

Tennessee Hemp Team

Anni Self

Plant Certification Administrator
615-837-5313

Denise Woods

Hemp Program Coordinator
615-837-5326

Mike Studer

State Apiarist
615-517-4451

Steve Powell

State Plant Entomologist
615-837-5139

Katherine Kilbourne

State Plant Pathologist
615-767-0918

Administrative Assistance

Julia Craig

ASA II
615-837-5137

Emily Dillahay


ASA IV
615-837-5163

Bonnie Connell

ASA II
615-837-5132

Tennessee State Inspectors

<https://www.tn.gov/content/tn/agriculture/farms/hemp-industry/hemp/hemp-inspectors.html>



Five Years of Hemp in Tennessee

STATE of the STATE

2015-2020



Introduction

Our Vision

For Tennessee to become a national leader in agriculture and forestry through economic advancement, innovation, and natural resource stewardship by commitment to service, family, farms, and healthy living.

Our Mission

To serve all the citizens of Tennessee by providing options for responsible use of our agricultural and forest resources, developing economic opportunities, safeguarding food and fiber, and ensuring equity in the marketplace



Challenging Dynamic Exciting Healing Fiber Risky
Seed Skepticism Climate Change
Healing Possibilities Diversity
Curiosity Protein Entrepreneurship
Feed Super Food Sustainability Rewarding Celebrities
Research & Development



History of Tennessee Hemp

- Hemp has been an important crop throughout the history of the U.S. In 1700, it was illegal for farmers to not grow hemp.
- The history of hemp production in Tennessee dates to the early 19th century with the arrival of pioneer families.
- Tennessee's first commissioner of agriculture, Joseph Killebrew, reported that hemp was widely grown throughout Middle Tennessee.
 - Bedford, Coffee, Jackson, Marshall, Maury, Sumner and Williamson counties were particularly noted for having suitable soils for hemp production.
 - In Maury County, hemp was used for ropes and bagging for cotton.
 - In the 1870 census, Sumner County (including present day Trousdale County) reported producing 150 tons of hemp.
- Hemp production and processing declined after World War II for many reasons.
- Hemp continued to be ill-favored, being classified as a Schedule I drug in 1970.

"In response to this demand, hemp came to be one of the staple crops in Maury County, and rope walks and hemp factories were quite as common in the county as cotton gins are now," according to the report.

Hemp

For decades, Hemp in Tennessee has been a blank slate...



Hemp

... then Congress passed the **Agricultural Act of 2014**, also known as the 2014 Farm Bill, which opened the door for states to establish an agricultural pilot program to study the growing, cultivation, or marketing of industrial hemp.

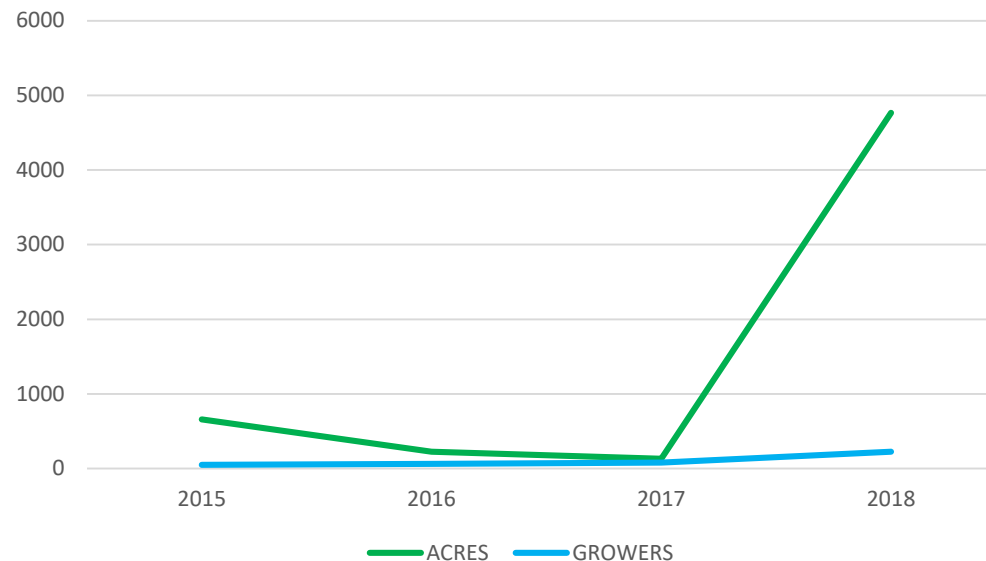


Agricultural Act of 2014

- **Hemp** as a possible agricultural commodity
- Public Chapter 916 became effective on July 1, 2014, creating Tennessee's **INDUSTRIAL HEMP RESEARCH PILOT PROGRAM**
 - The Department promulgated rules and issued licenses for growing hemp.
 - Hemp was cultivated for market and growth research only. No hemp plants or products could legally cross state lines.

Hemp

- Hemp's emergence onto Tennessee's agricultural stage was relatively a quiet one with only **49** licensed growers in its first year, **2015**.
- Hemp was slow and steady for the next two years.

