

The ILAC working group (formed during the April ILAC meeting) met with the NDA 4/19 at NDA office in Spark.

- The meeting was very productive.
- The group recognized that NDA has to follow NRS586.550, and
- NDA is the regulatory agency for pesticide use in marijuana industry.
- NDA will continue to use of color code on its list to “advise” MMEs be cautious of certain chemicals.
- Strongly recommend (require?) every Cultivation MME have certified applicator(s).
- NDA is willing to provide independent testing laboratories (ITLs) with the opportunity of feedback (through public comment) before bringing the “new” pesticide for an ILAC discussion and recommendation (to the Division).
- The NDA is willing to consider [assisting] the review (may be removal of certain compounds) on the Division monitoring list.
- To ensure the safety of consumers, a toxicologist review will be added to review processes.
- The “allowable” levels will be based on the review of those levels for Crop Group 19, as defined in 40 C.F.R. § 180.41(c)26, hops or unspecified crops or plant; and the input from the NDA Lab.
 - Some of the levels in the Division monitoring list should be reviewed for possible modifications (because they might be the results of the old “most stringent” levels.)
- NDA is in the process of update its decision flowchart (which will clarify the roles for each stakeholder.)

After the meeting, I have received several suggestions:

- Designate “open season” (once or twice per year) for ITLs to incorporate “new” analytes
 - It is difficult for ITLs in operation (especially if instruments were running near capacity) to insert method development into their schedules
- Toxicologist review on the Division pesticide monitoring list for any compounds that are potential carcinogenic or harmful to consumers
- Strongly recommend removing Captan and Daminozide from the Division monitoring list.
 - Captan is elusive because
 - it tends to cling to the analytical instrument column*; and
 - it is extremely unstable in basic (pH >7) environments (as in the *Cannabis*) thus decompose quickly in the plant.
 - Daminozide requires a separate extraction procedure (and different instrument run) from the rest of the analytes (critically impact the analytical capacity of ITLs)

*The reference (<https://www.ncbi.nlm.nih.gov/pubmed/15230533>) notes that “The GC analysis of N-trihalomethylthio pesticides itself is rather problematic because the degradation may occur both in the injection port and on the column.” It also notes that different lots of MeCN impacted the degradation rate of N-trihalomethylthio fungicides.

Background Information

The “pesticide list(s)” may appear to be a simple thing, however, the MME industry is often confused because there are coexisting regulations. MMEs operate under NRS453A and NAC453A, while there are more law/regulation they need to comply. The issue has a direct impact on the independent testing laboratories (ITLs). The focus of this review is the marijuana-related DPBH (Division) and Agriculture Department (NDA) law/regulation.

In NAC453A (as revised and adopted 8/29/2016), pesticides are mentioned in these sections:

453A.414.4(d)(6) A list of all chemical additives used in the cultivation, including, without limitation, nonorganic pesticides, herbicides and fertilizers. *[note: preoperational inspection.]*

453A.510.3 A medical marijuana dispensary must provide with all usable marijuana sold at retail accompanying material that discloses any pesticides applied to the marijuana plants and growing medium during production and processing and contains the following... *[note: information should be available.]*

453A.512.3 A medical marijuana dispensary must provide with all concentrated cannabis, edible marijuana products and marijuana-infused products sold at retail accompanying material that discloses any pesticides applied to the marijuana plants and growing medium during production of the marijuana used to create the extract added to the...*[note: information should be available.]*

453A.654.1 Each independent testing laboratory must use the general body of required quality assurance tests for usable marijuana, as received, concentrated cannabis, marijuana-infused products, and edible marijuana products set forth in this section. Such tests may include...microbial screening, pesticide and other chemical residue and metals screening... *[note: testing requirement.]*

453A.654.2 The test required pursuant to subsection 1 by an independent testing laboratory are as follows:... *[note: the table list pesticide residue analysis, herbicide screening, growth regulator screening are required for a. Usable marijuana, as received, excluding wet marijuana. and B. Wet marijuana, as received, which is destined for extraction.]*

453A.658.5. Except as otherwise provided in [NAC 453A.672](#), if a sample provided to an independent testing laboratory pursuant to this section does not pass the ~~microbial, mycotoxin, heavy metal, pesticide chemical residue or residual solvents levels test based on the standards of the Division~~ testing required by NAC453A.654... *[note: the only mention about pass/fail level standards was deleted for the adopted revision.]*

453A.668.2 The independent testing laboratory that receives a sample pursuant to subsection 1 shall, as directed by the Division: (a) Screen the sample for pesticides, chemical residues, herbicides, growth regulators and unsafe levels of metals... *[note: verification test directed by the Division.]*

453A672.8 A failed quality assurance test for pesticide residue must be retested by the State Department of Agriculture. *[note: this subsection addresses the Division-approved retest requests made by cultivation/production.]*

Based on the language in 453A, it is clear that Cultivation MMEs shall disclose any pesticide used to the Division, and this information needs to be provided to the consumers at the dispensary level. ITLs screen for pesticides, chemical residues, herbicides, growth regulators as directed by the Division. The pesticide information should be made to be available to ITLs, though not specifically mentioned in the regulation.

