



Insight

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EPA's 'Megasuit' Settlement Poses Threat to Sustainable Mint Production

Agricultural organizations are urging the EPA to scale back proposed restrictions on pesticide use, saying they threaten a farm's ability to produce crops in any sort of sustainable manner.

The proposals are within an EPA workplan it devised as part of a settlement to a 2011 suit brought by the Center for Biological Diversity that accused the EPA of violating the Endangered Species Act when it registered or reevaluated pesticides. The lawsuit, dubbed the "Megasuit," initially targeted 382 pesticide active ingredients, a number that was later reduced to 35 active ingredients covering more than 1,000 pesticide products.

In the settlement, which was approved by a district judge in San Francisco in 2022, the EPA proposed taking a multispecies, multichemical approach to meet its Endangered Species Act obligations when registering pesticides.

Currently, EPA reviews each pesticide separately under the Federal Insecticide, Fungicide and Rodenticide Act when registering pesticides.

Pilot Project

The agency's proposal is expected to dramatically affect farm production in

the U.S. A part of its first proposal, for example, includes the establishment of a Vulnerable Species Pilot Project that calls for an essential ban on pesticide use in certain areas, including nearly one million acres in Oregon's Willamette Valley, in this case to protect the

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Taylor's checkerspot butterfly, one of 27 protected species nationwide for which the EPA is addressing in the Pilot. The Taylor checkerspot butterfly's known area of habitat in the valley, meanwhile, is less than 20 acres.

The proposal drew heated opposition, and the agency has since said it will scale back the scope of the protected areas and add revisions to mitigations that address the needs of specialty crops. EPA said to expect additional updates on the Vulnerable Species Pilot Project by fall of 2024.

Rodenticides

Also of concern to agricultural organizations within the Megasuit are proposed changes to rodenticide labels. These include cancellations for diphacinone and chlorophacinone and rigorous mitigation measures on zinc phosphide, including that an applicator wear a respirator and chemical-resistant gloves during an application. The mitigation measures also include a requirement that a farm conducts a carcass search over an application area every other day beginning four days after an application and continues to do so for at least two weeks. In testimony,

Steve Salisbury, research and regulatory coordinator for the MIRC, said the effects of the proposed changes "would be devastating" and the proposed mitigation measures are essentially unworkable.

As with the Pilot Project, the rodenticide proposal drew objections from thousands in public comments and from multiple congressional representatives, including Lori Chavez-DeRemer, R-Oregon. Chavez-DeRemer along with 29 other members of Congress wrote in a letter to EPA Administrator Michael Regan that the proposed changes "will result in crop damage, livestock loss, jeopardize the safety of the food supply, weaken public health protections and make it more difficult for people to protect their homes and property from rodents."

Herbicides

A third issue that is coming down the pike are changes to herbicide labels. According to EPA's timelines, the agency is expected to finalize a new Herbicide Strategy Framework sometime in 2024. To date, mitigations proposed for herbicide use are in the form of a menu of actions from which growers can

choose, such as planting windrows of specific height to protect against spray drift, runoff and erosion.

In most cases, EPA's proposal calls for mitigation measures on the use of herbicides and other pesticides to be implemented label by label when products are registered or reregistered.

New labels are also expected to include a requirement that applicators input data into EPA's Bulletins Live Two (BLT) system before applying a pesticide. BLT is an online portal that will include information on pesticide mitigation measures in specific areas. The system will require an applicator to identify the area of application and refer to the bulletin to see if he or she will need to incorporate mitigation measures to apply a pesticide in that area. This too is expected to be implemented as each product is registered or reregistered.

Ultimately, Salisbury said it remains to be seen exactly what mitigation measures the EPA will impose on pesticide use as it rolls out its workplan. But at a minimum, he said, mint farmers can expect to change the way they use certain pesticides in the future. 🌿



Grower Panel a Highlight of Annual Meeting

The second-ever grower panel on improving sustainability in production operations was a highlight of the MIRC 2024 Annual Meeting, held this past January in San Diego.

Panelist presentations were beneficial in providing end users insight into what growers are doing to increase efficiencies and in providing growers a look at what some of their colleagues are doing to meet sustainability goals, according to Steve Salisbury, research and regulatory coordinator for the MIRC, who served as moderator.

And, Salisbury said, what came out of it was some very practical information.

“Some of it was a little exploratory, but a lot of what came out of it was very practical information on projects that could be incorporated on farms across the country,” Salisbury said. “And even the exploratory stuff was interesting and left people pondering that it could apply to their operation in the future.”

Panelists were Doug Matthys of Shady Lane Farms in South Bend, Indiana, Dale Thacker of Bow Island, Alberta, Canada, and Gabrielle Whitaker and Dina Jensen of J3 Farms in Jefferson, Oregon.

The panelists provided attendees information on how incorporating a new condenser into a distillation operation was improving distillation efficiencies. They talked about using drones for applying fertilizers and pesticides, and how it is providing benefits in application efficiencies. And Matthys talked about how the addition of solar panel arrays was providing substantial cost savings on his farm’s power bill.