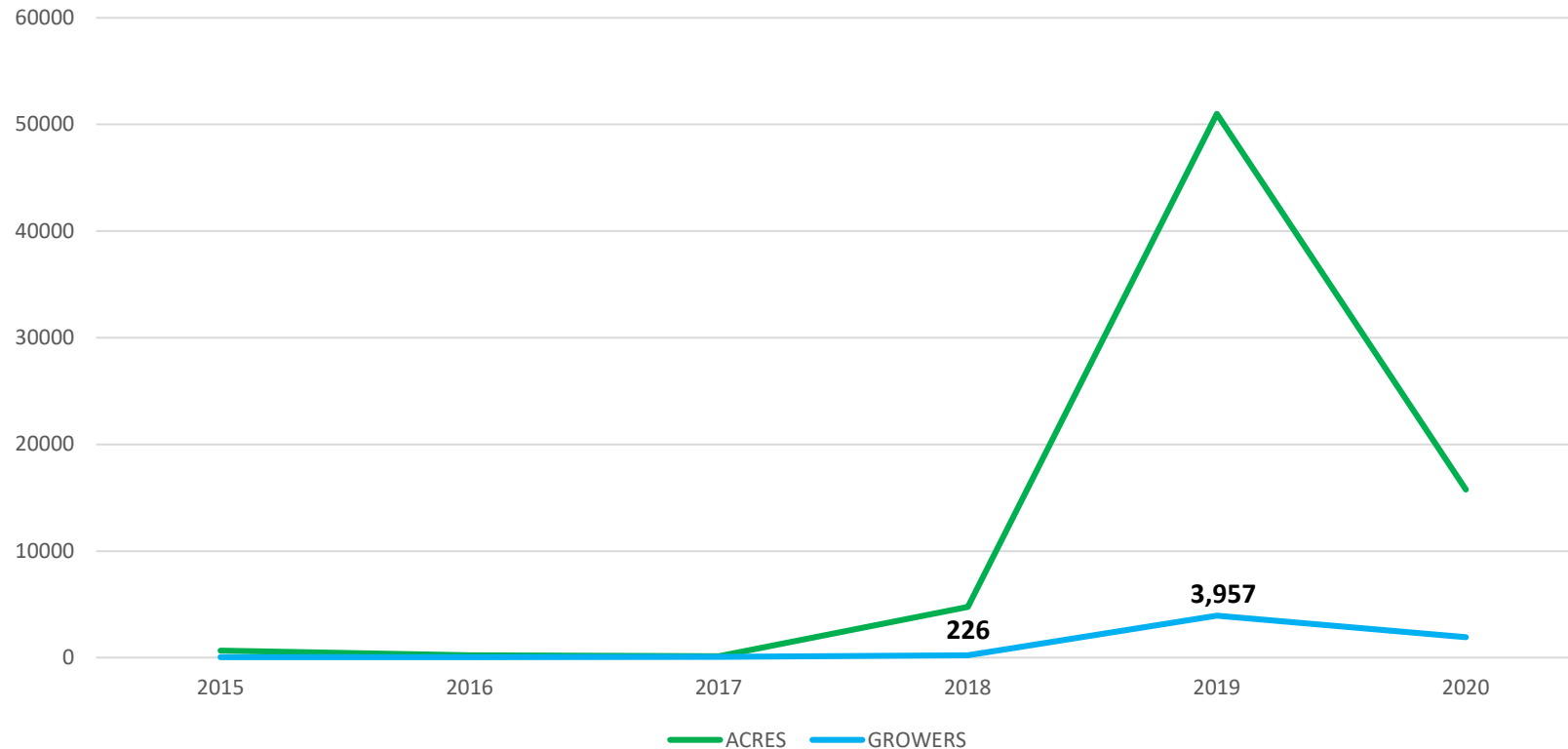


Agricultural Improvement Act of 2018

- The 2018 Farm Bill
- **Section 7605:** Phased out industrial pilot programs established under the 2014 Farm Bill
- **Section 10113:** Amended the Agricultural Marketing Act of 1946 to allow States and Indian tribes to regulate hemp production or participate in a USDA hemp regulation program
- **Section 10114:** Ensured the unencumbered interstate movement of hemp
- **Section 12619:** Removed hemp plants and hemp products, including CBD, from the Controlled Substances Act (CSA)
- Did not affect or modify rules and regulations of the federal Food and Drug Administration (FDA) or the interstate movement of articles regulated by FDA
- Other major changes:
 - Hemp farmers may now have access to crop insurance and participate in USDA programs and grants in 2020.

