

State of Maine Hemp Handbook

Licensing and Agronomy Primer for Growers



Photo credit: Mary Yurlina



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TABLE OF CONTENTS

Introduction	2
The Process for Obtaining a Hemp License	3
Step 1. Application	3
Step 2. Draft Hemp License Agreement	4
Step 3. Final Hemp License Agreement	6
Step 4. Planting Report	6
Step 5. Growsite Inspections	7
Step 6. Scheduling Sampling Visit(s)	7
Step 7. Receipt of Certificate of Analysis (COA) for Sampled Hemp Lots	7
Step 8. Harvest Reporting	8
Step 9. Communicating Changes About Your Hemp Operation	8
Sampling Protocol for Pre-harvest Testing	8
Basic Hemp Agronomy	8
Selecting Seeds, Seedlings and Clones	10
Pest Control and Pesticides	10
Organic Hemp	11
Appendices—Please Use Links	
Outdoor Application Form	
Indoor Application Form	
Landowner Consent Form	
Outdoor Planting Report Form	
Indoor Planting Report Form	
Integrated Pest Management Guidance for Hemp	
Maine Registered Pesticides Products Labeled for Use on Hemp	
Flow Chart for Selecting FIFRA Section 25(b) Minimum Risk Pesticides NOT PROHIBITED for Use on Cannabis	
Flow Chart for Selecting EPA Registered Pesticide Products NOT PROHIBITED for Use on Cannabis	

Maine's hemp licensing program is part of the Department of Agriculture, Conservation and Forestry (DACF). The hemp growers license is the only license specifically pertaining to hemp that the State of Maine offers. It is a required license for anyone seeking to grow hemp for commercial purposes. Maine does not yet have licensing or registration programs for processing, handling, transporting or selling hemp or CBD products. If you are a hemp processor, understand that you may need to work with other regulatory programs, depending on the nature of your final products. For example, makers of foods containing CBD should contact Quality Assurance Regulations (QAR) about kitchen licensing and labels for your products. The US Food and Drug Administration (FDA) regulates CBD in medicine, food, and personal care products. We urge processors to read FDA's regulations and advisories concerning CBD products.

Even though hemp became a legal commodity crop in the United States with the passage of the 2018 Farm Bill, it is still a regulated crop. Hemp and marijuana are the same plant, *Cannabis sativa* L., and marijuana remains an illegal plant at the federal level as well as in some states. *Cannabis sativa* exhibits great diversity in size, form and phytochemistry. Hemp and marijuana cannot be reliably told apart by appearance. A lab test is required to determine THC content, which is the basis of the legal definition for hemp. Plants containing less than 0.3% THC by dry weight are classified as hemp, plants with a higher THC concentration are marijuana. The threshold of Total or Max 0.3% THC (dry weight) was used when Congress drafted the 2018 Farm Bill and it is the accepted legal standard for the United States. By virtue of Maine having had a pilot hemp licensing program permitted under the previous Farm Bill (2014) in which the definition of THC was presented differently, Maine and a few other states have been using 0.3% delta-9-THC as the threshold. Maine will be applying the delta-9-THC definition for hemp one more year (2021).

All Maine hemp growers need to be aware that a hemp crop can contain less than 0.3% delta-9-THC but have a Total THC concentration above 0.3% (dry weight). While such a crop is legal hemp in Maine, it is not considered legal hemp by federal law enforcement or by states that are following the federal definition. Markets for such a crop will be limited to Maine. On January 1, 2022, all states including Maine will be operating under the Final USDA Hemp Rule and the delta-9-THC definition of hemp will no longer apply. All hemp in the United States will be defined as containing no more than 0.3% Total THC in 2022.

Maine is a state where both medical marijuana and adult-use marijuana is legal. Growing, processing and using marijuana is regulated by the Office of Marijuana Policy (OMP) in the Department of Administrative and Financial Services, which is separate from Maine DACF. Hemp licensing has its own rules, administrative procedures, staffing and inspections, all of which are distinct from OMP's. Questions pertaining to growing marijuana need to be directed to OMP. Maine's hemp laws do not prohibit growing hemp and marijuana at the same address; however, plants must not be co-mingled. Separate grow sites or plots for the different *Cannabis* crops at a property are required.

