

## Hemp 101: The Basics for Tennessee Farmers

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Hemp is a versatile crop with multiple market options. These options include fiber, grain, and cannabinoid extracts. Hemp is well suited to Tennessee's climate, but growers must consider risk, state regulations, and development of clear marketing plans.

### What Is Hemp?

**Definition:** Hemp (*Cannabis sativa* L.) is a variety of cannabis that is non-psychoactive, legally defined as containing no more than 0.3% delta-9 tetrahydrocannabinol (THC) on a dry-weight basis.

**Distinction from Marijuana:** While genetically similar to marijuana, hemp is bred for industrial end-uses or medicinal compounds (fiber, grain, non-THC cannabinoids) rather than the high psychoactive content (THC) found in marijuana. Both hemp and marijuana are classified as cannabis.

**Historical Context:** Formerly a staple fiber crop in the United States, hemp production declined during the 20th century. Recent federal and state reforms have reopened opportunities for cultivation and processing, but the regulatory landscape can be difficult to navigate.

### Varieties of Hemp & Profit Potential

**Fiber Hemp:** This type of hemp grows tall with long and fibrous stalks. The stalks can be processed for making textiles, rope, biocomposites, and building material. The byproduct of this hemp can also be sold as feedstock or animal bedding.

**Grain (Hulled Seed) Hemp:** Short bushier plants with an abundance of flowers and seeds. The seeds are harvested for human consumption, oil extraction, animal feed (specifically laying hens), or birdseed.

**Floral (CBD/CBG) Hemp:** Medium height, densely flowering plants bred for high cannabidiol (CBD) and



AI generated image of a flowering hemp field.

other minor cannabinoids (cannabinol, cannabigerol, cannabichromene). Flowers and biomass are harvested for cannabinoid extraction to produce a variety of CBD and other cannabinoid products.

### Compounds Produced by Hemp

**Cannabinoids:** The two major cannabinoids produced in hemp flower are CBD and THC, while other minor cannabinoids include cannabinol (CBN) and cannabigerol (CBG).

**Terpenes:** Aromatic oils contributing to flavor, smell, and possible synergistic benefits of extract (sometimes referred to as "the entourage effect").

**Cellulose & Lignin:** Structural polymers in the stalk of hemp plants. Basic structural component for paper, textiles, and bioplastic production.

**Hemp Seed Oil:** Used in food, cosmetics, and biofuel, this oil is rich in omega fatty acids and is seen as healthy and beneficial for human consumption.

### Tennessee State Law Surrounding Hemp

**Regulatory Authority:** Tennessee Department of Agriculture (TDA) oversees the hemp program, but authority will transfer to Tennessee Alcoholic Beverage Commission (ABC) at the start of 2026.

**Licensing Requirements:** Separate licenses are required for growing hemp and processing or handling hemp. There are annual fees for licenses and applicants must pass a background check.

**THC Testing & Compliance:** The TDA collects plant samples 15-45 days before hemp harvest. Samples testing greater than 0.3% THC in dry weight are considered marijuana, and the entire crop must be destroyed. Retesting is possible if the sample is close to the limit, but strict compliance is enforced.

**State-Level Restrictions:** A house bill passed in May 2025, banning synthetic cannabinoids and reclassifying tetrahydrocannabinolic acid (THCA) as a form of THC. This means hemp flower possessing THCA greater than 0.3% THCA will also be considered illegal.

**Reporting & Record-Keeping:** Planting records, seed lot certificate, and sample test results must be kept for three years. Change in farmland acreage should also be reported to the TDA until authority shifts to the ABC.

## Resources to Assist with a Hemp Operation

**Tennessee Department of Agriculture (TDA):**

[License Requirements.](#)

[Resources for Producers.](#)

**Tennessee State University Extension (TSU):** [TSU Hemp Pest Guide.](#)

**Hemp Alliance of Tennessee (HAT):** [HAT's list of hemp processors, seed and clone providers, and grower resources and industry reports.](#)

## Business Opportunities to Add Value

**On-Farm Processing Model:** Larger hemp operations can incorporate a drying/trimming service to local growers who lack space for drying and trimming floral hemp. Despite potential risks, investing in a dehulling or fiber processing facility could provide an opportunity for increased income.

**Direct-Market Channels:** Farmers markets are a great place to sell hemp seed or hemp seed oil directly to consumers. Hemp farms also have high agri-tourism potential and farmers can set up a "U-pick" for hemp flower, and the field could be used for hands-on educational workshops

**Contract Growing:** Partnering with processor companies or feedstock buyers is beneficial to guarantee the sale of your hemp harvest.

## Tennessee-Specific Considerations

Check with TSU or University of Tennessee for regionally tested cultivars that perform well in Tennessee's climate.

Some counties require zoning approval. Be sure to consult your local planning office before planting.

## Potential Risks in Hemp Production

**Pest & Disease Pressure:** Insects like russet mites, aphids, and earworms can damage hemp flowers and plants, as well as spread disease. Botrytis and powdery mildew are diseases that can occur in humid climates, like Tennessee's, and severely damage the plant and impact harvest potential.

**Market Instability & Volatility:** Floral hemp prices have dropped dramatically due to overproduction, and biomass and crude oil prices are still volatile. Tennessee has very few processors for grain and fiber hemp, so transportation and logistics can increase costs.

**Regulatory Risk:** If a hemp crop tests above 0.3% THC or THCA, the entire crop may be destroyed with no compensation to the farmer. Plant stressors like excess heat, drought, or late harvest can cause a crop to exceed 0.3% THC.

## Additional Concepts to Explore

**Organic Certificate:** While organic hemp is more costly to produce, it is also sold at premium prices. Consider obtaining an organic certification if your operation can meet USDA organic standards.

**Crop Rotation Benefits:** Hemp is carbon sequestering, meaning you could be eligible for carbon credit. Hemp taproot can also improve soil structure, allowing for other crops to grow more easily in hemp's off season. Hemp is also an advanced bioremediator, absorbing and removing heavy metals and toxins from contaminated soil.

## For more information

[Tennessee Hemp Production Program Structure.](#)

[Tennessee Hemp Rules and Regulations.](#)

[The Ultimate Guide to Growing Hemp.](#)

[Industrial Hemp Production.](#)

[Tennessee State University Hemp Research.](#)