Hemp

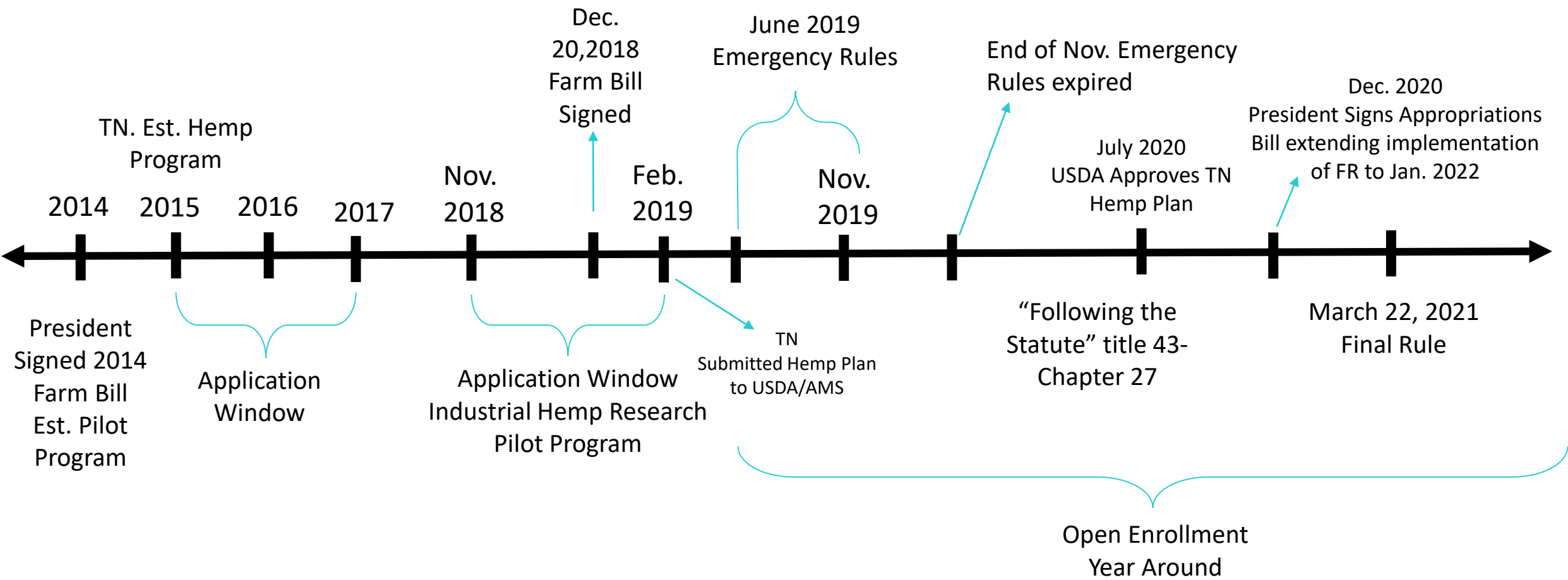
- With the passing of the **2018 Farm Bill**, Hemp crescendoed into a whopping **3,957** growers with over **51,000** licensed acres making Tennessee Hemp Program the largest in the country.



Hemp Legislative Progression

- Feb. 2014 = 2014 Farm Bill Passed
- July 2014 = TN Hemp Pilot Program established by legislature
- January 2015 = TN filed rules consistent with 2014 Farm Bill
- April 2015 = TN rules went into effect
- May-June 2018 – TN emergency rule extended application period for licenses
- July 2018 = TN rules amended
- October 2018 = TN amended rules went into effect
- December 2018 = 2018 Farm Bill passed
- April 2019 = TN industrial hemp pilot program repealed, and new hemp law passed consistent with 2018 Farm Bill
- June-November 2019 = TN emergency rule repealed previous rules as required under new state law
- October 2019 = USDA promulgated as Interim Final Rule for the Establishment of Domestic Hemp Program, Interim final rule to be effective from October 31, 2020
- September 2, 2020 = TN rule and program approved by USDA and filed with state
- September 8, 2020 = USDA extended comment period and effective date of Interim Final Rule November 2021
- October 21, 2020 = TDA withdraws rule
- December 2020 = USDA again extended effective date of Interim Final Rule to January 2022
- January 15, 2021 = USDA set March 22, 2021 as effective date for Interim Rule