If you are growing hemp for commercial purposes, you need a hemp growers license. There is no minimum number of plants or minimum area in cultivation required in order to be granted a grower license. Many licensees in Maine are growing on less than half an acre. Maine does have a personal use exemption law, and this allows adults to grow up to three flowering plants per person. Nothing from an individual's three personal hemp plants can enter the stream of commerce. If a person desires to have more than 3 plants, he or she will need a license. Once Maine becomes a USDA-approved program, there will no longer be an exemption for personal use plants and a license will be required.

Outdoor and indoor growing require separate licenses for which there are separate application forms. Licenses expire 365 days after the date of issuance. Growers are expected to apply for a license at least 30 days before they plant their crop. By “plant their crop” we mean transplant seedlings/clones or drill seeds into to the field location (grow site) identified in the outdoor license. For indoor licensees, “plant their crop” means transplant seedlings/clones into the area identified in the indoor license in which plants will grow and mature. Everyone can germinate hemp seeds and have seedlings without a license. If you intend to sell hemp seedlings to the public, you need a nursery license. If you think you may keep plants beyond the seedling stage and their number exceeds the three per adult allowed for personal use, you must get a license. Plants that are over 12” tall and plants developing any kind of flower structure are no longer considered seedlings.

Because Maine does not license hemp processors, handlers or sales outlets, we do not maintain lists of potential buyers for hemp crops. This is research you will have to do on your own. We strongly urge hemp growers to secure buyers for their crops before growing them.

Hemp licensing accomplishes the following:

1. Records your intent to grow hemp
2. Identifies where your hemp is being grown, which becomes important when there are inquiries from law enforcement about grow sites
3. Provides an official laboratory Certificate of Analysis (COA) for THC content for each lot of hemp grown, which, along with your hemp license, is needed to sell your hemp crop
4. Provides data about this new crop, which helps inform policy and programs

THE PROCESS FOR OBTAINING A HEMP LICENSE AGREEMENT

There is no application deadline. Provided there is no missing information, this is a 2-step process involving the exchange of forms and fees. Please apply for a license at least 30 days before you intend to plant. All the forms are provided as electronic links in this document—see Appendices on page 1. Maine law requires that the Department cover the costs of operating the hemp program by charging an application fee, license fee and a per acre (or per square foot for indoor grows) fee. These fees, which are non-refundable and are not to exceed a total of \$4,000.00/year, are as follows:

- \$100 application fee – this fee must be submitted with the application.
- \$500 license fee – this fee is due after approval of the application and must be submitted with the signed license agreement.
- \$50/acre fee or a \$0.25/square foot fee – this fee is due after approval of the application and must be submitted with the signed license agreement.

Step 1. Application. Choose the appropriate application for your operation – indoor or outdoor – and complete the form. You will need to identify where you will grow hemp in the application and how much area will be cultivated. One acre is the smallest unit of area for outdoor grows and the fee is \$50.00/acre. One square foot is the smallest unit of area for indoor grows and we charge and \$0.25 per square foot; multiple tiers are additive. In the case of partial acres or square feet, you must round up.

Your actual grow site may take up less area than what you are licensed for; however, it may not take up more area. Once your license agreement is final (step 3) you will not be able to add area to your license. Your only recourse for adding acreage or square footage at that point is to apply for a second license, which is expensive. So please think carefully about your production plan before you apply for a license.

When you identify a grow site, we need a street address (as close as possible) as well as GPS coordinates in decimal degrees. Google and Bing maps provide decimal degree coordinates when you drop a pin on the map (use the satellite view to see fields and buildings better). Decimal degrees look like this: **44.298199, -69.763461**. Make sure you provide at least 5 digits after the decimal point. Please do not give us coordinates with ° or minutes or seconds; we cannot use them. If you are completing an indoor application, a sketch of your interior planting layout is required. In all cases, a map or aerial image is helpful as are pointers about how to find and access the site if it is not obvious from the road. It is not in your best interest to be unclear about where your hemp is growing.

If you do not own the property where you intend to grow hemp, you must complete the landowner consent form.

Make a copy of your completed application materials for your records. The \$100 application fee (non-refundable) is payable by check or money order made out to Treasurer, State of Maine. We do not accept cash, credit cards or electronic payments. Our office, located in the Deering Hall building in the AMHI Complex in Augusta, is closed to the public due to the pandemic. Please do not attempt to drop off an application unless you have made specific plans with a staff person to do so. The simplest delivery method is to mail your application package to:

DACF-Hemp Program
28 State House Station
Augusta, ME 04333

Once we receive and review your application, we follow up with you by email. Please be sure to provide an email address that you check regularly. If you have not heard from us within 10 days of mailing your application, get in touch with staff. It is your responsibility to obtain a hemp license before you plant your crop.