The original NAC453A.658.9:

The Independent Laboratory Advisory Committee established pursuant to NAC453.666 shall establish the list of pesticides approved for use in the cultivation and production of marijuana, edible marijuana products and marijuana-infused products to be sold or used in this State. For the purpose of the pesticide chemical residue test, a sample provided to an independent testing laboratory pursuant to this section shall be deemed to have passed if it satisfies the most stringent acceptable standard for an approved pesticide chemical residue in any feed item as set forth in Subpart C of 40 CFR Part 180.

However, in the adopted revision, this function of ILAC was deleted. Consequently, ITLs have no avenue to provide any input/feed back as to which pesticide to monitor nor at what level those pesticides shall be deemed as pass/fail. It is important to note that the revised and adopted NAC453A does not mention the monitoring levels, nor how should the levels be determined.

With that in mind, I reviewed the current NDA mandate.

NRS 586 Nevada Pesticides Act

PESTICIDES USED ON MEDICAL MARIJUANA

NRS 586.550 Requirements for use of certain pesticides by medical marijuana establishments; publication of list of approved pesticides for use on medical marijuana.

1. A medical marijuana establishment may use a pesticide in the cultivation and production of marijuana, edible marijuana products and marijuana-infused products if the pesticide:

(a) Is exempt from registration pursuant to 40 C.F.R. § 152.25 or allowed to be used on Crop Group 19, as defined in 40 C.F.R. § 180.41(c)26, hops or unspecified crops or plants;

(b) Has affixed a label which allows the pesticide to be used at the intended site of application; and

(c) Has affixed a label which allows the pesticide to be used on crops and plants intended for human consumption.

2. The State Department of Agriculture shall, in accordance with the provisions of this chapter, establish and publish a list of pesticides allowed to be used on medical marijuana pursuant to this section and accept requests from pesticide manufacturers and medical marijuana establishments, or a representative thereof, to add pesticides to the list.

3. As used in this section:

(a) "Edible marijuana products" has the meaning ascribed to it in [NRS 453A.101](#).

(b) "Marijuana" has the meaning ascribed to it in [NRS 453A.110](#).

(c) "Marijuana-infused products" has the meaning ascribed to it in [NRS 453A.112](#).

(d) "Medical marijuana establishment" has the meaning ascribed to it in [NRS 453A.116](#).

(Added to NRS by [2015, 3103](#))

NRS586.550 clearly requires NDA to respond to any pesticide usage requests from cultivation MME or manufacturer. If the requested pesticide fulfilled subsection 1, then the NDA has no choice but to allow such use for marijuana cultivation in this State, therefore the addition to the NDA approval list.

As for what level the pesticides should be deemed as "pass", the NRS586.550 does not specify that either. However, the general consensus is to couple the review of those levels for Crop Group 19, as defined in 40 C.F.R. § 180.41(c)26, hops or unspecified crops or plant; and the input from the NDA Lab. This approach is different from the original NAC453A's "most stringent" levels in 40CFR180.

Conclusions

After reviewing these applicable pesticide laws/regulations, it is abundantly clear that the NDA is the regulatory agency for pesticides use in Nevada marijuana industry. The Division, through its Policy MME018 (see below) designates a pesticide monitoring list and the detection levels.

MME018 Rev 3 Pesticide Use and Testing Effective 8/28/2015

1.0 POLICY

This policy supersedes the Division Policy MME0018 entitled, Pesticides Use and Testing, dated June 30, 2015. Pursuant to Senate Bill (SB) 447, signed by the Governor on June 10, 2015, a medical marijuana establishment (MME) shall only use a pesticide if

the pesticide has been approved by the Nevada Department of Agriculture (NDA) for use on medical marijuana. Independent Testing Laboratories must analyze for pesticides designated by the Division of Public and Behavioral Health (DPBH or Division) at detection levels specified by the Division. Further, at its discretion, the Division may require Independent Testing Laboratories to test for other substances including fungicides, herbicides, or growth regulators that are not identified above.

Path Forward

- Division and NDA check/verify, during inspections, the current use pesticides are consistent with the pre-operational pesticide list.
 - Non-compliance and/or fine if items are not on the submitted list?
 - Consequence for posses/use items neither in the submitted list nor the NDA approval list?
- Pesticides used at MMEs should be made available to ITLs.
- Mechanism for ITLs to provide input/feedback to the pesticide monitoring issue.
- The use of NDA flowchart

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