



Insight

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Asiatic Garden Beetle Study Looking at Biological Control

During a previous research project into the Asiatic garden beetle (AGB) in mint, Purdue University Specialty Crop Entomologist Elizabeth Long had the opportunity to apply insect-parasitic nematodes (IPNs) to mint fields as a sustainable strategy to combat the invasive pest.

"We saw that in those fields where we applied the insect-parasitic nematodes, they seemed to be persisting in the soil," Long said. "That was exciting, and enough for us to say, 'Okay, let's move forward and make more applications and see how this plays out over time.'"

The Asiatic garden beetle has been a significant issue in Midwest corn and soybean production systems since 2014 and was first discovered in a

mint field in Indiana in 2016. It has now become a major pest of mint in the Midwest. The beetle's larvae, or grubs, damage crops by feeding on roots.

"They are very aggressive, and voracious feeders, which is why they are such a significant pest," Long said. The pest also feeds on multiple crops.

Long has now launched two new projects focusing on the use of insect-parasitic nematodes (IPNs) as a biological control strategy for the AGB: one evaluating the persistence and efficacy of insect-parasitic nematodes against AGB larvae in different soil types; and one looking at the effects of different crop rotations on the persistence and efficacy of IPNs against soil-insect pests, including the AGB larvae.

In the first project, funded for two years through the USDA's Crop Protection and Pest Management program, Long and her team are comparing mint productivity and AGB larvae densities

in IPN-treated and untreated areas of three mint fields with different soil types.

Two species of insect-parasitic nematodes

Heteroabditus bacteriophora and *Steinernema feltiae* were applied to thirty acres of each mint field postharvest.

Long's team will sample the soil in IPN-treated and untreated areas of each mint field four times a year for the two-year duration of the project, looking at the relationship between IPN treatment, AGB larval density and mint productivity.

"Ideally, what we would hope to see is where we apply the nematodes, there are fewer (AGB) larvae over time and the



Elizabeth Long



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above-ground biomass is higher because there are fewer grubs feeding because they're killed by the insect-parasitic nematodes," Long said.

The project will also include greenhouse studies into each IPN species' persistence and efficacy against the AGB grubs in different soil types.

In the second project, funded by a three-year North Center Region Sustainable Agriculture Research and Education grant, Long's team will be measuring the effects of different crop rotations on the persistence and efficacy of insect-parasitic nematodes. And researchers will again be looking at the effects of different soil types on beetle grub densities during the rotations.

The study involves looking at three

commercial fields: one in continuous corn, one in continuous mint and one rotated between mint, corn and soybeans over a three-year period.

"We will apply IPNs and track how soil insect pests, including AGB larvae, look in those fields, document the soil types in those fields and we'll measure things like soil moisture and soil temperature repeatedly throughout the season to get as much data as we can," Long said.

The project also involves replicated blocks of the same crop rotations at Pinney Purdue Agricultural Center in Wanatah, Indiana.

Insecticide options for AGB larvae in mint are limited, but Long has found that the diamide insecticide Coragen reduces larval feeding.

"The work we've done in the greenhouse with drenches of this product shows that it doesn't necessarily kill the grubs, but it makes them so sick that they can't crawl, they can't roll over and they can't feed," Long said. At that point, they are very susceptible to the insect-parasitic nematodes, she said. "So these chemical and biological control strategies are complementary and could work together to help mint farmers tackle these aggressive beetle larvae," she said.

Funding for the two projects includes a \$200,000 grant for the first project and \$243,000 for the crop rotation project.

"I'm excited, because whatever we find I think will be directly applicable to these cropping systems," Long said. 🌱

Crop Safety Focus of Post-Harvest Herbicide Trials in Indiana Mint

Research analyzing peppermint tolerance to herbicides applied post-harvest in Indiana mint fields is showing little crop injury in high organic matter, or muck, soils. In mineral soils, however, that is not always the case.