Regulatory Timeline



Hemp 2020

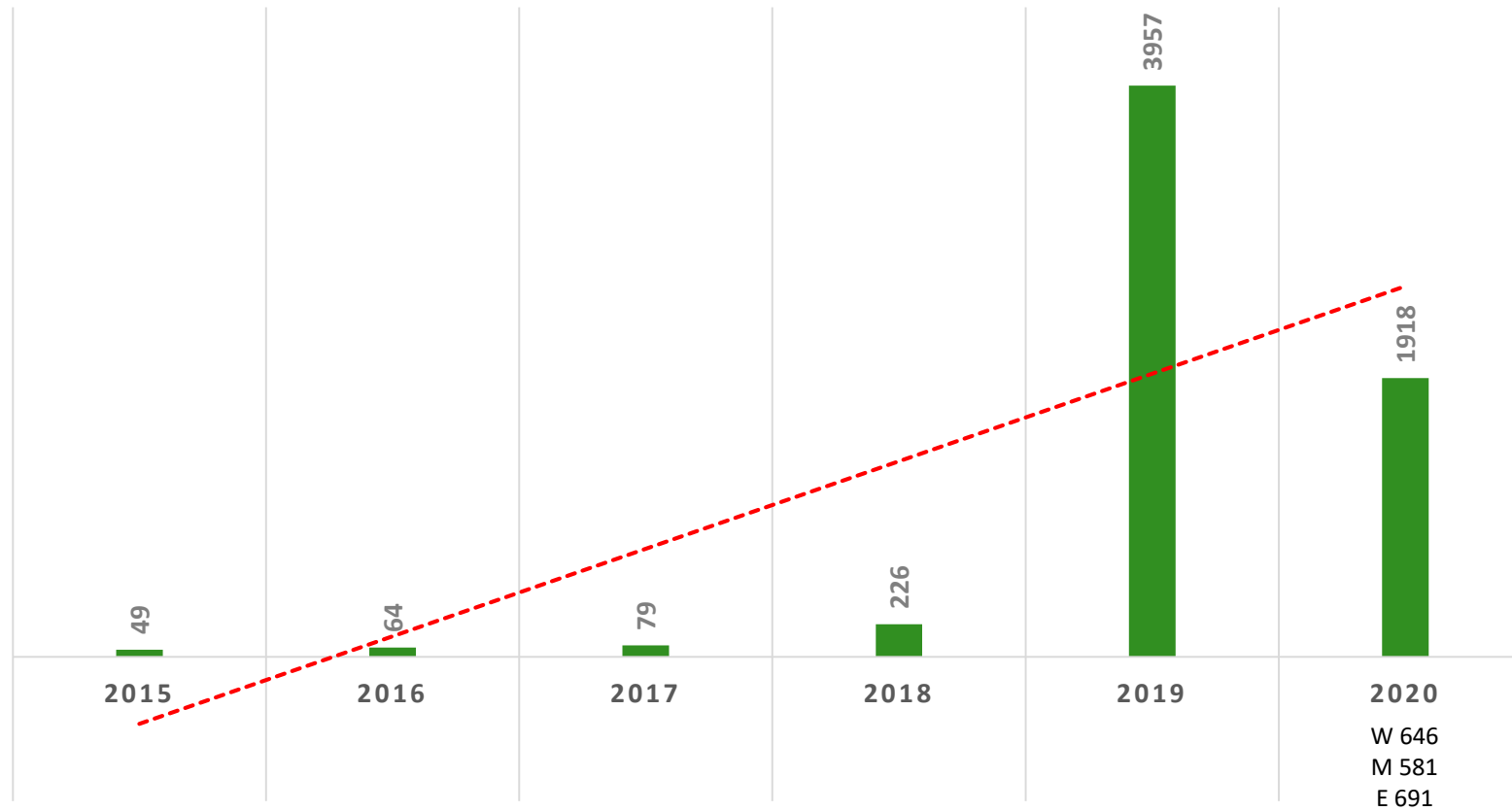
Industrial Hemp Licensed Growers 2020

	Qty	Licensed Acres	# Less than 5 Acres (Qty)	> 5 Licensed Total Acres	# of 5-20 Acres (Qty)	5-20 Licensed Total Acres	# of Greater than 20 Acres (Qty)	> 20 Licensed Total Acres
Total Growers	1918	15721.8	1563	2614	239	2754.3	116	10353.4
East	691	4937.6	586	977.1	70	860.8	35	3099.7
Middle	581	4574.3	478	875.2	69	729.8	34	2969.2
West	646	6209.9	499	761.7	100	1163.7	47	4284.4

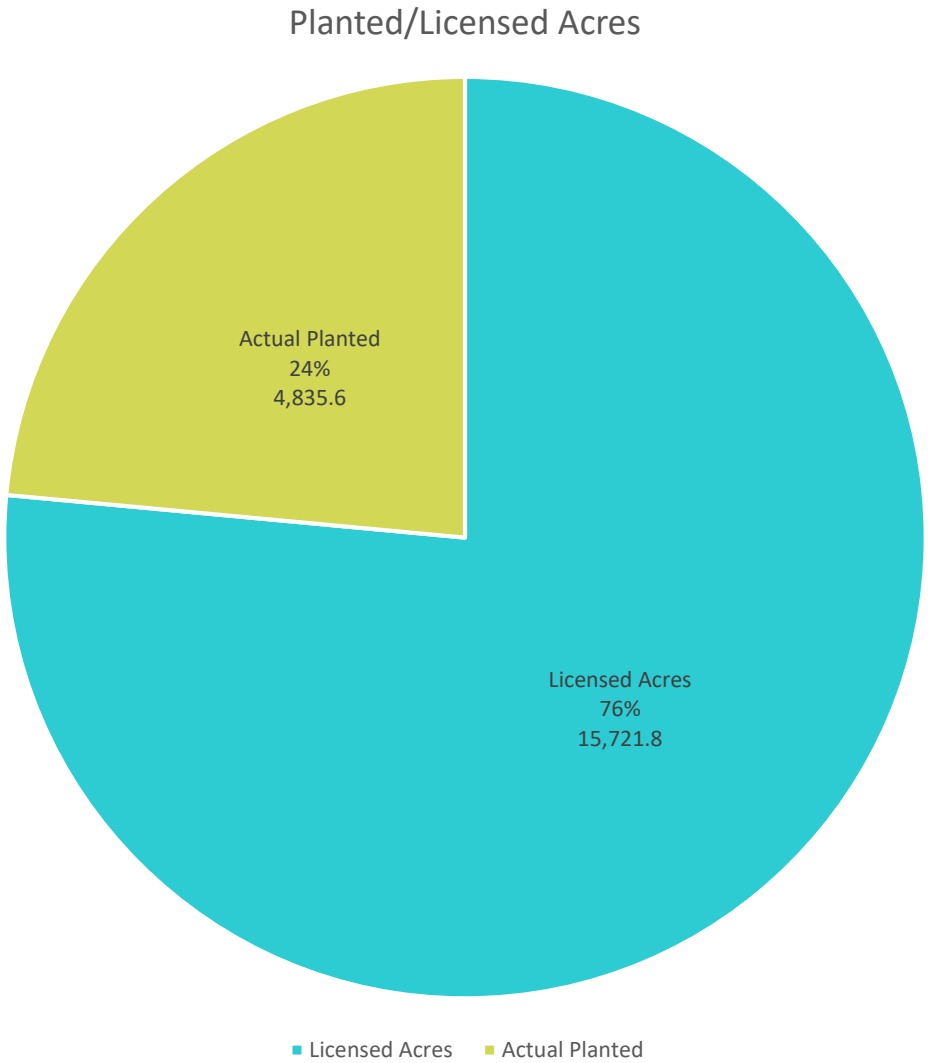
Industrial Hemp Actual Grow Areas 2020

	Total Grow Areas (Qty)	Total Grow Area Acres	Outdoor Grow Areas (Qty)	Outdoor Acres	Indoor Grow Areas (Qty)	Indoor Acres	Indoor Sq Ft.
TN Grow Areas Total	3714	4835.6	2498	4653.9	1216	181.6	7,910,496
East	1373	2209.7	853	2102.5	520	107.1	4,665,276
Middle	940	727.5	692	707.5	248	20	871,200
West	1401	1898.3	953	1843.8	448	54.4	2,369,664