Step 2. Draft Hemp License Agreement. Once your application is reviewed and approved by the hemp program staff, a license number is assigned, a draft hemp license agreement is created, and the document is emailed to you in the form of a PDF. Make sure all the following are correct in this document:

- your contact information—your phone, email, and website will be made public
- your grow site location(s)—this is confidential information under current state law, but DACF needs detailed location information including GPS coordinates in decimal degrees
- your total or maximum growing area—once the agreement is finalized, additional area cannot be added except by paying for a second license

The hemp license agreement also contains terms and conditions that all applicants must acknowledge and follow in order to become license holders:

1. I have read Maine Hemp Law 7 MRD 406-A §2231 and DACF's Chapter 274 (Rules for Growing Hemp), which are available on the state's hemp webpage.
2. Licenses are non-transferable and cannot be assigned to another business, individual, or entity.
3. All hemp plant material must be planted and harvested before the license expiration date. The licensee must reapply to participate in the hemp program each year.
4. All records relating to production, planting, cultivation, harvest and marketing of the hemp crop must be kept for a period of 3 years. The records must be made available to the Department upon request.
5. The Department may require reporting of any information or data associated with the planting, cultivation and harvest of the hemp crop. The licensee must submit all reports by the due date specified by the Department.
6. Information provided to the Department and data collected by the Department through the hemp licensing program may be publicly disclosed and may be provided to law enforcement agencies without notifying the licensee. Grow site locations may only be shared with state, county, and local government agencies.
7. Hemp will only be planted on growing areas included on the attached list.
8. Amendments to this license agreement are limited to reduction in the size of the planting area within an approved grow site and changes to contact information. Requests for amendments to this agreement must be received in writing within 10 days of the change. No reimbursement of fees shall result from a reduction in the actual number of acres (outdoor) or square feet (indoor) of hemp planted.
9. No hemp plants planted in the approved growing area(s) shall be included in other licensed Cannabis production programs. No growing area may contain Cannabis plants which the licensee knows or has reason to know are of a variety that will produce a plant that when tested will contain more than 0.3% delta-9-tetrahydrocannabinol (delta-9-THC) on a dry weight basis.
10. The licensee must submit a planting report and complete a post-harvest survey. Deciding not to plant or having a failed crop is a change to the application that must be communicated to the Department.
11. The licensee will allow the inspection and sampling of the hemp crop at any and all times that the Department deems necessary. The licensee will be notified prior to inspection and sampling. During inspection and sampling, the licensee or authorized representative will allow complete and unrestricted access to all hemp plants within the licensed growing area(s).
12. If the hemp crop has not been inspected and sampled 25 days prior to the anticipated harvest date, the licensee will notify the Department of intent to harvest.
13. For each crop harvest, hemp plants will be sampled by variety. Indoor operations may have multiple crop harvests per year, and each harvest will require sampling.
14. Crops testing above the allowable 0.3% delta-9-THC limit on a dry weight basis will be destroyed in a manner approved by the Department. The licensee is responsible for paying all costs associated with crop destruction.
15. A signed and initialed copy of this agreement must be returned to the Department with the correct licensing fee. This agreement is not valid until the Department representative signs the agreement and assigns a license number. The Department will provide a completed signed copy of this agreement to the licensee to serve as proof of licensure.

16. I understand that any violation of 7 MRS 406-A § 2231, 01-001 Chapter 274 or this agreement shall be grounds for license revocation. I further understand that the activities described in this agreement may be considered a violation of federal law and that persons growing hemp may be subject to federal sanctions for what may otherwise be considered authorized conduct in the State of Maine. Compliance with this agreement does not exempt licensees from federal prosecution. The Department is not responsible or liable for actions of the hemp licensee under this agreement.

After initialing all the terms and conditions, signing the agreement, and enclosing your license fees (use check or money order, made payable to Treasurer, State of Maine), please mail the package to the Hemp Program (see address in Step 1).

Step 3. Final Hemp License Agreement. Once we receive your second packet and confirm that everything is in order, a hemp program staff member will then sign and date the license agreement making it final. We generate the expiration date for your license agreement, which is 365 days from the date we sign and issue the license. We then send you an email with a PDF of your final hemp license agreement.