“He did a really good job of laying out in detail the cost analysis of the project,” Salisbury said. “We all understand that it is an investment and it’s not everybody’s cup of tea, but he showed that it is pretty beneficial for them and gave a good look



Steve Salisbury leads a grower panel featuring Doug Matthys, Dina Jensen, Gabrielle Whitaker and Dale Thacker.

at the practicality of incorporating solar on your farm.”

The panelists presentations were very well received by attendees, Salisbury said. “I would definitely say it was one of the highlights of the meeting,” he said. “I received a lot of positive comments from growers saying how much they appreciated hearing what other growers are doing. And I got a lot of positive feedback from end users. They really appreciate having that kind of direct communication with growers in a way that they can see and hear what growers are doing, what challenges they face and how they are trying to address them.

“I think a lot of times, it is easy for the end user to be a couple of steps removed from the grower and not completely understand the challenges growers are facing and what kind of creativity and ingenuity is going on at the grower level to address those issues. I think it’s very good for the entire value chain to really understand what is going on,” Salisbury said.

The MIRC held a similar panel in 2020 in Scottsdale, Arizona, Salisbury said, and it too was well received.

“I received a lot of positive feedback from it and that led me to want to do it again,”

Salisbury said. “And I’ve got to say, after the feedback I received this year, I think we will probably want to put another one together at some point in the future. Maybe it’s not an every-year agenda item, but I think it needs to be in the rotation.”

Bryan Ostlund, administrator of the MIRC agreed: “I think it’s important that we as an organization are supporting the efforts of our industry to embrace sustainability, whether it is support through Mars Wrigley’s AdvanceMint program, industry surveys of where our North American mint producers are at in terms of adopting sustainable production practices or hosting sustainability panels at our Annual Meeting.

“I think its important to encourage mint growers to look at opportunities that are available to enhance their sustainability, whether it is through solar panel installation or improved irrigation practices,” Ostlund added. “Just to stimulate that kind of thought of how we as a mint industry can do things better, more efficiently with less impact on the environment is something that I think we as an industry organization need to be a part of.” 🌱

Idaho Innovators

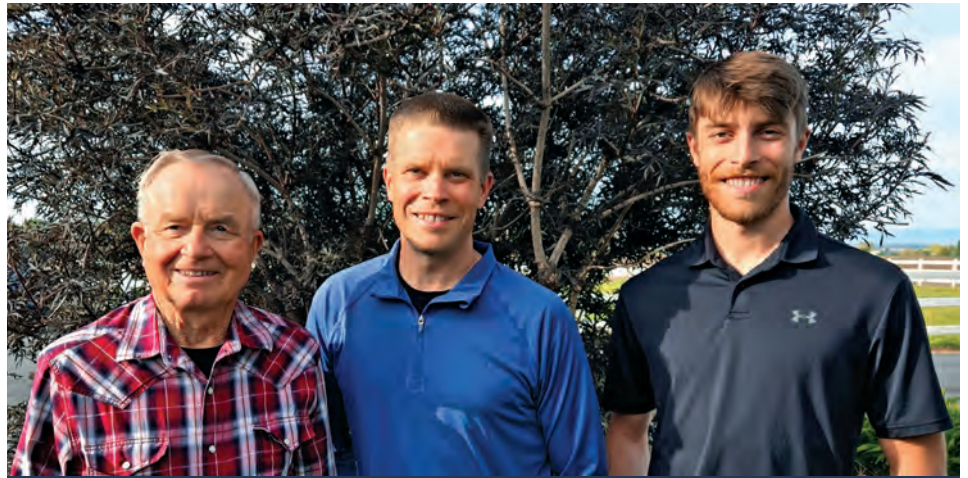
The North American mint industry is home to many growers who have adopted innovative strategies to maintain operations in the light of increased production costs and at times lower payouts. In this issue of the MIRC Newsletter, we'd like to highlight two such growers from Idaho.

Greenleaf Farms

Based near Boise, Greenleaf Farms was one of the first in Idaho to grow mint. "They were instrumental in bringing mint into the Treasure Valley from the Willamette Valley," said Dan Dixon, who purchased the farm in the 1990s after working on it since the mid-1970s.

One of the keys to the farm's longevity in mint comes down to maintaining good soil health through crop rotation, according to Dan's son Dave, who now manages the farm. The farm rotates mint with sugar beets, onions, wheat and corn.

"We will try to raise a couple of rotations of wheat and corn between our cash crops, the mint, onions and sugar beets," Dave



Three generations of the Dixon family are currently working on Greenleaf Farms: From left are Dan Dixon, Dave Dixon and Daniel Dixon.

said. "We feel it is important to give the ground a rest, plus it helps build up organic matter, which we feel is important."

The farm's fertility program is based on maintaining adequate nutrient levels in the soil, but avoiding over-application. "We never overload the soil with something that it can't process," Dave said.

This approach has enabled the farm to grow mint on the same ground for many years, Dave said, but the farm is always looking for new ground, as well as new chemistries and other means of staying ahead of *Verticillium* wilt.

