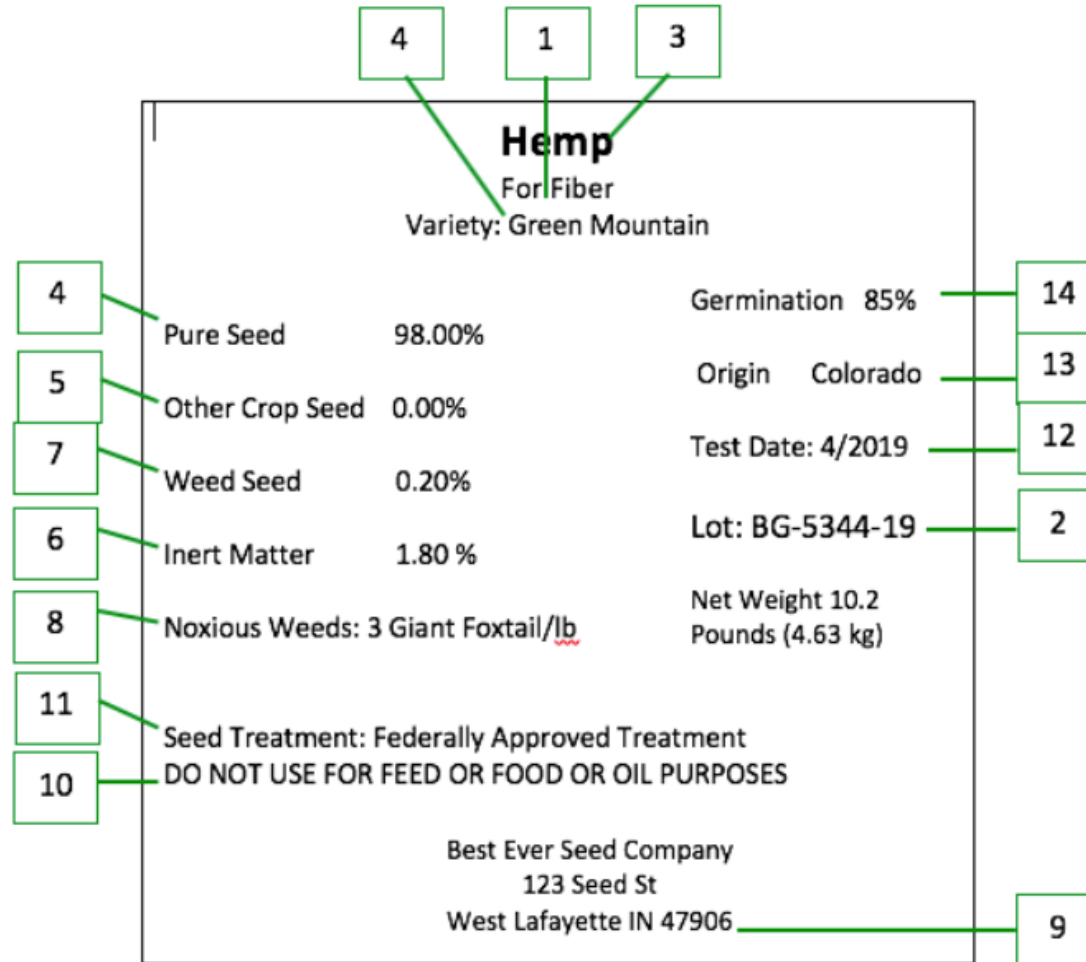
So, What Does the Seed Law and Rules Say?

- ▶ Seed Must be Tested
- ▶ Seed Must be Labeled
- ▶ Seed Cannot Be Sold In Indiana or any state... Without A Seed Permit
- ▶ A Stop Sale Can Be Put on Any Seed Not Labeled, Not Tested and Sold Without A Seed Permit
- ▶ Detailed records of all seed sales must be kept for minimum of 2 years

What needs to be on a label?

- ▶ Germination percentage
- ▶ % Pure Seed
- ▶ % Inert
- ▶ % Other Crop
- ▶ % Weed Seed
- ▶ Noxious Weeds claim
- ▶ Variety Name - MUST BE NAMED... Not allowing Variety Not Stated
- ▶ Labeler Information, including full address
- ▶ Germination date (test date)
- ▶ Origin (where grown)
- ▶ Lot #
- ▶ Arbitration Statement

Acceptable Label



Germination Rate Percentage

- ▶ AOSA Labs follow strict rules to test germination rates on seed, including hemp seed
- ▶ Tests are done in special equipment that controls temperature, humidity and light.
- ▶ Temperatures range from 20 C to 30 C on a set time. Replicating day length and day/night temperature swings
- ▶ Germinated seed is counted twice. At 3 days and at 7 days
- ▶ Final test date is the month and year you put on the seed label for germination test date