You are now ready to plant hemp. If you are planting more than one variety or cultivar, please plant each one in a distinct lot. Do not comingle the plants or alternate the varieties within in a row or block. Each type of hemp should be planted in its own row or block. Inspectors need to be able to identify and sample distinct hemp lots.

Other facts about your hemp license agreement:

1. It's non-transferable.
2. You can plant less area (acreage or square footage) than your agreement states, but you must not plant more area.
3. You can have multiple licenses.
4. If two growsites are more than 50 miles apart, you will need separate licenses for them.
5. If you decide to grow more area than is stipulated in your final license agreement, you will need a second license.
6. Communicate any changes to your contact information within ten days of the change. Make sure DACF has good phone numbers and email addresses for you and your alternate contact person. Email and phone, including voice messages, are our chief way of contacting you. Texting is not a preferred method.
7. DACF shares licensee name, email, phone and website information with anyone who requests this information and we also maintain a list of licensees on our website. We do not share address or location information.
8. The license does not automatically renew. If you are licensed to grow outdoors, you are expected to apply for a new license each year, and at least 30 days before you plant, regardless of the expiration date on your current license from the last growing season.

Step 4. Planting Report. Within 2 weeks of planting your crop outdoors or establishing your indoor setup, you must submit a planting report which tells us what varieties or cultivars you are growing and precisely where they are growing on the licensed growsite(s). An electronic link for this form is in the Appendices on page 1. In addition, documentation for each source of hemp seeds or seedlings or clones must be

enclosed, and the documentation must include a Certificate of Analysis (COA) for the flowers of the parent plants of each variety or cultivar you plant. In other words, we need to see evidence that what you are planting is hemp and not marijuana. If the parental lot of the hemp you want to grow has THC levels above 0.3%, you should not grow it. Seed companies ought to have this information readily available to customers. If they do not, you may want to shop elsewhere.

Step 5. Growsite Inspections. We may choose to inspect your growsite while your plants are growing. If we do, we will make contact first as we would like to meet you and talk about hemp. During this visit, we confirm the information you provided in your application and planting report, including how to best navigate to your site. We are also interested in learning as much as we can about pests and disease on hemp in Maine so we may take photos or collect insects and other pests while we visit.

Step 6. Scheduling Sampling Visit(s). In your planting report, we ask for anticipated harvest dates for each hemp lot you grow. We will use these dates as a conversation starter for scheduling a time to take pre-harvest samples for THC testing. Growers need to actively update staff about harvest plans by email and phone as we approach the end of summer, keeping in mind that we will need lead time to plan our visit.

THC content in hemp flowers is not static and for the most part keeps increasing as plants mature, which means that a single THC test result will not accurately represent the THC content of a given hemp lot indefinitely. Maine state law gives growers 25 days to harvest their hemp after it has been sampled. If, as an example, an inspector was on your farm taking flower samples from your Otto II hemp lot on October 1, you have through October 25 to harvest that Otto II crop. If you wait longer than 25 days, a new sample will be required, and the licensee will have to pay for it, since the license fee covers one THC sample per lot. It has been taking about 10-13 days to receive test results and you will need this document to sell your hemp. If your plan is to sell your crop right from the field (e.g., a pick your own hemp sale) a sampling visit will need to be carefully planned so that you have the test result in time. The Hemp Program receives the Certificate of Analysis (COA) report from the lab, then the Hemp Program emails the COA to the licensed grower.

If you are 25 days before your harvest date and you have not had a conversation with the hemp program about sampling, you must make contact. We need a couple days to a week to fit your growsite into our field schedules. If you are growing multiple hemp lots with different harvest dates, you will likely need to schedule multiple sample visits with hemp program staff.

Step 7. Receipt of Certificate of Analysis (COA) for Sampled Hemp Lots. Shortly after we receive a COA for a sampled hemp lot, we record the results in our database and send it as a PDF to the hemp licensee to which it belongs. The COA only provides analytical results for delta-9-THC, THCa, and Total THC. We do not test for anything else in your hemp. THCa or 'THC acid' is a precursor to THC. It is used in the calculation of Total THC. When heated THCa converts to THC (this is called decarboxylation) at a rate of about 87%. The USDA uses the formula $\text{Delta-9-THC} + (\text{THCa} \times 0.87) = \text{Total THC}$ and a concentration over 0.3% THC is no longer hemp but marijuana. In Maine, we are continuing to use the delta-9-THC threshold on 0.3% as the definition for hemp for one more year.