The farm has tried semi-permanent drip irrigation in the past and is looking to potentially do so in the future. Its previous experience involved using it on two fields beginning in 2012, including for six years in one stand.

"We were one of the early adopters of drip irrigation," Dave said, "and we like many aspects of it. We use it on 100 percent of our onions, and there certainly are benefits in mint, including the water savings and being able to spoon-feed nutrients into the plant on a consistent basis.

"But I think we need to better understand how to remove the tape at the end of a cycle," Dave said. "Removing the tape was extremely difficult."

Among ideas he is considering for the future is installing the drip tape on a wider spacing than the 22-inch spacing the farm used the last time through.



Stretching out the distance between the lines could make the removal process more manageable. “But,” he said, “I don’t think it’s known right now how far you can stretch out the distance between your drip lines.”

“It is always in the back of our minds to try it again,” Dave said.

Dave Christensen Farms

Like Greenleaf Farms, Dave Christensen Farms is one of the pioneers of mint production in Idaho. The farm started growing mint in the 1960s when Charles Tharrington, grandfather to the farm’s current manager, Clay Christensen, saw the crop as a burgeoning opportunity in agriculture.

“We had a neighbor that had grown it and like most farmers, my dad (Dave Christensen) and my grandpa decided if someone else is having good luck with it, then we could too, and we’ve never looked back,” said Clay.

The farm has incorporated several innovative practices into its mint production system over the years, Clay said, including adding a deep-buried drip irrigation system on close to 100 acres.

“We got one of the AdvanceMint grants a couple of years back and that helped with some of the costs of putting that in,” Clay said.

The system has helped the farm maintain profitable mint production, particularly on some of the farm’s more marginal ground.

“We have some really sandy ground that if you had wheel lines on that, it wouldn’t grow a very good crop, and so the drip has been really good,” Clay said. “Plus we are able to cut down on some

of our water use and we are able to just feed the plant through the drip system directly into the root zone.”

The farm also has tried a hybrid irrigation system, where it drags irrigation lines over mint with a center pivot.

“Our first preference, honestly, is gravity irrigation,” Clay said. “We grow our peppermint under that. It keeps the ground really nice and wet, plus you’re not washing any of the oil off of the leaves like a sprinkler does. So dragging the irrigation lines on top of the ground is kind of a good hybrid of the two systems.

“It’s in our best interest both long-term and short-term financially to make everything run just as efficiently and smoothly as possible. Costs are rising in everything in the world, but especially in farming, with power, gas, fuel, labor, I mean, just across the board.”

Clay Christensen,
Dave Christensen Farms

“You aren’t washing anything away like a sprinkler,” he said. “Those lines would just drag and essentially drip the water straight into the ground underneath the canopy of the mint plant. And we saw really good results with that. It yielded more like a gravity irrigated field versus how most pivots do.”

The farm plans to continue using the hybrid system on some of its mint

acreage, despite the expense and work involved in the system. “It is kind of expensive, just because of the materials and the filtering you need to do so that you aren’t plugging those lines. You have to make sure you’re getting clean water, and you have to filter it more than just a typical pivot would need.”

The farm decided 25 or so years ago to switch its boiler system to natural gas, which is cheaper than diesel and far cleaner, Clay said, and which also has helped sustain its mint production. A few years back, the farm installed an Economizer to its boiler, which preheats water using a heat exchanger, dramatically reducing the energy needed to boil water.

“Our heat exchanger brings the water from 65 degrees to 145 degrees. Then the Economizer takes the 145-degree water to 215 degrees, so it goes into the boiler already at a boiling point to create steam. And this is all done by using water that we’ve reclaimed from our mint still,” Clay said.

“It’s in our best interest both long-term and short-term financially to make everything run just as efficiently and smoothly as possible,” Clay said. “Costs are rising in everything in the world, but especially in farming, with power, gas, fuel, labor, I mean, just across the board. So, we have to be as economical and as sustainable as possible, or else you just can afford to farm.” 🌱



Clay Christensen

Labbeemint Disbands, Leaving Behind Impressive Legacy

The U.S. mint industry is saying goodbye to a longtime partner and industry leader as Dan Labbee has announced he is leaving the industry and disbanding his company, the Harrah, Washington, based Labbeemint, Inc.

“This has been a difficult decision,” Labbee wrote in an email to growers in early January. But, he said that he believed “now is the time for us to depart.”

In a tribute to Labbee, Shane Johnson, executive director of the Washington Mint Growers Association, said that together with his brothers and some very dedicated and loyal employees Dan Labbee built Labbeemint into a successful player in the global mint industry, recognized for its competence, integrity and leadership over the past fifty years.

The Labbee story in mint dates back to 1947, when Dan’s father, Jack Labbee, started growing mint on the family farm in the Yakima Valley.

Jack Labbee, recognized as one of the first farmers to grow mint in Washington, grew the farm until at one point it was recognized as the largest mint farm in the U.S. Labbeemint incorporated in 1971 and over the next twenty years, marketing American mint oils became the company’s primary focus.