TN Hemp Growers



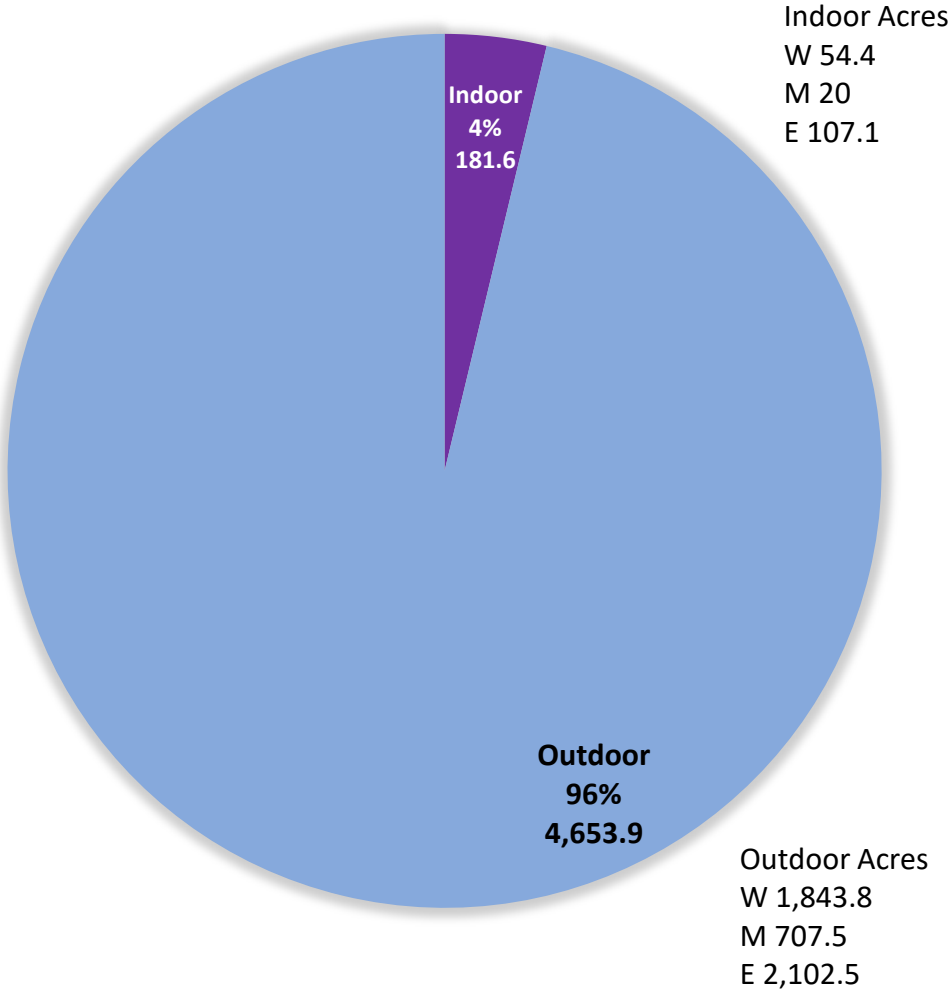
Hemp Acres 2020



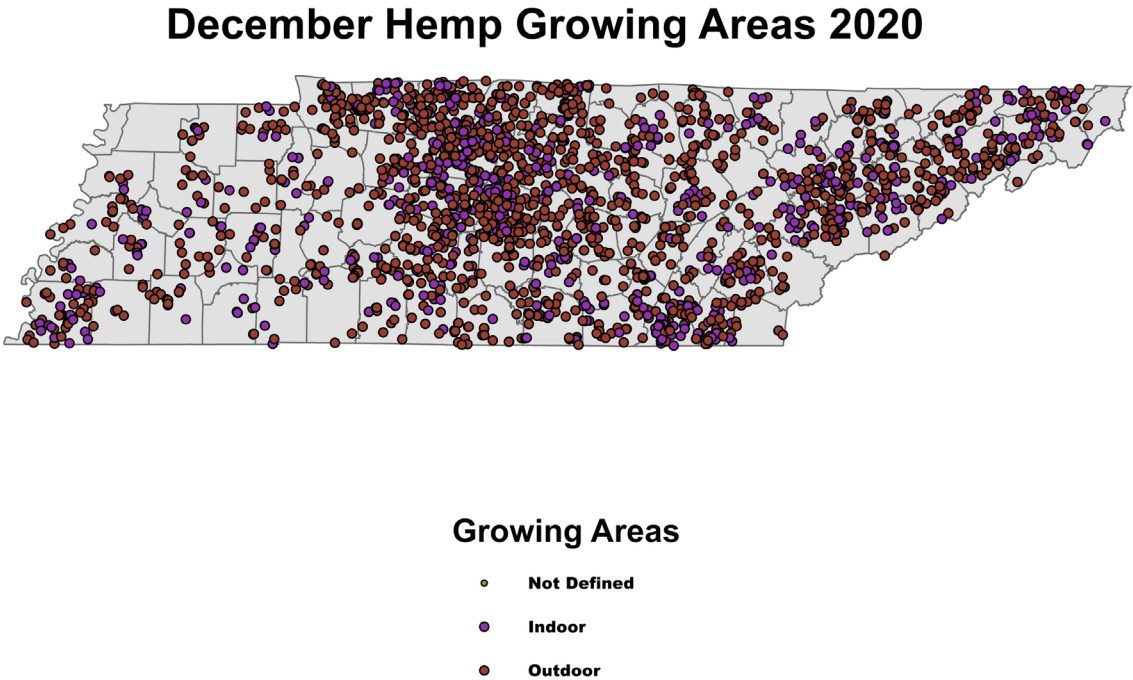
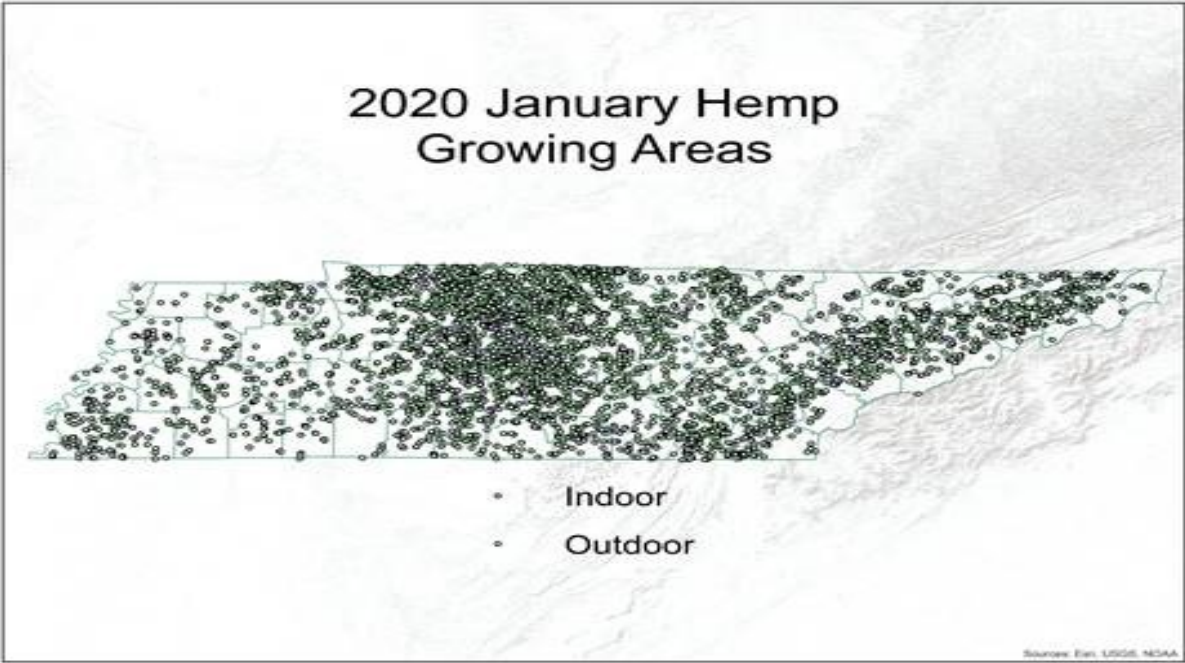
Hemp 2020 Grow Areas