Of seven herbicides tested in preemergence applications, only Zidua, Dual Magnum and Spartan were safe on the crop in mineral soils, showing crop injury of around twelve percent ten weeks after treatment. Fierce, Chateau, Tenacity and Optogen all inflicted significant crop injury on the mineral soils of between forty and seventy-eight percent ten weeks after treatment.

On the muck soils, meanwhile, only Chateau caused significant crop injury to the peppermint in the preemergence applications, causing more than thirty percent crop injury one week after

treatment. Others tested, including Zidua, Dual Magnum, Spartan, Fierce, Tenacity and Optogen inflicted less than fifteen percent crop injury one week after application. By ten weeks, crop injury on the high-organic matter, or muck soils, for all products tested, including Chateau, was less than ten percent.

Lead scientist on the experiment, Stephen Meyers, a weed scientist in the Department of Horticulture and Landscape Architecture at Purdue University, said he used the post-harvest timing because that can be a key opportunity to control weeds, given that they can start to emerge after the crop canopy has been cut. Also, he said, research in Japan has shown that it is critical that mint remains weed-free between fifteen to forty-five days post-cutting.

"Our idea was to try to look for herbicides that are safe to the peppermint and provide weed control in that period after harvest when the mint is susceptible to weed interference," Meyers said.

The soil texture, loam and sandy loam, was similar in the two locations tested. The big difference was the organic matter between the two locations, with the North Judson location having forty-nine percent organic matter, and the Fair Oaks location having just four percent organic matter.



Stephen Meyers

Meyers' team also applied postemergence applications, in this case, going in about two weeks after cutting. "The idea behind the 'postemergence' treatments was to provide control of weeds that emerge after harvest," Meyers said.

In the postemergence applications, several herbicides proved injurious to mint, including Reviton, Sharpen, Aim and, when mixed with Optogen and Tenacity, Tough. Tough by itself, however, was safe on mint in postemergence application window, as was Tough plus Basagran, and Basagran by itself. Products with variable crop response, depending on the site, were Chateau EZ, Fierce, Tenacity, Anthem Flex, Optogen and Aim EC.

Zidua, Dual Magnum and Spartan were safe on the crop when applied at the postemergence timing.

Meyers said he chose to apply products that are labeled in mint in Indiana or are good candidates to be labeled. Zidua, for example, although it is not currently labeled in the Midwest, is labeled in mint in the Pacific Northwest for dormant use. "That means that some crop tolerance has been established and some residue data exists, which should offer a clearer path to registration," Meyers said.

In the case of Optogen, it too is not labeled in mint, but it is labeled in rosemary and wormwood. "So that seems like maybe there is a path to registration in other herb crops," he said. Meyers also liked that Optogen has a different mode of action than the industry standard, Spartan, which could be a benefit in terms of slowing the development of herbicide resistance in mint.

Chateau is currently labeled in mint for dormant applications, but not post-harvest, and Dual Magnum has no label in mint, although it does have a 24C



Weed infestations can reduce yield 40% to 80% (Weller et al. 1998).



Mint injury by herbicides.

special local needs label in Indiana for several specialty crops, again indicating it could have a path toward registration in mint.

Fierce, a premix of Zidua and Chateau, is also not labeled in mint, but is considered a good candidate for a

label because of the status of its premix partners.

Meyers is continuing the experiment this year with plans to take the crop to harvest. 🌿

Hafez Honored with University's First Presidential Endowed Chair

The University of Idaho College of Agricultural and Life Sciences (CALS) announced October 16 that it has raised more than \$3.2 million from stakeholders for an endowment honoring the career of nematologist Saad Hafez and supporting the hiring of another world-class nematologist.

The Saad Hafez Presidential Endowed Chair in Nematology was established thanks to donations from J.R. Simplot Company Foundation, Amalgamated Sugar Company, McCain Foods USA, the Idaho Potato Commission and the Nyssa-Nampa Sugarbeet Growers Association. The endowment is the university's first presidential endowed chair, a category recognizing endowments of at least \$3 million.