- ▶ **NEED A MINIMUM OF 800 SEEDS FOR COMPLETE TEST...**
- ▶ **Yes... even if it is feminized CBD crop selling for a \$1 to \$8 a seed.**

Germination Tests on Hemp 2016-2019

- ▶ 49 Germination Tests in 2019
- ▶ First year seed? **Around 70-75%** germination. **Claims are typically 95%**
 - ▶ Playing with pre-chill on a study for AOSA - Association of Official Seed Analysts
- ▶ Average germination rate from all years and all varieties? **56%**
- ▶ Some was part of a four year study of what holds germ and what doesn't.
- ▶ When in doubt? Ask for the Seed Lab Report and call the lab to verify

Percent Pure Seed, Inert, Weed Seeds and Other Crop Test

- ▶ Highly trained and accredited seed analysts test and analyze the seed
- ▶ Looking for seeds that are not hemp - is it an agricultural crop or weeds?
- ▶ Looking for partial seeds, missing key parts
- ▶ Looking for chaff and other things in the seed that are not hemp seed
- ▶ Looking for weed seeds



Noxious Weeds Test

- ▶ Looking for any weed seeds that are on the Indiana Noxious Weed Seed Lists
- ▶ IAC 360-1-1-5 and IAC 360-1-1-6
- ▶ Two kinds of noxious weed seeds
 - ▶ Prohibited - the seed lot cannot be sold without cleaning and a new clean test
 - ▶ Restricted - can have up to 0.25% of these weeds and still sell it
 - ▶ HOWEVER, these weeds must be listed on the seed label and #/lb found
- ▶ With no herbicides, weeds are a problem!



Kind and Variety

- ▶ These are fixed - cannot be changed downstream
- ▶ The seed kind is hemp or cannabis sativa L.

- ▶ Variety names are assigned by the original breeder and cannot be changed
- ▶ Let that sink in...

- ▶ We have evidence of several hemp variety names being changed in 2019.

- ▶ It is extremely important to know who you are buying from!!!
- ▶ Cannot emphasize this enough. Buy seed from professionals!

Where can I get this information in hard copy?

- ▶ OISC Hemp website has a document that walks you through the labeling process.
- ▶ Simply do a google search for Office of Indiana State Chemist hemp and go to Section 7 of the website.
 - ▶ How to test and label hemp seed/pdf

Certified Seed?

- ▶ What is Certified Seed? Doesn't that mean it has been tested and is low THC?
 - ▶ NO... Certified Seed has nothing to do with THC or CBD
- ▶ Certified Seed is grown from Registered, Breeder or Foundation Seed Stock
- ▶ Requirements for producing certified seed include
 - ▶ special land requirements
 - ▶ planting eligible stock
 - ▶ field inspections
 - ▶ proper seed labeling
 - ▶ meeting standards based on complete lab analysis.

Indiana 2019 by the numbers

2019 Indiana Grow Season By The Numbers

▶ In Field

- ▶ 5308 Acres Registered
- ▶ 4090 Planted
- ▶ 3216 Harvested

▶ Green House

- ▶ 347,947 ft² Planted
- ▶ 323,852 ft² Harvested

▶ Hemp Type

- ▶ 17% Fiber
- ▶ 74% CBD
- ▶ 9% Grain

• Growers

- 27% Profitable
- 23% Breakeven
- 50% Lost Money
- 67% Will Definitely Replant

Section 3 EPA Registered Products Acceptable for Use on Hemp and Registered in Indiana

OISC Product ID	Company Name	Product Name	EPA Reg Number
2019085216	Marrone Bio Innovations	REGALIA BIOFUNGICIDE	84059-3
2018083267	Marrone Bio Innovations	REGALIA CG BIOFUNGICIDE	84059-3
2018083084	Marrone Bio Innovations	STARGUS BIOFUNGICIDE	84059-28
2016080206	GENERAL HYDROPONICS	GENERAL HYDROPONICS PREVASYN INSECT REPELLANT/INSECTICIDE	91865-1
2019084738	GENERAL HYDROPONICS	GENERAL HYDROPONICS PREVASYN INSECT REPELLANT / INSECTICIDE 2	91865-1
2016080207	GENERAL HYDROPONICS	GENERAL HYDROPONICS EXILE INSECTICIDE/FUNGICIDE/MITICIDE	91865-2
2019085092	GENERAL HYDROPONICS	GENERAL HYDROPONICS DEFGUARD BIOFUNGICIDE/BACTERICIDE1	91865-3
2016080208	GENERAL HYDROPONICS	GENERAL HYDROPONICS DEFGUARD BIOFUNGICIDE/BACTERICIDE	91865-3
2017080722	GENERAL HYDROPONICS	AZAMAX BOTANICAL INSECTICIDE/MITICIDE/NEMATICIDE1	91865-4