During that time, according to Johnson’s tribute, the Labbee family was successful in marketing their mint oil directly to end users, such as Mars Wrigley and Warner Lambert. “Dan was tasked with building the sales department,” Johnson said, “which meant he traded irrigation boots for a business suit and headed off to New York, Europe and Japan to start knocking on doors.”



Dan Labbee accepting the MIRC Industry Appreciation Award from Board Chairman Jeff Johnson and Research and Regulatory Coordinator Steve Salisbury

Over the years, Labbeemint became known as a market leader in the supply of high-quality peppermint and spearmint oils to the flavor and fragrance industries, Johnson said. Dan eventually took over from his father to become the President of Labbeemint, a position he held until the company was disbanded. Dan also served as Chairman of the Board for many years.

Dan was a major contributor to industry organizations, serving for many years as a Board member of the Washington State Mint Growers Association and as a Board member of the Mint Industry Research Council.

Dan also has long been a leader outside of the mint industry, Johnson noted, serving on local church and school boards, and, with the help of his wife, Karen, helping organize community events and volunteering time for other

duties whenever they were called. “Dan attended countless sporting events at local schools, chaperoned Boy Scouts camping trips, shuttled friends and acquaintances around the Pacific Northwest in the Labbee family airplane,” Johnson said. “For many years, Dan and Karen’s home was full of teenagers every Sunday night from the Harrah Grace Brethren Church Youth Group.”

Dan and Karen have four children and today have nine grandchildren. “Dan gets to spend a little more leisure time these days chasing grandchildren, golfing and enjoying the beautiful Pacific Northwest,” Johnson noted.

We at the MIRC wish to thank Dan Labbee for his immense contributions to the mint industry and wish him the best in retirement.

Thank you, Dan Labbee. 🌿

MIRC Backs Second Sleep Study

The MIRC is backing a second study analyzing the effects of spearmint scent on sleep after an initial study showed sleep was improved when the scent was introduced.

In the initial experiment, study participants didn't sleep longer but they slept better after being exposed to spearmint scent in the sleep lab at Wheeling University in Wheeling, West Virginia, according to Dr. Bryan Raudenbush, a professor in the Department of Psychology and Physical Therapy at Wheeling University, who led the study and reported on it at the MIRC Annual Meeting in January.



Bryan Raudenbush

In the study, participants were exposed to four different scents, an American spearmint, a spearmint from India, as well as jasmine and lavender. A control group had no scent added.

Between the American spearmint and the non-American spearmint, the results were similar, Raudenbush said. "And both were showing good things.

"The participants were having a better night of sleep," Raudenbush said. "We saw them moving around less. We saw them waking up less during the night. And they reported that they felt like they had a better night of sleep."

Outside of monitoring participants during the night, researchers also measured quality of sleep by presenting the participants with cognitive tests when they first awoke. Here again, participants exposed to the spearmint scent responded well.

"They had to figure out a puzzle, and they were figuring it out more quickly," Raudenbush said.

Researchers also tracked the alertness of participants throughout the day by having them record their level of alertness when a device they wore on their wrist told them to do so. In all cases, Raudenbush said he and his research team noticed that the participants exposed to spearmint scent during the night retained higher levels of alertness during the day, and particularly during the evening hours.

In the second round of the study, which Raudenbush expects to launch in May, researchers will monitor the EEG patterns

of study participants to get a better understanding of the brain activity of the participants while they are sleeping.

At its core, the research could help answer whether the addition of spearmint scent helps people stay in REM, or Rapid Eye Movement, sleep longer than if no scent or a different scent is present. REM sleep, a stage of sleep associated with dreaming and memory consolidation, is an important stage of sleep and extending it is believed to be beneficial, Raudenbush said.

"That is one of the differences for this second study," Raudenbush said. "We're looking more into the brain activity."

Researchers also will be presenting study participants with different kinds of cognitive tests than in the first study.

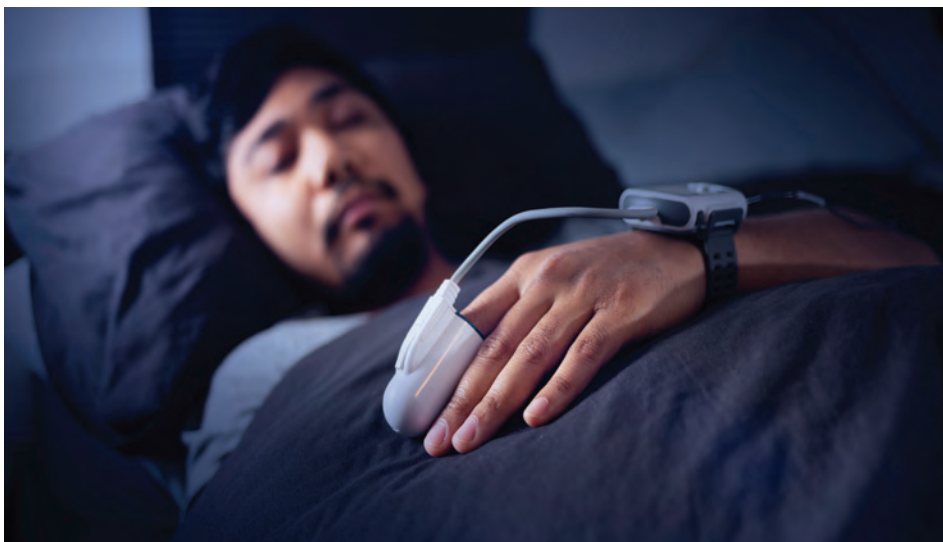
"We only gave them a puzzle to do the first time around," Raudenbush said. "Now we will be giving them a battery of tests lasting about 45 minutes to measure cognitive mental processing."