In an interview with the MIRC Newsletter, Hafez, who retired October 31 after forty-three years at the university, said he was honored to be recognized so profoundly. He noted that his colleagues in the scientific community have told him that he is the first among them to be recognized with a Presidential Endowed Chair. "I feel great about it," he said.



A pale cyst nematode. Saad Hafez, a professor of nematology at University of Idaho, was the first person to identify PCN in Idaho. U of I is naming an endowment in his honor.



Saad Hafez, professor of nematology at the University of Idaho, in the new nematology lab at the Idaho Center for Plant and Soil Health in Parma. The lab is named after Hafez.

The University has begun searching for a new nematologist, according to an October 16 press release, with hopes of attracting a global leader in the field to replace Hafez. Annual distribution from the endowment will be used at the discretion of the new faculty member for graduate student and research support.

"This is a significant milestone for our university," U of I President C. Scott Green said. "Establishing our first presidential endowed chair not only affirms our commitment to academic excellence but also strengthens our ability to attract and retain distinguished faculty members who are leaders in their fields. This endowment will serve as a catalyst for innovative agricultural research, enhanced learning opportunities and new partnerships that will benefit Idaho's agricultural industry and contribute to the field of nematology. It is a testament to the belief in our mission and the bright future ahead for our institution."

Hafez said he worked in multiple crops during his career, including notably mint, potatoes, onions, corn, beans, alfalfa, wheat and sugar beets. He said he hopes the new nematologist continues to dedicate a significant portion of his or her research to nematode management in mint. "It is a very important problem in mint," he said.

The creation of the endowed chair in combination with other faculty who

"We are strengthening our position as leaders in nematology, and the work we do through our center of excellence will have national and international applications for agriculture."

*Michael Parrella,
College of Agricultural and Life Sciences
University of Idaho*

study nematodes at the university positions the institution on the leading edge of nematode research.

“There are few colleges in the U.S. that can match our focus on nematodes, which are not easily understood and represent an important research frontier as we seek to help farmers improve soil

health, boost yields and become more sustainable in their operations,” said Michael Parrella, dean of the College of Agricultural and Life Sciences. “We are strengthening our position as leaders in nematology, and the work we do through our center of excellence will have national and international applications for agriculture.”

The new nematology position will be based at the Idaho Center for Plant and Soil Health, which opened last fall at the Parma Research and Extension Center. The state-of-the-art facility includes a dedicated nematology lab, which is also named in honor of Hafez. 🌱

MIRC Combines Committees: Carbon Sequestration Study Being Considered

The MIRC has rolled its Risk Mitigation and Sustainability committees into one committee, and among the new committee's first steps is to consider gathering data on carbon sequestration.

The newly formed Sustainability Committee has asked USDA-Agricultural Research Service soil scientist Jennifer Moore to put together a research proposal on collecting data on the carbon sequestration benefits found in mint production.

“At this point, we need a proof of concept on the carbon sequestration of mint because that work has never been done,” said John Williams, Chair of the Sustainability Committee. “And then once we are able to get that and incorporate it with data from the 2016 FieldRise study, then we would be able to generate a model that would allow farmers, dealers and end users to really understand the carbon footprint of mint.”

FieldRise, a national program that measures farm stewardship, assessed the mint industry in seven areas in the 2016 report, including in nutrient, water and energy management; pest management; land stewardship; continuous education and community involvement; business operations; worker safety and

environmental protection; and in carbon and water measurement.

The report showed the industry excelled in sustainability, and it provided data on the industry's exemplary use of scouting and integrated pest management to minimize pesticide usage, monitor soil conditions for irrigation efficiency and nutrient management, and how it works to protect pollinator health. But the industry didn't get information on carbon sequestration, which can be critical to providing a more complete picture of its carbon footprint.

“The FieldRise report estimated the greenhouse gas emissions of mint oil production from chemical application and distillation,” Williams said. “However, the carbon sequestration was not accounted for in the carbon footprint calculation.

