

Department of Agriculture and Markets

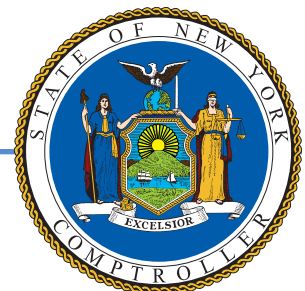
Oversight of Industrial Hemp

Report 2018-S-32 | December 2019

OFFICE OF THE NEW YORK STATE COMPTROLLER

Thomas P. DiNapoli, State Comptroller

Division of State Government Accountability



Audit Highlights

Objective

To determine whether the Department of Agriculture and Markets (Department) is adequately administering the Industrial Hemp Agricultural Research Pilot Program (Program) in accordance with federal and State requirements. The audit covered the period April 1, 2016 through May 31, 2019.

About the Program

Industrial hemp is an expanding commodity in the United States, as both the stalk and seed can be used to produce a wide range of products, from clothing to building materials and biodegradable plastics. Federal and State law define industrial hemp as any part of the *Cannabis sativa L.* plant with a delta-9 tetrahydrocannabinol (THC) concentration of no more than 0.3 percent. The federal Agricultural Act of 2014, among other actions, authorized institutions of higher education and state departments of agriculture to grow or cultivate industrial hemp for research purposes. In New York State, Article 29 of the Agriculture and Markets Law launched the Program, which is administered by the Department. In December 2018, the Program had 156 participants (growers); by July 2019, that number increased by 169 percent to 419 growers. The Department processes and approves Program applications, and then is responsible for conducting pre-growing inspections and for sampling plants to test THC levels before harvested industrial hemp enters the supply chain.

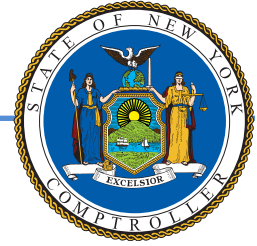
Key Findings

The Department's Program has rapidly expanded opportunities for industrial hemp production in the State. However, the Department does not always follow established practices when reviewing applications, conducting inspections, and sampling plants.

- The Department inspected only 57 percent of growers in the Program and tested plant THC levels for only 58 percent of the growers during 2018. According to the Department, staffing shortages and competing priorities affected its ability to inspect and sample. Incomplete records and unreliable data systems further hinder its ability to effectively monitor Program requirements.
- The Department generally accepts most grower applications, even if they are incomplete or contain risk factors that officials state they screen for during their review.

Key Recommendations

- Take steps to improve the usability, accuracy, and completeness of Program data, including implementing procedures for input, quality assurance, and use of information.
- Develop, implement, and follow clear and consistent procedures for processing Program applications, conducting inspections, and sampling plants.



**Office of the New York State Comptroller
Division of State Government Accountability**

December 9, 2019

Mr. Richard Ball
Commissioner
Department of Agriculture and Markets
10B Airline Drive
Albany, NY 12235

Dear Commissioner Ball:

The Office of the State Comptroller is committed to helping State agencies, public authorities, and local government agencies manage their resources efficiently and effectively. By so doing, it provides accountability for the tax dollars spent to support government operations. The Comptroller oversees the fiscal affairs of State agencies, public authorities, and local government agencies, as well as their compliance with relevant statutes and their observance of good business practices. This fiscal oversight is accomplished, in part, through our audits, which identify opportunities for improving operations. Audits can also identify strategies for reducing costs and strengthening controls that are intended to safeguard assets.

Following is a report of our audit entitled *Oversight of Industrial Hemp*. This audit was performed pursuant to the State Comptroller's authority under Article V, Section 1 of the State Constitution and Article II, Section 8 of the State Finance Law.

This audit's results and recommendations are resources for you to use in effectively managing your operations and in meeting the expectations of taxpayers. If you have any questions about this report, please feel free to contact us.

Respectfully submitted,

Division of State Government Accountability

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Glossary of Terms

Abbreviation	Description	Identifier
CBD	Cannabidiol	<i>Key Term</i>
Department	Department of Agriculture and Markets	<i>Auditee</i>
Division	Division of Plant Industry	<i>Division</i>
Food Laboratory	New York State Food Laboratory	<i>Division</i>
Grower	Program participant	<i>Key Term</i>
Law	Agriculture and Markets Law Article 29	<i>Law</i>
Program	Industrial Hemp Agricultural Research Pilot Program	<i>Program</i>
THC	Delta-9 tetrahydrocannabinol	<i>Key Term</i>

Background

Industrial hemp is an expanding commodity in the United States, as both the stalk and seed can be used to produce thousands of different products, including clothing, building materials, fuel, paper, and biodegradable plastics.