- Both % delta-9-THC (dry weight) and % Total THC (dry weight) are at or below 0.3%. Your hemp lot complies with both Maine and federal regulations defining hemp.
- Delta-9-THC is at or below 0.3% (dry weight); however, Total THC is above. This means the hemp lot meets Maine's definition of hemp but not the federal definition, which is also the definition

used by many other states. These hemp crops should remain within Maine unless processed in such a way to reduce the Total THC to below 0.3%.

- Hemp lots with a delta-9-THC concentration above 0.3% (dry weight) will be destroyed in a manner determined by DACF.

Step 8. Harvest Reporting. At the end of the year all licensed hemp growers are required to complete an hemp harvest report. We have been collecting this information anonymously and presenting it in aggregate form. The annual hemp report that DACF produces with this data for the state legislature is mandated in statute and provides lawmakers with important information about the status of this new crop in Maine.

Step 9. Communicating Changes About Your Hemp Operation. We understand that farming does not always go as planned. If you decide not to grow hemp after obtaining a license, please let us know. If you plant, but your crop fails, please let us know. We are expected to maintain an accurate account of hemp production in Maine.

Please keep records about your hemp operation and production activities. Records will help you learn. They should be detailed enough to demonstrate compliance with all applicable regulations, enable traceability for hemp lots, and be able demonstrate to your markets that you grew a quality product. Hemp records must be kept for a minimum of three years.

SAMPLING PROTOCOL FOR PRE-HARVEST TESTING

We endeavor to take a sample from each hemp lot grown by a licensee, although we reserve the right to take an aggregate sample that includes more than one variety. A hemp lot is a single variety or cultivar of hemp, grown in a defined area, that will be harvested as a unit. It is in the farmer's best interest to maintain distinct lots and have good labeling and record systems for them. Should a problem arise (e.g., hot THC test results, a contamination event) a good lot system allows the grower to narrow down the problem to just the effected lots and not the entire crop.

Samples are taken by DACF employees who are staff of the hemp licensing and horticulture programs. We select well-developed bud/flowers from branches arising from the top 1/3 of the hemp plant. The lengths of the cut flower ends are 2-6". These are placed in a clean plastic collection bucket. We walk through the entire lot, in a sawtooth pattern if that is possible, randomly selecting plants that look healthy. We do not want to sample plants that are damaged, yellowing, or showing signs of stress and we will avoid such plants if we can. For a typical lot where there is 0.25 – 1.0 acre of plants, we are collecting 20-25 flower pieces from 20-25 plants, which is more than USDA requires, but we believe this will provide a more representative and accurate test result. These flower pieces are mixed in the collection bucket and then split into two brown paper lunch bags. Each bag is labeled to identify the date, the inspector, the sample sequence number, the hemp license number, and the variety (lot). The sample bags are stapled shut, a chain of custody form is filled out, and the bags are placed in a container to keep them cool and dry in the vehicle. If staff are in custody of samples beyond the day of collection, they are refrigerated until pick-up by the lab (ProVerde). The lab gets a split sample (2 bags) for each hemp lot sampled. The contents of the bags are prepped by the lab, but only one is analyzed. The other split

sample is held in reserve in case questions arise about the test results and a retest is desired. After three months, all samples are destroyed. These samples cannot be used by growers for any other analyses.

Between each lot that is sampled, pruners and collection buckets are wiped with Lysol or rubbing alcohol to prevent the spread of disease and to remove resin. We are mindful about the potential to spread weeds seeds, pathogens, and pollen between growsites and take reasonable precautions to avoid doing so. If you have concerns about biosecurity, please discuss them with staff in advance of the farm visit. Indoor growers should let us know if special head lamps, eye protection, coveralls, etc., are needed when visiting your facility.

BASIC HEMP AGRONOMY

Despite its reputation as a ditch weed, your hemp crop will do much better when treated like a small-grain or corn crop. Resist the temptation to drill seeds or seedlings directly into pasture or freshly bulldozed ground. You will get a poor result. We include a few words about growing the crop to inspire new growers to seek more detailed information before they launch into a hemp growing project.