As with all studies involving human participants, the costs involved in conducting the research is not insignificant, Raudenbush said, and he appreciates the MIRC's continued support for the project.

The reason the researchers are using spearmint versus peppermint, incidentally, is peppermint can tend to make people more alert, while spearmint tends to relax people.

"So, if they are more relaxed, they may be able to fall asleep faster and have a more restful night of sleep," Raudenbush said.

Using a natural ingredient, like spearmint, as a sleep aid is also expected to be more attractive to consumers than using over-the-counter sleep aids that can include unnatural ingredients and could be habit forming. 🌿



AdvanceMint Recipients Bringing Innovations to Farms

The 2024 Mars Wrigley AdvanceMint grant recipients are experimenting with innovations designed to improve sustainable mint production as part of the multinational company's efforts to ensure the long-term health and resiliency of the mint crop in North America. And in a change from the past, the company this year is seeking to promote learning amongst farmers by having grant recipients share their experience implementing their innovations with their peers.

“Mars is committed to the North American mint industry, and we are a company that thinks in terms of generations. So for us, it's really important to ensure that we have sustainable farming and sustainable farmers in the long run.”

Bilal Bawany,
Senior Sustainable Sourcing Lead,
Mars Wrigley

“This year, we are investing in learning from these growers beyond just funding them,” said Bilal Bawany, senior sustainable sourcing lead for Mars Wrigley. “We're going to be investing more in engaging with these farmers who have won the grants to understand their learnings and experiences as they implement their ideas.”

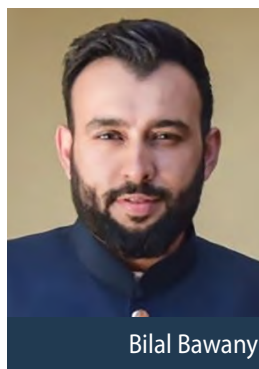
Bawany said that in choosing the four winning applicants, the selection panel focused on proposals that prioritized

testing and implementing new technologies and practices that are not currently common in mint.

“There were a lot of good proposals that were about using an existing technology where the only barrier to adoption was affordability,” Bawany said. “While scaling is important, our panel focused on projects that are trying to do new science or use new technologies in a way that hasn't been applied to mint.

“We looked at the innovation and the level of adoptability of the innovation by others,” he said.

By increasing commitments from farmers to share their experiences, the company hopes to induce more widespread adoption of the innovations by other farmers, Bawany said.



Bilal Bawany

The developments in the eighth year of the AdvanceMint program are centered around an ongoing commitment by Mars Wrigley to support North American mint farmers, Bawany said.

“If we source from a place, we want to make sure best practices are happening, that the farmers are doing well and the environment is being protected,” he said.

Here are the 2024 grant recipients and their stories.

Keudell Farms

As Keudell Farms, Aumsville, Oregon starts to come back to acreage previously planted in peppermint, concerns over *Verticillium* wilt and nematode control are top-of-mind. Rather than turning to a broad-spectrum nematicide to help manage the disease, the farm today with help from an AdvanceMint grant is looking at a biological control program.

“It is supposed to knock back your root-lesion and root-knot nematodes and actually colonize the stand, so it increases the population of your



beneficials,” said Robert Keudell of the program. Further, Keudell said, the biocontrol program is expected to increase soil microbial activity and enhance plant nutrient availability.

The end result, if all goes well, is a longer stand life and improved oil yields.

The program involves applying a biological control agent that kills parasitic nematodes and then coming back with two treatment of inoculants that increase the beneficial activity in the soil profile.

Keudell said the farm decided to look into the alternative control program as it was beginning to produce mint on acreage already planted to



Robert Keudell

the crop, a scenario that can result in reduced yield and shortened stand life due to the presence of *Verticillium* wilt.

“We’ve been growing peppermint for about 25 years now and we’re getting to the point where we’re starting to plant fields that have already had peppermint in them,” he said.

The farm is able to somewhat offset the additional application costs involved in the system by piggybacking on a fungicide application with the first or second inoculant application, Keudell said. Still, the biological control program is nearly twice as expensive as a traditional nematicide program, he said.

Still, he believes it will be worth it in the long run if it increases stand life.

The farm is utilizing funds from the AdvanceMint program to test the system on two fields this year, one a five-year-old stand that has some *Verticillium* wilt in it and a two-year-old stand, which already has one year in the program.

As part of the economic evaluation of the system, Keudell said the farm is taking into consideration the expense of planting a stand, including costs to rip out the old stand, planting costs, transportation costs to get rootstock to the farm from Eastern Oregon and input costs associated with getting a stand up.