On February 7, 2014, the Agricultural Act of 2014 was signed into federal law and, in part, authorized institutions of higher education and state departments of agriculture to grow or cultivate industrial hemp for research purposes. In response, Article 29 of New York's Agriculture and Markets Law (Law) was enacted, launching the Industrial Hemp Agricultural Research Pilot Program (Program). The Department of Agriculture and Markets (Department), through its Division of Plant Industry (Division), administers the Program. The Division has various other responsibilities, including detecting and preventing the spread of diseases and harmful invasive species, promoting integrated pest management, regulating the sale of seed and fertilizers, and ensuring the health of honey bees. The Division conducts inspections of places such as nurseries, orchards, greenhouses, and transportation pathways to identify threats to the State's plant industry. As of July 2019, the Division had 98 employees; however, one temporary employee was dedicated solely to the Program.

Federal and State law define industrial hemp as any part of the plant *Cannabis sativa L.* with a delta-9 tetrahydrocannabinol (THC) concentration of no more than 0.3 percent (based on dry weight).

An important aspect of the Program, and a major focus of the Department, is to develop consistent and stable hemp seed suitable for New York's climate. Previous work on the subject was destroyed at the federal level in the 1980s, when hemp was considered a Schedule 1 drug by the U.S. Drug Enforcement Agency.

The Department initially limited Program participation to educational institutions, even though the Law permitted up to ten sites to grow or cultivate industrial hemp for research purposes and did not address or limit the types of entities or individuals who could participate in the Program. Additional State legislation passed in 2016 and 2017 removed the limit on the number of sites, at which point the Department expanded the Program to other entities, such as farmers and businesses, and allowed the sale and distribution of industrial hemp in connection with research projects.

The federal Agriculture Improvement Act of 2018 made numerous changes to the industry, including removing industrial hemp from the federal Controlled Substances Act definition of marijuana and allowing states to have primary regulatory authority over hemp production through plans approved by the U.S. Department of Agriculture. Plans must include a procedure for testing levels of THC in hemp. The Department also operates the New York State Food

Laboratory (Food Laboratory) in Albany, which provides testing of samples of industrial hemp collected as part of the Program.

As of December 2018, the Program included 156 participants (growers), expanding to 419 by July 2019 (an increase of 169 percent). That number is expected to further increase as Department officials were still processing Program applications at the conclusion of our audit.

The Department has developed guidance for applying to the Program, conducting pre-growing inspections, submitting reports, and sampling plants. All Program participants are required to complete an application to grow and process hemp. This includes affiliate growers – individuals or entities approved to grow industrial hemp for other authorized growers. Per an agreement between affiliate growers and the Department, affiliate growers are not authorized to grow and cultivate industrial hemp beyond the termination or expiration of the main Program participant’s authorization.

The Program application requires some general information, relevant experience, growing location coordinates, seed/propagule acquisition plan, marketing strategy, and a research plan detailing a summary of matters the applicant intends to study.

The Department has the authority to deny applications for a variety of reasons and may reject incomplete submissions or those that list an illegitimate, non-research use or research for medical purposes. Department officials also consider risk factors, such as an indication that products will be tested on human subjects, applications from minors or unsupervised students, and growing sites located in a backyard, in a suburban area, or close to a school.

Prior to the growing season, the Department inspects Program participants to ensure that the planted crop matches the research plan submitted with the application. Growers are then required to submit a Harvest Report to the Department 20 days before their anticipated harvest date. The receipt of the Harvest Report triggers Department inspectors to sample the harvestable plants. During these site visits, inspectors take samples of the plants and the Food Laboratory tests them to determine if they contain more than 0.3 percent THC.

Authorization and Testing Process

The Department’s Program guidance requires that growers promptly dispose of all industrial hemp reasonably believed, based upon the results of regulatory or other sampling, to have a concentration of more than 0.3 percent THC (based on dry weight).

Department officials stated they do not have the resources to sample every grower, but it is their practice to sample all growers harvesting industrial hemp for Cannabidiol (CBD), as those plants present the greatest risk of producing hemp with higher THC levels and the growing conditions and general appearance of the plants are similar to those with higher THC levels. The Department also uses a variety of other risk factors to rank which growers to inspect and sample.