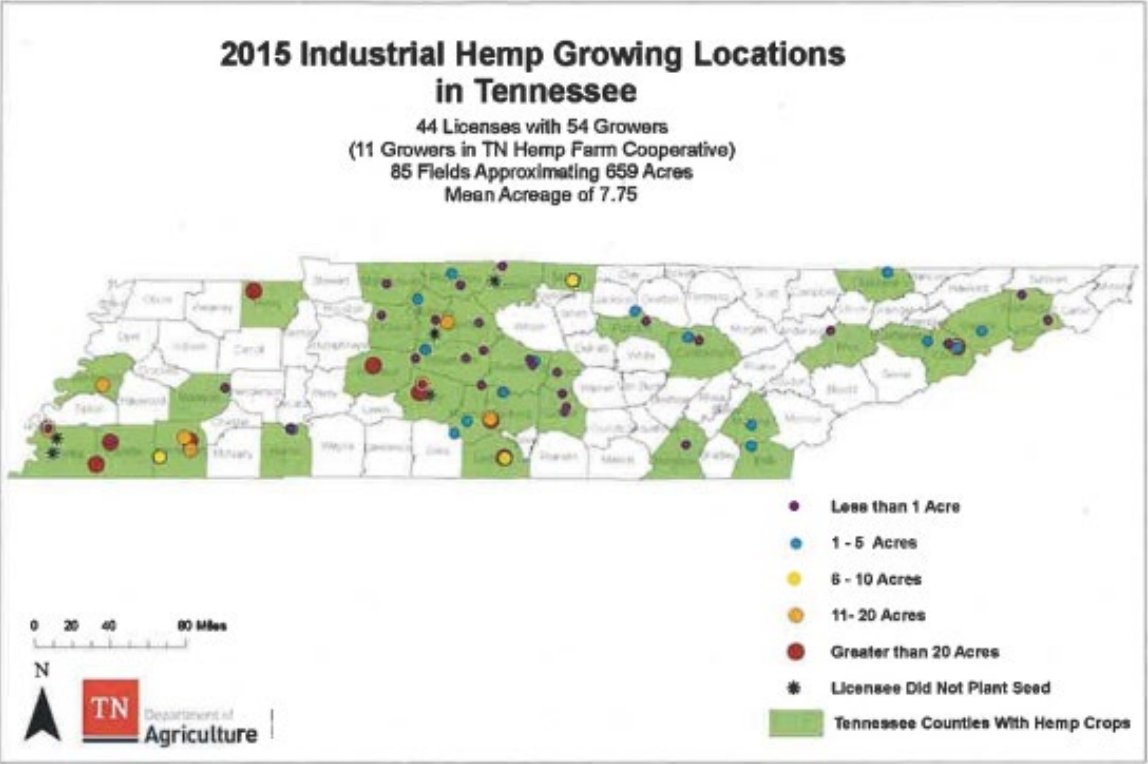
OUTDOOR/INDOOR GROW AREAS



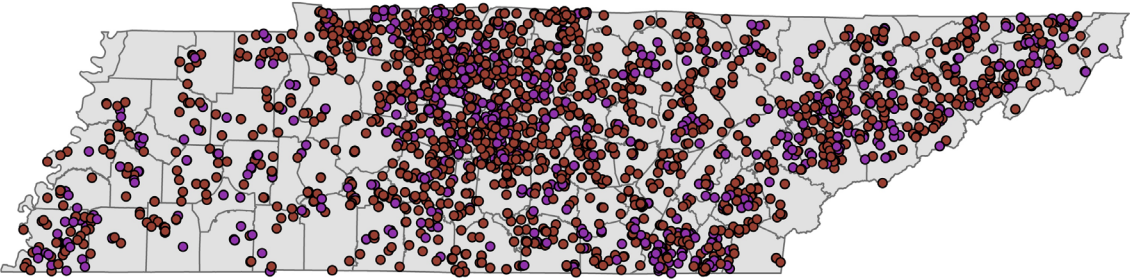
Hemp Growing Areas (Jan. 2020- Dec. 2020)



Hemp Growing Areas (2015- Dec. 2020)



December Hemp Growing Areas 2020



Growing Areas

- Not Defined
- Indoor
- Outdoor

Tech Service Lab – Hemp Sampling

	2015	2016	2017	2018	2019	2020
# of Samples	56	39	38	317	950	209
# “Hot”						
# Destroyed						4
TBI						1

Hemp Sampling

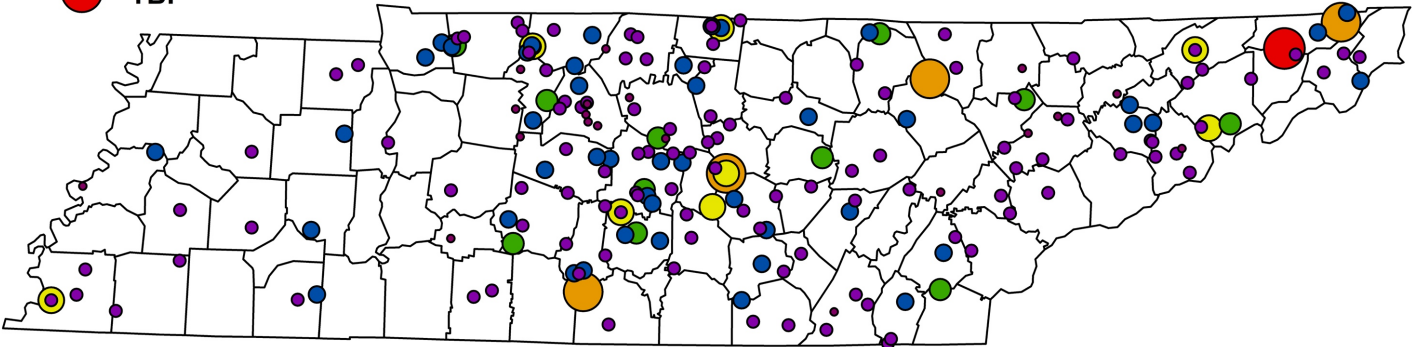
Delta 9 THC Results

- Not Detected
- .1 or Less
- .11-.2
- .21-.3
- Retest
- Destroy
- TBI

Hemp Samples 2020

207 Samples collected
East-67
Middle-63
West-77
Average Value is 0.11%

Results Above .3% Delta 9 THC	
Variety	Delta-9
T1, Berry Blossom, Sweeten	0.337
T1	0.348
Suver Haze	0.352
Vonn	0.361
Sweetened	0.38
Cherry Blossom	0.389
sour space candy	0.393
T1	0.433
BAOX	0.514
Lifter	0.564
The White-CBG	1.879



Variety	Number	Variety	Number	Variety	Number	Variety	Number	Variety	Number
Abacus	1	CBG Gold	2	Double Bubble	4	Merlot	1	Stormy Daniel	2