“If we knew that we’re going to get five to six years out of the stand instead of three to four, the financial impact would be significant,” he said.

And, he said, the environmental benefits of a reduced carbon footprint and improved soil health also could be substantial and is something the farm is taking into consideration.

Chris Gross Farms

Chris Gross Farms of Wilder, Idaho, today is involved in a cutting edge innovation that if all goes well could dramatically reduce water use while improving crop performance in the farm’s mint acreage.

The farm is using funds from an AdvanceMint grant to help pay for installing a subsurface drip irrigation system that it plans to tie in with an automated system complete with moisture sensors.



The hope is the system provides more uniformity in the farm’s irrigation.

The farm also hopes the system will lead to reduced labor costs, given an operator can set different run times for different zones, depending on soil type and other factors, and not have to be on hand for real-time adjustments.

And the farm is anticipating being able to apply micronutrients and other crop inputs through the drip system, providing a more efficient way to deliver inputs to the mint crop.

Between reduced water use, lower labor costs and increased efficiencies in input applications, Cross believes the system will provide significant economic and environmental benefits.

Another aspect of the farm’s project involves utilizing DNA testing in its soil sampling, a process that Cross believes can help the farm maximize soil inputs. “We will understand the health of the soil and its potential for disease, allowing us to mitigate the risk,” Cross said. “We want our inputs to be as effective and efficient as possible. For example, if the biology is not present to process all of the nitrogen we are applying, we will be able to shift our input expenses into other products that

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may be more effective in enhancing our yield potential.”

While the AdvanceMint grant will provide only a portion of the funding necessary to move forward with the farm’s innovation plans, Cross said the funding is significant.

“Having the AdvanceMint grant available to us is very helpful as we seek better ways to grow plants with a more sustainable intention. Currently, there is a strong emphasis on plant health. My goal is to extend the life cycle of a mint field by mitigating disease through soil health. This means creating a biologically driven soil that provides the plant with a built-in defense mechanism to promote longevity,” Cross said.

“It does make a difference,” Cross said of the funding. “It’s money that I don’t have to pull out of my budget and put into trying something that is not guaranteed to work. It’s nice to have shared investment in that risk.”

Dale Thacker Specialty Crops

For years now, mint growers have been losing energy in steam distillation through the gap that develops between the walls of tubs used in steam distillation and the hay added to the tub. And, according to Dale Thacker, a mint grower from Bow Island, Alberta, Canada, the wetter the hay, the larger the gap and the more energy is lost.

Adding insulation can help minimize the loss, Thacker said. But when he sprayed foam on the tub walls of his cooker, he found significant buildup of corrosion beneath the foam.

Thanks in large part to an AdvanceMint grant, Thacker is now looking at a

three-pronged approach that includes utilizing a trapezoid tub shape to reduce or even eliminate the gap on the sidewall, in combination with tub insulation and redesigned tub steam headers to encourage even steam distribution in the tub. The result, he hopes, will be a more energy-efficient and safer cooking operation.



Dale Thacker

“This sustainability grant is important because it lets you try things you wouldn’t normally try. It provides incentive to experiment with industry improvements without having to bear all the risks and expenses yourself.”

***Dale Thacker,
Distillation Innovator***

Thacker’s attempt to improve energy efficiency in steam distillation has its origins in a realization that mint producers have been cooking inefficiently for years.

“Basically, steam distillation has been really old technology now for years,” he said. “Nothing has really changed since pre-Second World War. Some of the

reasons for that, of course, is that energy was relatively inexpensive, so nobody was willing to address these issues.”

Thacker, who is one of four recipients of an AdvanceMint grant from Mars Wrigley this year, said the grant provides him an incentive to experiment with his different concepts for improving energy-use efficiency in the cooking process.

“This sustainability grant is important because it lets you try things you wouldn’t normally try,” Thacker said. “It provides incentive to experiment with industry improvements without having to bear all the risks and expenses yourself.”

Thacker said he will be presenting findings from his experiment at a future MIRC meeting.

Mark McKay Farms

A technology used in corn, soybeans and other commodity crops is making its way into mint, in large part because of the AdvanceMint grant program and the forward thinking of a Salem, Oregon, mint farmer.

Mark McKay Farms has used an AdvanceMint grant to help pay for the purchase and utilization of a technology that provides real-time information on pest pressure, water stress, nutrient stress and other properties important to mint oil production.

The technology, called Plant Insights, utilizes a camera attached to a center pivot to take thousands of images of a crop on each pass of the pivot. The images are then uploaded to a cloud-based computer software program that analyzes the information and shares it with the grower.

“It’s being used in corn, soybeans, alfalfa, cotton, potatoes and other crops and we are looking to implement it on our farm and see what it can do in mint,” said Michelle Carroll, office manager for Mark McKay Farms and co-owner of McKay Agriculture, LLC.



Michelle Carroll

The technology, developed and distributed by Prospera, a Valmont Company, includes a subscription-based

analysis of crop conditions in weekly reports, as well as real-time alerts if conditions warrant, and it provides weekly comparisons, so a farm can see trends.