Growers are also required, before or on the anniversary of the project start date, to submit an annual report summarizing the results of their research pilot project and presenting any data collected through that research. The Department can use these reports to develop and analyze risk factors, such as hemp strain-specific data that could be used to identify weaknesses or highlight anomalies that are not otherwise apparent and which may help focus future testing efforts. Our audit focused on the Department’s authorization of growers and administration of the Program through inspections and plant sampling.



Audit Findings and Recommendations

The Department's Program has rapidly expanded opportunities for industrial hemp production in the State. However, compliance with State and federal requirements could be improved. We found that the Department did not inspect and sample all growers and did not always assess for risk factors or follow established practices when reviewing applications, conducting inspections, and sampling plants.

The Department inspected only 57 percent of growers and tested sampled plants for THC levels for only 58 percent of Program participants. Additionally, the Department may have approved applications that were incomplete or that indicated an unauthorized purpose for Program participation. Furthermore, the Department has only a draft policy for handling the disposal of non-compliant plants, which it is not following.

While the Department indicated that staffing shortages and competing priorities factored into its inability to inspect and sample all growers, incomplete records and unreliable data systems hinder effective monitoring and informed decision making. Improved information systems and targeted analysis would help the Department more effectively focus its resources on areas of greater risk – a strategy that will become increasingly more important as additional growers enter the Program.

Application, Inspection, and Sampling Process

Applications

We found that the Department generally accepts most grower applications, even if they are incomplete or contain risk factors that officials stated they look for during their review. Therefore, we question whether all growers should have been authorized under Program guidelines. We reviewed information for all 156 participants approved as of December 2018, finding eight applications were not dated – five of which were also missing the grower's signatures. Additionally, some applications contained other red flags. For example, on one application, the stated purpose of growing was to "test this in the daily lives of veterans that have the effects of war that cause them pain every day," which appears to be a medical use not allowed under the Program. Some applications also contained several addresses, and it was unclear which were growing locations and which were homes or offices.

The Department had also approved 44 affiliate grower authorizations as of December 2018. We found that 16 (36 percent) were authorized to grow beyond the expiration date of the main grower's authorization, despite an agreement with the Department that affiliate authorizations expire with that of the main grower. The Department also authorized one affiliate to participate

in the Program, despite being unable to locate an application in that affiliate's records.

Officials stated that, due to input from other divisions within the Department, the process for approving applications has evolved. Therefore, all risk factors currently used for reviewing applications may not have been in place when previous applications were approved.

Inspections

Of the 156 growers we reviewed, the Department inspected 89 (57 percent). Additionally, while 6 of the 156 Program participants (4 percent) reported they were inactive, the Department did not verify they were not growing. The Department did not inspect the remaining 61 (39 percent), meaning it did not review their research plans in action to ensure they were within the scope of what was approved on the applications. Without an inspection, the Department also cannot easily review other important aspects of the planting process relevant to research, such as the seed information (e.g., origin, variety), plot size, and location (i.e., indoor/outdoor).

We could not always determine from the Department's records whether planting occurred or not, as the Department did not maintain this information. Additionally, the Department did not always follow up to make this determination. Officials stated that they contacted the grower in some instances, but did not receive a response. In those cases, no follow-up was conducted to determine if industrial hemp was ever planted; therefore, they also did not conduct an inspection.

We reviewed the Department's inspection reports and found 7 participants reported that they did not plant or grow. The remaining 143 (156 less the 6 inactive and the above 7) should have submitted a Harvest Report. However, of those 143, only 101 (71 percent) submitted Harvest Reports in 2018 indicating when they intended to harvest their crops – 7 of the 101 indicated they did not plant or harvest. For the remaining 42 (29 percent) who did not submit a Harvest Report, we could not determine from the source documentation whether they grew or not. Had the Department accurately and completely recorded this information in the electronic spreadsheets it uses to track inspection and Harvest Report information, a simple analysis would have detected the missing Harvest Reports. Consequently, the Department likely does not have all the information it needs to effectively monitor who was harvesting plants each season and to schedule visits to sample plants.

Sampling

Based on inspection and Harvest Report information, 136 growers should have been sampled (see following table).

Growers for Sampling

Growers as of December 2018	156
Reported as inactive	(6)
Reported they were not growing	(14)
Total assumed active, growing	136

Sampling provides assurance that harvested industrial hemp contains less than 0.3 percent THC, as required by State and federal law. However, the Department's incomplete hard copy files and tracking spreadsheets made it difficult to assess whether the Department sampled all high-risk growers, specifically those harvesting hemp for CBD. For example, we could not always determine if samples were taken from the main grower or from an affiliate, because the samples were sometimes grouped together. Also, information on what type of hemp was planted was sometimes missing, making it difficult to tell who was growing industrial hemp for CBD versus other types of industrial hemp. Other additional risk factors Department officials stated they use to assess which growers to sample were also not always recorded on the electronic spreadsheets or documented in the files, making it difficult for the Department to perform a comprehensive risk assessment for sampling.