Abacus Early Bird 2.0	1	CBG Mountain Blizzard	1	Enlightened OG	1	Midwest	1	Stout	2
Auto Pilot 1	2	CBG White	4	Frosted Lime	2	Mixed	12	Stray Kat	1
BAOX	6	Chardonnay	2	Golden Kush	2	Mountain Gold	1	Sundance	1
BC Bud CBD	1	Cherry	4	Goliath	5	Mountain Gold CBG	1	Super CBD	2
Berry Blossom	2	Cherry Ascenine	1	Goliath Peach	1	Mountain Mango	4	Susie Q Bax	1
Big Orange	2	Cherry Blossom	1	Hemp Hulk	1	Naked Dady-Alpine	1	Susie-Q	1
Black Jack	1	Cherry Blossom	1	hot blonde	1	New West Genetic	1	Suver Haze	9
Boxwine s1	1	Cherry blossom 50	1	Ketner's Kush CBG	1	Orchard Tang	1	Sweet Berry Wine	1
Bubba Kush	2	Cherry Trump	1	KLR-1	1	Otto 2	1	Sweet Carolina	1
Bubble Gum	1	Cherry Wine	16	La Cream	1	Red Kross	1	Sweetened	10
C5	1	cherry winexendurana	1	Large Marge	1	Siskou Gold	1	T1	18
Canaboo	1	Cinco	2	Lifter	2	Sour G	1	T1 X Berry Blossom	1
Carolina	1	Citral	1	Lindorea	1	Sour Space Candy	5	Tangerine	1
Carolina Dream	2	Citrus Fire	1	Little Giant	1	Sour Tsunami	1	The Haute Wife	1
CBG	5	Cold war	1	Little Giant Auto	1	Spectrum	1	The White-CBG	1
									Grand Total
									207