Cannabis sativa L. is a short-day, annual plant species that evolved in Asia. It is dioecious, which means that it has separate male and female plants. Modern plant breeders, however, have been able to create day-neutral types (known as “autoflower hemp”) and monoecious types, in which male and female flowers occur on the same plant. Feminized plants are also available on the market. Polyploid hemp types are probably not far behind. These developments can help growers have greater control over flower timing or avoid pollen production.

Hemp grown for its flower (CBD) are usually not grown from field sown seed. Instead, seedling and clones are typically planted on 4 to 5-foot centers. The field will eventually look like an orchard or a young Christmas tree farm. Using feminized seed for seedlings or planting clones are ways that growers can gain more control over the gender and genetics of their hemp. Males plants are not wanted in a flower (CBD) operation and they need to be pulled before they produce pollen. Scouting fields for males and removing them throughout the summer is a labor-intensive activity.

Hemp grown for grain and fiber crops are field sown with seed, typically using a grain drill, and at a much higher density, just like a grain crop. Males are not rogued; indeed, you need males to fertilize female plants in order to harvest hemp seed. In fact, some seed varieties bred for grain or fiber are monoecious. Pollen from male flowers can travel great distances on the wind so it’s important to locate your fields away from hemp and marijuana growers who are producing flowers and do not want their plants pollinated. We’ve seen recommended buffer distances ranging from 3 to 10 miles.

In all hemp production systems, the root zone for your crop needs preparation. Soil tilth should allow for good drainage and ample root growth. While hemp requires a considerable amount of water to reach maturity, it does not tolerate ‘wet feet’ for extended periods so avoid poorly drained soils and compacted ground. If you know that a field’s soil contains 40% or more clay, it is not going to be good for hemp growing. Hemp likes near neutral soil pH (6 to 6.9) and has a healthy appetite for N-P-K. Hemp is a relatively heavy user of nitrogen (N) and potassium (K). Magnesium (Mg) and Boron (B) are favored micronutrients. Get soil tests done and ask for recommendations for industrial hemp to know precisely what amendments your fields need.

For the past several summers, Maine has experienced drought conditions. A reliable water source and a practical irrigation method have become increasingly important. Hemp grown for flower needs 20-30" of water over its roughly 4-5-month lifespan. It is particularly thirsty during the first 6-8 weeks, requiring 1.5" of water per week. Remember, keep an eye on your soil and don't create water-logged conditions. Just because you installed drip irrigation doesn't mean you have to use it all the time!

Young plants are poor competitors and weed management will be needed, especially early in the season. Keep in mind, there are no herbicides that can be used in a hemp field. Cultural methods (previous seasons of cover/smother crops) and mechanical methods (weed harrowing, mowing, weed barriers such as plastic mulch) are options.

Not recommended:

- Planting hemp on newly cleared/logged land. Soil tilth and soil pH will not be suitable for hemp without grubbing, tillage and additional field prep. Take soil tests.
- Planting in soil that appears heavy, wet, or poorly drained. The weeds and natural vegetation in a location can tell you a lot about the type of ground you are considering; avoid places with wetland plants and moisture-loving weeds.
- Planting in degraded and compacted soils. Hemp needs a comfortable root zone to thrive. Land that has had a lot of heavy equipment traffic or excavation activities may be compressed and lacking in topsoil and organic matter. Fields that have an industrial land-use history may ill-advised for reasons besides poor soil structure. Contaminants like metals are readily taken up by hemp and can pose a health risk in products made with the crop. The basic soil test available from the University of Maine Soil Lab includes a lead scan. The University Lab can test for other metals upon request.
- Planting too close to schools and other community gathering places. Hemp will become odiferous as it matures. Because it looks and smells just like marijuana, it may generate complaints and attract thieves. Chose growsites that are private and secure. Municipalities may have zoning regulations concerning hemp farms so check with your local town office.
- Planting hemp in the same ground, year after year. It's a new crop for Maine, so we've been getting away with it. However, we now starting to see more fungal disease in hemp fields. Crop rotation is the first step in managing pests and diseases.

Recommended:

- Soil tests. Know your soil's nutrient and organic matter content, pH, and whether lead (Pb) contamination is a concern. The University of Maine Soil Testing Lab offers soil amendment recommendations for industrial hemp.
- Talk to a hemp crop specialist. John Jemison at the University of Maine Cooperative Extension may be able to help: 207.581.3241 or jemison@maine.edu
- Take in some webinars and videos. There is now a plethora of content on the web concerning hemp growing. Choose wisely, however. We recommend hemp conferences and grower series sponsored by universities in the Northeast and Upper Midwest; these will be most relevant for Maine growers. We have links to selected resources on our hemp web page.