In 2018, the Department sampled 211 plants from 79 of the 136 growers (58 percent). From our review of hard copy documentation, we were able to identify 69 growers that planted and harvested industrial hemp for CBD. Of the 69 CBD growers, the Department did not sample plants for 21 (30 percent). Again, without complete and accurate information, the Department cannot perform an accurate risk assessment for sampling.

The Department has indicated that a lack of resources has affected its ability to inspect and sample. Division employees must split their time between the Program and other competing priorities. It is critical that the Department develop and consistently apply risk factors to be used in sampling and testing industrial hemp crops to help monitor the Program. Improved data and analysis of information could help the Department identify patterns and trends, such as growers that could be inspected or sampled less frequently without significant risk, and additional patterns or red flags that could aid in assessing risks related to inspection and



Industrial hemp plant sampled by Division inspectors

sampling activities. The results of such analyses, in conjunction with guidance from the Department, could help the Division allocate its limited resources to the areas that pose the highest risk, ultimately improving assurances that plants comply with the Law. Department officials stated they have taken steps to address these issues by creating a database to better capture and analyze data, which they've been using since June 2019.

Of the 211 samples tested, 5 contained over 0.3 percent THC. Of these 5, the Department considered only 1 sample, at .41 percent, as requiring disposal. For the other 4 samples, Department officials stated that the Division used its professional discretion.

Furthermore, the Department has only a draft policy for handling the disposal of non-compliant plants. According to the draft policy, when plants test above the acceptable THC threshold, the crops should be quarantined and resampled to verify the initial results. In addition, any other locations that were planted using the same seed source should be identified and scheduled for inspection and sampling. However, the Department did not follow this draft policy and did not resample the non-compliant hemp, any other plants from those sites, or any other sites using the same seed source.

We also found lengthy sample processing times. For the five samples that exceeded 0.3 percent THC, the average time to process a sample was 49.4 days, with 22 days as the shortest processing period and 72 days the longest. For all samples reviewed, the average time to process a sample was 30.6 days. Given these extended processing times, we question whether results for plants containing over 0.3 percent THC could be retested and plants could be disposed of before non-compliant hemp entered the industry supply chain.

Recommendations

1. Take steps to improve the usability, accuracy, and completeness of Program data, including implementing procedures for input, quality assurance, and utilization of information.
2. Implement procedures to incorporate periodic data analysis to:
 - Identify patterns, outliers, and/or areas of risk for industrial hemp testing;
 - Assist in allocating staff resources as effectively as possible; and
 - Monitor compliance with State, federal, and Department requirements and practices.

-
3. Develop, implement, and follow clear and consistent procedures for processing applications, conducting inspections, sampling, and disposing of non-compliant plants, including adherence to the State and federal limits of THC.

Audit Scope, Objective, and Methodology

The objective of our audit was to determine whether the Department is adequately administering the Program in accordance with federal and State requirements. The audit covered the period from April 1, 2016 through May 31, 2019.

To accomplish our objective, we became familiar with, and evaluated the adequacy of, the Department's internal controls as they relate to this performance audit. We reviewed relevant laws, regulations, and Department manuals. We also interviewed Department officials, examined Department records (i.e., applications, authorization agreements, Harvest Reports), analyzed Food Laboratory sampling data, and reviewed inspection and sampling documentation for all authorized growers as of December 2018 (156 total). We also conducted a site visit to observe a grower inspection.

We performed data reliability testing on two of the Department's data systems, which contained information pertinent to our audit objective. We reviewed an electronic spreadsheet containing the list of growers (and relevant associated information) and the Food Laboratory's sampling database, and found instances where the information on the list of grower databases was inaccurate and/or incomplete. We limited our reliance on the spreadsheet data to support our audit findings, using hard copy records wherever possible, and qualified the reliability of the data in the report when it was used. We found the Food Laboratory sampling database to be reliable for our audit purpose.

Statutory Requirements

Authority

The audit was performed pursuant to the State Comptroller's authority as set forth in Article V, Section 1 of the State Constitution and Article II, Section 8 of the State Finance Law.