Seed Acquisition

2015

- 40,000 Lbs. of Seed from Canada
 - Arrived Late due to DEA
 - TDA Paid & Growers Reimbursed
- Poor Seed Germination Rate
- Varieties Did Not Perform in TN Climate

2016

- Seed from Italy
 - Arrived Late
 - Grower Paid for Own Seed/TDA Created Seed Order
- Poor Seed Germination Rate

2017

- Difficult Seed Acquisition

2018

- Growers Sourced Their Own Seed
- Seed Acquisition Forms Approved by TDA Prior to Purchase
- All Seeds & Clones Came to TDA for Inventory then Distributed to Growers

Movement Permits

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TENNESSEE DEPARTMENT OF AGRICULTURE

DIVISION OF CONSUMER & INDUSTRY SERVICES

PLANT CERTIFICATION SECTION

CHARLIE HATCHER, D.V.M.

COMMISSIONER

TENNESSEE HEMP MOVEMENT PERMIT

Sender Information:

Licensee Name: mister shelton

License No.: EBY-BGZW

(Address)

Street

anywhere

City

County

davidson

State

TN

Zip Code

37022

Date*: 10/30/2019

Quantity: 1 plants

Driver Name: mister shelton

Driver's License: 01025900

License Plate: T00-00V

Color: red

Year: 2015

Make: ford

Model: f150

Receiver Information:

Name: misses shelton

License No.: EBY-BGZW

(Processor or grower)

(Only if receiving rooted hemp)

Destination:

1000 nowhere street

(Address)

Street

anywhere

City

County

davidson

State

TN

Zip Code

37022

By submitting this application for a Tennessee Hemp movement permit, I certify that the information contained in this application is true and accurate to the best of my knowledge. I agree to move hemp only as authorized herein and in conformance with state law. I understand that a movement permit is required per vehicle per day and that each cannabis plant or plant product moved not in conformity with state law may constitute a separate violation, resulting in civil penalties of up to \$1,000 per violation and possible criminal charges. I agree to accept responsibility for any violations committed by persons operating under this license.

Electronically signed by mister shelton on 10 / 30 / 2019

2015 – 2018 Grower Contacted TDA for Movement Permit Approval

June 28, 2019 Launched Online Movement Permits = 2,805 issued permits

2020 = 1,568 issued permits



Hemp Pathology

Hemp Disease Samples Submitted to TDA
2020
Bot Canker
Botrytis
Curvularia Leaf Spot
2019
Rhizoctonia web blight
Phytophthora root rot

2018

Disease issues for 2018 included bud rot, fungal leaf spots, root rot, southern blight, and powdery mildew.

2017

There was no report of any disease issues for 2017 and no samples were submitted.

2016

Diseases (Southern Blight, Powdery Mildew, Fusarium sp., and Curvularia leaf spot

*Data was not gathered prior to 2019.

Hemp Entomology

Hemp Insect Samples Submitted to TDA		
2020		
Broadmites		
Russet Mites		
Aphids		
Corn Ear Worm		
2019		
Hemp borer		

2018

Insects of concern for growers include: corm worm, aphids, mites, caterpillars, thrips, white flies, slugs, grasshoppers, fungus gnats, and a variety of beetles.

2017

Pests of concern for growers include: insects (fungus gnats, stink bugs, cutworms, Japanese Beetles, flea beetles, cabbage worms and aphids) and wildlife (deer and doves).

2016

Pests of concern for growers include: insects (cutworms, cabbage worms and aphids), wildlife (deer, horses, turkey and doves).

Hemp Community Outreach

- From the beginning, the Hemp Program has required extensive public outreach for many reasons. Hemp is an inclusive and diversified program drawing interest across communities, from experienced farmer to folks who had never grown anything.
- Programs were developed and presented across the state in conjunction with The University of Tennessee to meet the needs and answer the questions of growers.
- The attendance to these meetings reached over 4,500. Interest in hemp remains strong today because of its sustainability, environmental and commercial possibilities.

Plant Cert. Employees

	2015	2016	2017	2018	2019	2020
Administrative					1	2
Coordinator					1	1
Inspectors					4	4

2021 Hemp Program

- 2021 Operate as we did last year
 - at least one inspection and sampling for the year/one variety
 - only reporting Delta 9 THC
 - 30-day sampling window
 - State contracted with 3rd party to sample (DEA approved)
<https://www.hemptesthats.com/>
- Looking to 2022
 - Begin January 2022, USDA Final Rule
<https://www.ams.usda.gov/rules-regulations/hemp>
 - Total THC
 - Every variety sampled/Performance Based Sampling
 - Work with FSA