“We have most of the puzzle put together, but now we need to find the missing piece,” he said.

Also, Williams said, the industry may eventually go back and update the CO2 emissions data. “A lot has changed since 2016,” Williams said. “There are different fuel sources, agricultural practices have changed.”

Data from Moore's research and the previous FieldRise study could be used

both to help the industry improve on its carbon sequestration and potentially for marketing purposes, Williams said.

“It's one thing if you are doing good work, but it doesn't make much of a difference to the larger picture if people aren't aware of it,” Williams said. “So, when we are able to collect this data and present it to people outside of the industry, it's a potential marketing tool for why North American mint is great and all the good things that we do that really let us shine in comparison both to other crops but also to competition abroad.”

The Sustainability Committee is looking at a variety of other issues as well, Williams said, some of which were previously being considered in the Risk Mitigation Committee, and some of which were considered in the previous version of the Sustainability Committee.

“The group of topics of interest has broadened slightly,” Williams said, “but the goals of the two committees were well aligned, and we are continuing to focus on the pragmatic approach to solving problems that face North American mint.”

Williams formerly served as Chair of the Risk Mitigation Committee. 🌱

Harpe Bioherbicide Targets End of 2025 for Product Release

MIRC member Harpe Bioherbicide Solutions is targeting the end of next year for the potential introduction of its formulations to the marketplace.

The development holds promise for mint growers: The company's bioherbicide formulations are derived from compounds found in plant extracts, including many found in mint.

Several developments will need to happen for the company's formulations to be in the marketplace by the end of the 2025, including that Harpe finalizes a collaborative agreement with a partner company in the agricultural space to bring its technology to the marketplace. But, according to Daniel Pepitone, co-founder, COO and director of the company, the developments are lining up well.

"We've made some good advancements on the formulations, and some of our partners are testing those specific products," Pepitone said.



Daniel Pepitone

Pepitone said the company's partners are "leaders in various categories, whether it's the home and garden markets, aquatics, as well as conventional and organic agriculture.

"We are talking to the right companies," he said.

The formulations have been determined by the EPA to be a minimum risk pesticide and as such, first targeted products are exempt from registration and other requirements of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), which governs the

registration, distribution, sale and use of pesticides in the United States.

Pepitone said the company has spent the past year refining and improving the formulations.

"It's only gotten better in terms of the efficacy as we advance the formulations," he said. "That has been the exercise for the last year-plus, improving those formulations to become more consistent so that it works every single time at the rates we want it to."

Pepitone believes the market potential for a bioherbicide is considerable, both in the home and garden sector, where soft chemistries that are safe for children and pets are desired, and in the agricultural marketplace, where it could find a fit in organic crop production, as well as in conventional agriculture, particularly where herbicide resistance is an issue.

The company anticipates its first release to be in the home and garden sector or the organic agricultural market, which are the two areas with the greatest need for new bioherbicide innovation, according to Pepitone.

Its formulations have been tested for several years in multiple sites around the world, Pepitone said, and they are effective against a broad range of grass and broadleaf weeds. The formulations also are designed for multiple uses, including burndown, preemergence and desiccation applications.

The formulations attack weeds at several sites, according to company literature, and incorporate several modes of action, among them one that weakens a weed's capacity to hold water, causing weeds to wilt and disrupting the membranes of plant cells in a way that impacts photosynthesis.

The formulations were developed by company co-founder Dr. Chad Brommer and utilize mint as their lead plant extract, Pepitone said.

"The opportunity for mint is quite large, both on the natural side as well as on the synthetic side," he said. "We're talking about 20,000-plus metric tons per year of mint oil, those kinds of numbers. And if you look ten years out, that number could double or even triple."

Pepitone said it is less expensive to purchase synthetic mint oil, but not overly so. "It is not to the point where it is an encumbrance, and certain market segments will only want to utilize the natural oils," he said.

Pepitone said the company joined the MIRC both to inform the mint industry of its needs and to better understand the workings of the industry.