“I don’t think it is going to replace the human effect of agronomists walking fields, but it will definitely be another tool for us to evaluate and to help make sure that we’re hitting all the important sprays and fertilizer treatments and keeping up on the water management, and it also might help us reduce the amount of sprays, watering and fertilizing,” Carroll said.

Mark McKay Farms is working with its local irrigation supply company to help

install the cameras on two of its center pivots.

Carroll said the farm is grateful for the grant funds, which it used to purchase the cameras. “It takes capital to get a project like this out in the field,” Carroll said. “And having this additional money is huge for us.”

Carroll added that in addition to the farm’s interest in seeing how the technology will work in mint, Prospera is also interested in the fit. “This will be new for them, as well, seeing it on a specialty crop like this,” Carroll said. “I think both parties are excited to see what it can do.” 🌿



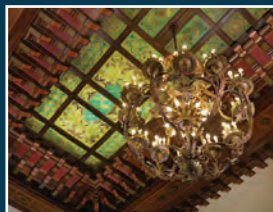
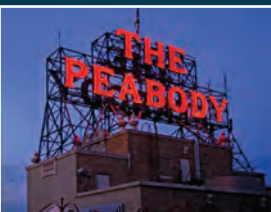
Mint Industry Research Council



Annual Meeting

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SAVE the DATE

JANUARY 22-23, 2025


Make plans now for a 2025 getaway to Memphis and attend the 46th Annual Meeting of the Mint Industry Research Council where all segments of the mint industry gather.

The 46th Annual Meeting of the Mint Industry Research Council will be held on January 22-23, 2025, in Memphis, Tennessee. The meeting will feature two days of special guests speakers from around the country, in addition to industry research reports and updates. The meeting comes to a close with a Thursday evening industry reception.

The Peabody Hotel

Memphis, Tennessee

149 Union Avenue, Memphis TN 38103

Make your hotel reservation directly:

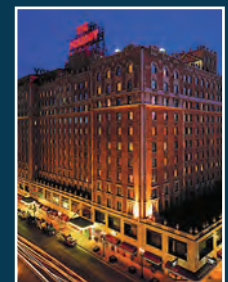
By phone: 1-800-PEABODY

Reference the Mint Industry Research Council to receive the group rate.

Online: usmintindustry.com/meetings

Room rates start at \$199 single/double occupancy, + taxes & fees

Deadline for Hotel Reservations: December 30, 2024 at 5 p.m. CT



usmintindustry.com/meetings

THIS IS A MIRC MEMBERS ONLY EVENT

Chair's Report

Jeff Johnson, Chairman of the Board

While you never know what the weather will be like in the days and weeks ahead, I'm happy to say that to date it's been a good year for mint. The winter and spring seasons have been warmer and wetter than normal in pretty much all the major growing areas, so there shouldn't be any water issues across the board. And there hasn't been any winter kill to speak of, meaning the 2024 North American mint crop looks poised to be a good one.

That said, Mother Nature can always change her mind, but right now the mint industry is set up for success for this summer's harvest.

As far as the markets look, in general, even with the global strife that's going on, we continue to see increased sales, particularly in the global confectionery market, which is encouraging, as we watch the carryover stocks go down in the U.S.

We do see that growers are planting much more to contracts today than in the past, which could cause some shortage issues in the future as sales increase, so there is some concern on that front. But generally the market looks strong, and at least in the short term, stocks appear sufficient.

On another front, I thought the MIRC Annual Meeting went very well this past January. Across the board, the researchers we are funding all performed well this past year, and we had some excellent presentations at the annual meeting, not only from the researchers but also from Colgate and Mars.

Our research funding level was down from previous years this year, incidentally, but we hope to have strong sales this year and to reverse that trend next year.

Research reports that stood out for me included the report from Bryan Raudenbush on his sleep study. There seems to be a lot of excitement around the results of that study, which shows sleep is improved when spearmint scent is added, and, as many of you know, we will be funding a second round of that study this year. A second report that was equally encouraging came from Isabelle Henry of the UC Davis Genome Center. It is good to see that the UC Davis varietal improvement research is hitting all its marks and making good progress.

Finally, I'd like to end my column by commenting on the announcement that Labbeemint is closing its doors



Jeff Johnson



**The MIRC is
on X** *(Formerly Twitter)*

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Research & Regulatory Update

Steve Salisbury

It is an exciting day when we get to announce a new product label is available to mint growers. The MIRC is pleased to announce that Velum Prime has been labeled for use in mint for nematode control. Thanks to the support of Bayer Crop Science and the efforts and assistance of the IR-4 program, mint growers can begin using Velum Prime this growing season. It is always exciting to get a new tool in the IPM box for growers to utilize.

This new label is a result of several years of research investment by the MIRC with Dr. Saad Hafez at the University of Idaho Parma R & E Center. Dr. Hafez diligently evaluated the effectiveness of fluopyram (Velum Prime) on nematodes affecting mint. This research was key in supporting this new label and we appreciate the efforts by Dr. Hafez and his team, as well as Bayer's support of mint.