25(b) Minimum Risk Pesticide Products Acceptable for Use on Hemp in Indiana

OISC Product ID	Company Name	Product Name	OISC 25B Number
2014076760	BONIDE PRODUCTS INC	BONIDE BURNOUT FAST ACTING WEED & GRASS KILLER CONCENTRATE	4-25B-20
2014075459	BONIDE PRODUCTS INC	BONIDE MAIZE WEED PREVENTER READY TO	4-25B-19
2016079566	DR EARTH CO	DR EARTH PURE & NATURAL FINAL STOP VEGETABLE GARDEN INSECT KILLER	999999-25B-5
2016079572	DR EARTH CO	DR EARTH PURE & NATURAL FINAL STOP VEGETABLE GARDEN INSECT KILLER	999999-25B-11
2016079564	DR EARTH CO	DR EARTH PURE & NATURAL FINAL STOP WEED & GRASS HERBICIDE	999999-25B-3
2016079568	DR EARTH CO	DR EARTH PURE & NATURAL FINAL STOP YARD & GARDEN INSECT KILLER	999999-25B-7
2016079570	DR EARTH CO	DR EARTH PURE & NATURAL FINAL STOP YARD & GARDEN INSECT KILLER CONCENTRATE	999999-25B-9
2017081117	GARDENS ALIVE!	WOW! WITHOUT WEEDS PRE-EMERGENT WEED CONTROL FOR LAWNS AND GARDENS 9-0-0	56872-25B-20
2008066324	JH BIOTECH INC	SAFERGRO ANT OUT NATURAL ANT/INSECT KILLER RTU	68573-25B-1
2014076718	JH BIOTECH INC	SAFERGRO BIOPEL NATURAL INSECT	68573-25B-9
2008066326	JH BIOTECH INC	SAFERGRO MILDEW CURE NATURAL POWDERY MILDEW FUNGICIDE RTU	68573-25B-2

25(b) Minimum Risk Pesticide Products Acceptable for Use on Hemp in Indiana

OISC Product ID	Company Name	Product Name	OISC 25B Number
2008066327	JH BIOTECH INC	SAFERGRO PEST OUT NATURAL INSECTICIDE & MITICIDE RTU	68573-25B-3
2008066325	JH BIOTECH INC	SAFERGRO WEEDZAP NATURAL BIODEGRADABLE NON-SELECTIVE HERBICIDE	68573-25B-4
2016080213	KEMIN INDUSTRIES INC	TETRACURB CONCENTRATE	8596-25B-1
2005060211	KTI DIRECT	MOLEXIT	999999-99999
2014075869	LIQUID FENCE CO	ECOLOGIC GARDEN INSECT KILLER	72041-25B-25
2014075870	LIQUID FENCE CO	ECOLOGIC GARDEN INSECT KILLER	72041-25B-24
2014075875	LIQUID FENCE CO	ECOLOGIC HOUSEPLANT & GARDEN INSECT	72041-25B-26
201207355	MOTOMCO	TOMCAT MOLE & GOPHER REPELLENT LIQUID	3240-25B-2
2019084806	P F HARRIS MANUFACTURING COMPANY LLC	HARRIS DEER & RABBIT REPELLENT SPRAY	3-25b-5
2017082173	PACIFIC SHORE HOLDINGS INC	NATURE-CIDE ALL-PURPOSE COMMERCIAL CONCENTRATE INSECTICIDE	90395-25B-3
2019085259	SAFER INC	SAFER BRAND WEED PREVENTION PLUS	42697-25B-3
2010068464	ST GABRIEL ORGANICS	HOLY MOLEY MOLE REPELLENT	63191-25B-1
2018085257	UNITED COMPOST & ORGANICS INC	BUSHDOCTOR FORCE OF NATURE INSECT REPELLENT (CONCENTRATE)	71996-25B-1
2018085258	UNITED COMPOST & ORGANICS INC	BUSHDOCTOR FORCE OF NATURE MITICIDE (CONCENTRATE)	71996-25B-2
2019084573	VIC WEST IMPORTERS	GRANDPA GUS'S CINNA-MINT SCENTED MOUSE REPELLENT POUCHES	93142-25B-3
2019084573	VIC WEST IMPORTERS	GRANDPA GUS'S MOUSE REPELLENT POUCHES	93142-25B-2

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Questions??

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