"Being part of the MIRC helps us tremendously," he said. "It is important to understand the industry and to share information with growers, with the industry so there are no surprises. We don't want to show up one day and say, 'Hey, we need all this mint.' We're looking to make sure the market is fully engaged in understanding what we're working on.

"It is a wonderful exchange," he added of his experiences in the MIRC. "The people are awesome to work with and it is a great opportunity for us to get in front of the right groups and have those conversations." 🌿



EPA Continues to Roll Out Pesticide Mitigation Measures

Steve Salisbury, research and regulatory coordinator for the MIRC, has learned that pesticide applicators will need to follow application instructions and mitigation measures found in Bulletins Live! Two for not just herbicides, a plan the agency initially aired, but for all pesticides going forward.

“What we’re being told is that it will apply to every pesticide application made in the country,” Salisbury said.

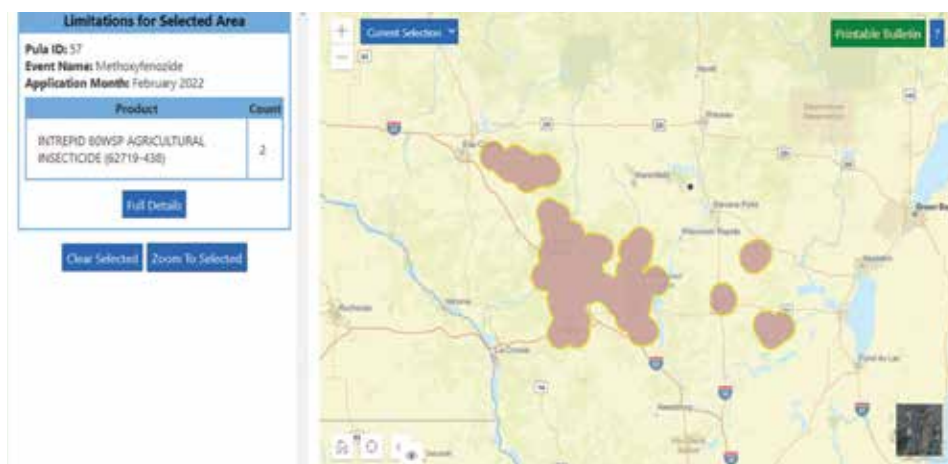
Salisbury said there were hints going back several months that the agency planned to expand Bulletins Live! Two beyond herbicides as the agency continued to roll out more pesticide strategies.

“A year or so ago, the message was we all better be paying attention to the herbicide strategy, because the roll out of that strategy was going to dictate how everything else was implemented,” he said.

The system, which will be implemented on labels as pesticides are registered or reregistered, is designed to protect threatened and endangered species from pesticides. It is part of a settlement to a lawsuit that challenged how the EPA was protecting endangered species when registering pesticides.

Mitigation measures called for in Bulletins Live! Two are determined in large part by whether an endangered species is known to inhabit an area, or in some cases whether there is sufficient habitat for the likelihood of endangered species to be in an area, such as whether there are fish-bearing streams in an area. The EPA has designated these sensitive areas as PULAs, or pesticide use limitation areas.

“If you are making an application in a PULA, you have to go to the EPA’s



Example of pesticide use limitation areas (PULA) on EPA's Bulletins Live! Two website.

Bulletins Live! Two website, then you have to enter what you are trying to apply and print off any applicable bulletins, which is the legal document that tells you what mitigations you need to implement in order to make that application,” Salisbury said.

Salisbury said EPA has closed the public comment period for its insecticide strategy but is still open to taking comments on its proposed mitigation measures regarding pesticide runoff and drift. He added that the agency has stated it is interested in farmer input.

“They’re looking to incorporate several mitigation measures and some may not even be applicable,” Salisbury said. “So, if the growers have better ideas, the EPA has indicated they at least will take them under consideration.”