We conducted our performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

In addition to being the State Auditor, the Comptroller performs certain other constitutionally and statutorily mandated duties as the chief fiscal officer of New York State. These include operating the State's accounting system; preparing the State's financial statements; and approving State contracts, refunds, and other payments. In addition, the Comptroller appoints members to certain boards, commissions, and public authorities, some of whom have minority voting rights. These duties may be considered management functions for purposes of evaluating organizational independence under generally accepted government auditing standards. In our opinion, these functions do not affect our ability to conduct independent audits of program performance.

Reporting Requirements

A draft copy of the report was provided to Department officials for their review and formal comment. Their comments were considered in preparing this final report and are attached in their entirety to the end of this report. The Department agreed with the audit recommendations and provided additional comments on the State and federal limits of THC.

Within 180 days after final release of this report, as required by Section 170 of the Executive Law, the Commissioner of the Department of Agriculture and Markets shall report to the Governor, the State Comptroller, and the leaders of the Legislature and fiscal committees, advising what steps were taken to implement the recommendations contained herein, and where recommendations were not implemented, the reasons why.

Agency Comments



ANDREW M. CUOMO
Governor

Agriculture and Markets

RICHARD A. BALL
Commissioner

October 31, 2019

Mr. Brian Reilly, Audit Director
Office of the State Comptroller
Division of State Government Accountability
110 State Street 11th Floor
Albany, New York 12236-0001

**New York State Department of Agriculture and Markets
Response to Draft Audit Report 2018-S-32 – Oversight of Industrial Hemp**

Dear Mr. Reilly:

The New York State Department of Agriculture and Markets (Department) has reviewed the Office of the New York State Comptroller's (OSC) findings titled "Oversight of Industrial Hemp" dated August 2019 and, by this letter, responds to OSC's findings and recommendations.

The Department's Division of Plant Industry's (Division) core responsibilities include working to maintain plant health and prevent the spread of plant pests and diseases. The Department also administers the Industrial Hemp Agricultural Research Pilot Program.

The Department appreciates the work of the State Comptroller's audit team that was conducted during the formation of the program. Although this federally authorized program will end in 2020, the Department will work to implement the recommendations offered prior to its termination and anticipates that the benefits from the implemented recommendations will carry over to the State's successor program, anticipated to begin in the last quarter of 2020.

Department responses to the State Comptroller's recommendations can be found below.

Recommendations:

- 1) Take steps to improve the usability, accuracy and completeness of Program data, including implementing procedures for input, quality assurance and utilization of information.**

The Department agrees with the recommendation. The Department has taken action to improve the usability, accuracy and completeness of Program data. As the report mentions, we have developed a database which helps the Division in administering and monitoring the program. This database maintains grower information including,

but not limited to, application information, whether a harvest report was submitted, and sampling information. The information in this database is used to track infractions and warning letters.

The database has built in safeguards including, but not limited to, protections on data fields, limited user access to specific fields, password access and standardized data formats. These increase the reliability and quality of data. Written procedures for the input, quality assurance and utilization of information are currently being developed.

2) Implement procedures and incorporate periodic data analysis to:

- **Identify patterns, outliers, and/or areas of risk for industrial hemp testing;**
- **Assist in allocating staff resources as effectively as possible; and**
- **Monitor compliance with State, federal and Department requirements and practices**

The Department agrees with the recommendation. The Division is developing written procedures to assist with analyzing data. In addition, a new risk assessment is being developed to assist with allocating staff resources, monitoring compliance with requirements and practices, and identifying patterns and outliers. Several database queries now help identify growers who are not submitting required information; these queries also help the Division develop statistics and performance metrics based on compiled information. Further, the database allows for multiple years of data to be stored and easily accessible.

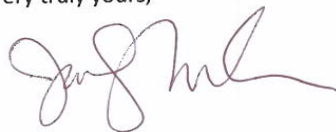
3) Develop, implement, and follow clear and consistent procedures for processing applications, conducting inspections, sampling, and disposing of non-compliant plants.

The Department agrees with OSC and the Division is continuously improving procedures to manage this evolving research program, including procedures for processing applications, conducting inspections, sampling and disposing of non-compliant plants.

Conclusion

The number of participants in this research program increased from 156 in December 2018 to 419 by July 2019. The program has been evolving since its inception due to the rapidly changing regulatory environment. The Department has continuously enhanced its policies, procedures and practices as the Department learns from the research of its partners and in response to changes made to state and federal law and will continue to do so in order to ensure effective oversight and monitoring.

Very truly yours,



Jen McCormick
First Deputy Commissioner

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