SELECTING SEEDS, SEEDLINGS & GENETICS

DACF does not have a list of hemp seed sources. Maine growers who sell hemp seedlings or clones are required to get a Maine nursery license and we will post a list of these vendors on the horticulture website.

When selecting the variety of hemp to grow make sure to consider whether it may have THC levels approaching or exceeding 0.3% (dry weight). Many factors impact the expression of THC. Genetic variation is a major issue. One source of “Cherry” may not be genetically the same or as stable as another source of “Cherry” hemp. Hemp breeding is in its infancy. Seed certification exists for very few hemp varieties and most of those are for grain and fiber types. Choose your vendor for hemp genetics very carefully. Also, make sure that the COAs you are given are based on mature flower samples and that the dates on the tests make sense.

Maine does not certify hemp varieties; we neither approve nor prohibit varieties. There are states that do, and it would serve growers well to look up these lists online as part of your decision-making process. Based on our 2020 sampling data, for which most of our samples were single variety lots, there were several varieties with lots testing above 0.3% for Total THC. They were Boax, Lifter, Suver Haze, Wife, Cherry Wine, Cherry Mountain, Mountain Mango, Super T1, Cat’s Meow, and Hawaiian Haze. These are popular CBD-hemp varieties and it should also be noted that many growers produced lots with these same named varieties that did not have Total THC above 0.3%.

PEST CONTROL AND PESTICIDES

There are few EPA registered pesticides for use on hemp. Because of its complicated back story and legal status, research on *Cannabis sativa* has been hindered for decades so there is a lot of catching up to do. Hemp is not just a fiber crop or a grain (food) crop. In the last decade, a lot of hemp has been grown for CBD and other cannabidiols for use as medicine and as other purported therapeutics. Hemp (CBD) is taken internally via the digestive tract, the skin, and the lungs. This adds complexity to the task of evaluating the safety of pesticides for this crop.

DACF’s Board of Pesticide Control (BPC) has issued a list of Maine Registered Products Labeled for Use on Hemp. There are also two decision trees to use to help understand if a pesticide product is not prohibited for use on hemp. These are in the Appendices (page 1) as electronic links. If you have questions about these documents or about pesticide products not appearing on the list, please contact Mary Tomlinson (mary.e.tomlinson@maine.gov or 207-287-2731).

Keep in mind:

- Pest control products bearing the OMRI (Organic Materials Review Institute) seal are NOT automatically approved for use on hemp. You must examine the product label.
- Pest control products allowed for use on other organic crops are not necessarily approved for use on hemp. You must examine the label.
- Home-made formulations crafted with ingredients from your pantry are not allowed to be used as pesticides on any crop in Maine.

- Avoid applying anything to your flowers, especially if you are approaching harvest. Read product labels carefully.
- Just because a pesticide is allowed on hemp in another state, does not mean that it is allowed on hemp in Maine. Please direct questions to Mary Tomlinson, Maine BPC.

We recommend that hemp growers consider implementing DACF's guidance on IPM (Integrated Pest Management) for hemp. See the Appendices on page for a link to this document. Cultural practices can help growers reduce or eliminate the need for chemical solutions to pest problems. One of the most important cultural practices an outdoor grower can use for the management of disease is crop rotation. Growers using the same plot of land for hemp every year are strongly encouraged to add other land parcels to the farm plan. Giving your 'hemp field' regular breaks from production will promote soil-building and help break disease and pest cycles.

ORGANIC HEMP

The State of Maine is not an organic certifying agent and cannot issue organic certificates for hemp crops. If you are interested in organic certification, the USDA's National Organic Program explains the standards for marketing crops as organic and has a list of accredited certifying agents. Maine is home to MOFGA Certification Services LLC (MCS), a USDA-accredited certifying agent. MCS has experience working with hemp. Maine growers can use any accredited certifier that is willing to certify farms in Maine. There are land eligibility requirements for producing organic crops and you can expect organic certifiers to have spring deadlines for new applicants.

Thanks for reading! We aim to update this handbook regularly. Do you have content suggestions? Let us know. We appreciate the feedback. Contact Gary Fish, State Horticulturist, at gary.fish@maine.gov or 207-287-7545.