In another development, the EPA backed down from a proposal to dramatically limit all pesticide use in the Willamette Valley when it removed the Taylor’s checkerspot butterfly from a species of concern in its Vulnerable Species Pilot Project.

“I don’t know what the basis was for removing it, but they removed it,” Salisbury said.

The agency received several hundred comments from the agricultural industry opposing the proposal to protect the butterfly, arguing that its plan was a dramatic overreach, given the butterfly’s known area of habitat is less than twenty acres just south of Corvallis, Oregon.

Salisbury noted, however, that the agency has added other species to its Vulnerable Species Pilot Project and has refined PULA boundaries.

The idea of the Vulnerable Species Pilot Project is for the EPA to study how the mitigation measures it is putting in place in the PULAs are impacting the vulnerable species, he said.

“If a vulnerable species has been identified in a PULA that you’re planning to apply a pesticide in, that doesn’t mean you can’t spray,” Salisbury said.

“From my understanding, it is a way for the agency to evaluate the system on a broad-brush scale,” Salisbury said. “Rather than looking at every individual species for every individual chemical that could be put out there, they’re picking a few representative species and analyzing how they are affected by whatever chemicals might be going out on the ground.” 🌿

Mint Industry Research Council



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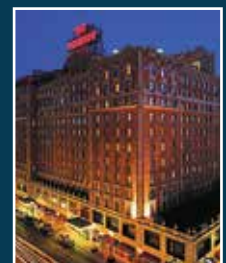
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Chairman's Report

Jeff Johnson, Chairman of the Board

I'd like to start my report this time with an acknowledgement to both Eric Dowd, who is no longer Chair of the Scientific Affairs Committee (SAC), and to Greg Biza, who has graciously agreed to take over the position.

I want to thank Eric for his contributions to the MIRC, including the many years he served as Chair of the SAC. We appreciate his work and wish him the best in his future endeavors. And I look forward to working with Greg at the next SAC meeting in January.

As for the North American mint market, we continue to see positive developments, including continued moderate growth on the consumer side, a trend dating back now to the end of the pandemic, and we are seeing the North American mint oil market tightening of late.

Also, it was good to see that despite some glitches, harvest went well. There were no significant issues with water shortages and growers were able to bring in a good average crop in terms of yields.

As for the glitches, we did have an interesting year in that it got warm very early, and then because of some late rains, harvest got stretched out later than is typical. Also, Idaho did have an extended period where smoke from wildfires was very intense and that did affect the oil in some different ways.

But other than that, it seems to be a good year for the North American mint crop.

Finally, as this is my last column as Chair, I would like to thank all of my colleagues, as well as the Ostlund Group and Steve Salisbury for all the support

I've received during my run as Chairman of the MIRC. They have been amazing to work with and I've appreciated all the time I've spent with them over the past three years.

I know that the MIRC will now be in very capable hands with my successor A.J. Todd.

Thank you again everyone for your support over the past three years. 🌱



Jeff Johnson



Research & Regulatory Update

Steve Salisbury

This past September, the MIRC's Scientific Affairs Committee (SAC) held their mid-year meeting in Boise, Idaho. The mid-year meeting is always a productive time to review the progress of MIRC's research projects and prepare for next year's request for proposals. We thank Idaho for being host to our meeting and a big thank you to Callisons' Amanda Schmitt for taking the time to be our tour guide showing the group some of the Treasure Valley and the lifeblood irrigation canal system feeding Southwest Idaho's agriculture.

The meeting provided an opportunity to meet Drs. Armando Falcon-Brindis and Jennifer Moore, who both gave presentations. Dr. Falcon-Brindis is the new entomologist with the University of Idaho based at the Parma Research & Extension Center. We look forward to the possibility of working with him on insect management research. Dr. Moore is a soil scientist with the USDA-ARS based in Corvallis, Oregon. She presented

a research concept to the SAC members on how the mint industry could pursue knowledge about the dynamic carbon cycle of mint production.