The use pattern is fairly similar to the industry's longtime stand-by Vydate, so, hopefully growers can begin incorporating Velum Prime into their program with some degree of ease and familiarity. The product can be applied at a rate of 6.0 – 6.4 fl oz. per acre per application. There is a maximum of two applications per season, with a minimum interval of 21 days between applications. It can be applied by ground or with chemigation. There should be $\frac{1}{2}$ to $\frac{3}{4}$ inch of precipitation/irrigation applied within one hour following the application. The pre-harvest interval is 28 days.

For those that are interested and concerned with the residue tolerance levels approved by EPA, these tolerances can be found in the Code of Federal Register under CFR 40 180.661. The tolerance was established for mint hay

(fresh 0.6 ppm; dried 0.8 ppm). Also, fluopyram is registered with approved MRLs in the European Union. The MRL for mint hay in the EU is 60ppm. These details were added in the updated MIRC pesticide tolerance list.

Having a new option for nematodes allows for multiple products to be used. Velum Prime can be used in conjunction with your typical Vydate application(s) if needed. Depending on the specific situation in the field, you can begin from dormancy break to post-harvest and in between as needed. As always, it is important to know your specific situation. And keep in mind, controlling nematodes in mint will also have a positive influence on the development and severity of *Verticillium* wilt in mint fields.

We continue to pursue a label for the use of Spartan between cuttings. We were able to get approval of 24C SLN labels in Oregon and Idaho in 2023. Back in March, Washington approved an SLN for this application as well. We continue to work with the registrant, FMC, to obtain additional state approvals for 2024. Discussions are underway and we hope that the requests can successfully work their way through the process. In the meantime, we are still awaiting the EPA to approve the revised full label to include use between cuttings. There is no timeline as to when that decision/approval will be, hence the request for SLNs from the states. Keep in mind that once the Section 3 label is approved, then the current SLNs will be cancelled. That will be communicated as soon as we know.

Also on the pesticide regulatory front there has been a published update from the EPA on their pending federal herbicide strategy. As we presented and

discussed during all of the winter meetings, this is the strategy that will likely change how all pesticides are regulated in the U.S. In summary, this strategy is part of the EPA's

larger plan to improve their registration and review processes of all pesticides while meeting the requirements of the Endangered Species Act. The draft strategy was released last fall and was open for public comment. As you can imagine, there were a lot of comments from U.S. agriculture.

In April 2024, the EPA published an update on the herbicide strategy as a result of the public comments received and their further considerations. The EPA is providing an update on the improvements they expect to make before issuing the final strategy. So, what are their improvements, and will they truly alleviate the stress and burden originally being directed at U.S. agriculture?

In summary, here are the general areas of improvements the EPA is making to their strategy. First, they are simplifying the strategy so that it is easier to understand. They are going from the complex nine point mitigation decision structure to a four tiered approach. This will simplify determining the amount of mitigations that may be needed for any particular pesticide.

Another improvement made is to increase the flexibility for growers to implement the mitigation measures required. The agency is looking at



Steve Salisbury

expanding the menu of mitigation options, specifically for minor and specialty crops. This is a direct benefit to U.S. mint producers as we fall under those minor crop considerations. Further, the EPA is now working with the USDA on identifying mitigation measures that are sensible for reducing pesticide runoff. This will offer the opportunity for stakeholders (growers, industry representatives, etc.) to provide input on these measures, which makes sense and should have occurred at the beginning of this process.

Further, the EPA is considering the fact that growers may already be implementing mitigation practices to reduce pesticide runoff. As a result of this reality, the EPA is considering reducing the amount of mitigations needed. Yes, the EPA is considering approaches to reduce the mitigation burden on growers. This may also include giving consideration to growers who are participating in agricultural conservation programs or working with qualified experts on designing and implementing mitigation measures. This makes sense given that many programs and/or strategies are designed to be successful in preventing pesticide runoff, and many growers are implementing these already. There should be consideration given to this reality.

Another detail that is being improved within the herbicide strategy is the refinement of species range maps and the reduction of pesticide use limitation areas. The agency is working with U.S. Fish and Wildlife to refine maps for many species. This was a major concern in several areas where mitigation measures were going to be required across a substantially greater area than the actual range of a given species. Refined

map boundaries will benefit both the species of concern as well as production agriculture.

So, what's next? The EPA is planning on publishing the final herbicide strategy by the end of August 2024. Then what? The new mitigation measures will not be required until the EPA approves the new labels for new herbicides, or the revised labels for existing herbicides. Yes, it is still coming, and we should plan accordingly, and pay attention to the labels and revisions.

This is not the last we'll hear about these regulatory strategies. The strategies for rodenticides, fungicides and insecticides are on deck. So, stay tuned and be engaged in the process. In the meantime, it is refreshing to hear that the EPA heard the concerns from U.S. agriculture and were willing to take comments into consideration and act on them accordingly. Let's hope the subsequent strategies take into account the stakeholders earlier in the process. 🌱





Mint Industry Research Council

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