There is not much information available on the carbon balance of mint production. The most recent effort that the MIRC has made on this was included as part of the 2016 FieldRise project. This was the project funded by the MIRC to conduct an industry stewardship assessment. From that assessment there was an estimate of carbon use in producing mint. What Dr. Moore was able to explain was that there is a lot that goes into completely describing the complex carbon dynamics and balance of a crop's cycle. When we consider the many aspects of carbon inputs, conservation, use and soil and plant dynamics, it seems that mint may very well have a positive and interesting story to tell, and there is interest in hearing that story. Perhaps Dr. Moore can present the MIRC with a compelling proposal to

begin unveiling pieces to our carbon puzzle.

Dr. Isabelle Henry from University of California-Davis was also present to provide an update on her genomics

and varietal improvement research. She continues to show progress and positive strides that continue to march along to improving mint. Yes, it's a long journey and I do not have to remind this group of that. But, the MIRC sees the value and potential for achieving improved mint through these efforts. She will provide a full report on the project at the annual meeting in January.

On the pesticide front there are some notes worthy of mentioning. Some good and some maybe not so good. The



Steve Salisbury

Steve Salisbury Recently Featured as a Guest on FieldLink Podcast

Steve Salisbury was recently featured as a guest on Episode 74 of the FieldLink Podcast hosted by Bill Smith from Helena Agri-Enterprises. It can be found by searching FieldLink in any podcast app or on YouTube. Visit tinyurl.com/5fd32tt9 to listen to the interview.

Scan to listen to
Steve's interview



EPA continues to issue their strategies and affiliated projects and programs to address the endangered species assessment situation. The herbicide strategy was officially published in late August 2024. A proposed interim decision on the insecticide strategy was released and open for public comment in late September and is expected to be finalized in March 2025. The rodenticide strategy is expected to be finalized and announced in November 2024. Also this past September the EPA published an update on their Vulnerable Species Plan, which to our liking removed many of the species of focus and provided refinement of the pesticide use limitation area boundaries.

In early August 2024, the EPA announced an emergency order of suspension of the use and sale of dacthal. The agency cited human health concerns associated with the herbicide. On October 22 dacthal was officially cancelled for all uses in the US.

Back in April the EPA announced its proposed interim decision to eliminate the use of acephate insecticide. Acephate is an organophosphate, an entire class

of insecticides which is under review. It seems that the pending loss of acephate to mint production would be minimal. While we do not want to lose tools from an already thin insecticide toolbox, it is apparent that mint does have some viable registered alternatives available. Several growers expressed to me that ever since chlorantraniliprole (Coragen) became available to mint they stopped using acephate. That said, the MIRC did submit comments to the EPA regarding the proposed loss of the insecticide. The EPA has not published their final decision yet.

As for the ongoing review of the organophosphates, there are 18 actives being reviewed. The EPA is tentatively expected to complete the review by 2027. In the meantime, no new uses of the OPs are being allowed. Eventually, the outcomes of this review could impact mint. Mint currently has three OPs labeled for use. They are malathion, ethoprop (Mocap) and acephate. We do expect acephate to be cancelled, which will leave mint with two. It is important that we keep track of the pending decision of the EPA on this topic. It

is also important that we continue to pursue new insecticide options for crop protection.

Lastly, I'm happy to report that FMC has provided a supplemental label for Anthem Flex herbicide use on mint. Anthem Flex is a prepack of pyroxasulfone and carfentrazone. The label is for use on dormant mint and will provide excellent pre-emergent control of weeds as well as post-emergent control of broadleaf weeds. We are also expecting another exciting new herbicide label this winter as well as a label revision that we've been looking forward to. I hope to be able to announce these at the winter meetings.

I look forward to seeing you all at the state winter meetings, and certainly hope to see you all at the annual MIRC meeting in January. We have a fantastic meeting program assembled with some great speakers that you will enjoy hearing from. Please don't hesitate to contact me if you have any questions, comments or concerns. I'm always happy to take your input on the MIRC and what we are or what we need to be doing. 🌱





Mint Industry Research Council

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