

Organic Spinach Mildew Task Force Meeting Notes – November 7, 2016

Frank Garcia – Fresh Express
Chris Glynn – Earthbound
Ramy Colfer – Earthbound
Corey Kuchta – Organic Girl
Eric Schwartz – Veg Coop
Jerry Rava – Rava Ranch
Pat Collins – Dole
Rodney Braga – Braga Ranch
Josh Roberts – Taylor Farms
Paul Fleming – JV Smith Organics

Overview

No matter which scan data source is referenced, baby spinach comprises at least 50% of the organic salad category. Mildew in organic spinach has been an issue for many years. However, since 2004, mildew has become one of the largest threats to the future viability of the category. In a recent industry wide study, UC Davis, Cooperative Ag Extension estimated that mildew related crop loss can account for as much as a 15% of the total season. Some growers have experienced close to double that percentage this season which puts a significant strain on sustainability efforts, especially with a finite ground base and water supply.

Objective

Bring together a core group of processors and growers that can build a working group structure to identify and accumulate information, science, cultural practices, and engage research aimed at controlling and ultimately preventing mildew in organic spinach. Since there is more unknown than known at this point, this process will start from a “clean sheet” of paper and explore any and all possibilities. This process is not a price or supply discussion. This needs to be a working group and not just another forum to reiterate how untenable the mildew situation has become.

Meeting Notes

- Mildew is causing the organic yield ratio to conventional to climb past 2:1, and a 3:1 ratio on seed acres versus seed. The drought conditions may make seed availability an even bigger challenge next season.
- No matter who you are in the supply chain, there is a significant investment in organic spinach from field conversion to processing lines. The current path is not sustainable. Consumers aren't taking enough spring mix to offset spinach if a large part of the supply goes away. This is one of the most successful SKU's in the category for retailers so there is a lot at stake. Whenever spinach is temporarily out due to mildew, the retailers push back very hard.

- Growers and processors are becoming so concentrated in organic spinach that when any one link in the supply chain fails due to mildew it has a significant impact throughout the organic category.
- The group felt we should start with a Healthy Soils type structure where we initially open the process to any grower or processor of organic spinach. From there we can move toward smaller working groups. The working groups can decide on which outside entities to get involved and when, like seed companies, chemical companies, academia, and private researchers.
- Explore where can we bring in outside resources that are mildew experts, but they don't have to be experts on organic spinach. The intent is to find a TSG type group (private sector, academia) but more focused on plant and soil pathology than food safety pathogens. The same industry guys working on mildew for the past 20-years have a lot to offer but may not be the right guys to lead a paradigm shift going forward.
- Need to frame the order of magnitude of the risk to the category of continuing down our individual paths. One thought is to lay the UC Davis organic spinach study over scan data. That would give us a common context and a message.
- What activities and options can we consolidate as a collective group to move the needle? At a minimum we need a clearinghouse so we can see "wins" and what hasn't worked.
- Need more science to understand how the "O" spores travel and live in the ground. Need to confirm one way or the other if they are in the seed. Need to keep an open mind about where other possible vectors are.
- Mexico doesn't allow seed in with verticillium over 10% on conventional. We need to have something like that for organic seed. Anything higher gets diverted to the USA. If it's not in the seed then why are remote places in CA and NV having mildew issues now?
- Need to engage the pesticide and fungicide chemicals companies now. We have clout due to the other things we buy. We can look at cultural practices today such as solarization in the desert, avoiding the "hot" blocks, making sure the same trucks aren't tracking it between fields, make sure we aren't overstressing the dirt with high density plantings. One grower even makes people sanitize their shoes between fields and won't let pick ups cross field lines during the season.
- Race numbers have exploded since about 2004. Seed guys stopped using "Apron" in 2005.
- Need to engage certifiers early. We don't see the spinach segment getting any smaller. In spite of the 2006 incident consumers still want organic spinach. Retailers need to know this isn't about price but sustainability.
- EBF is active on the OTA board. Not realistic that the industry will be allowed to go back to fungicide treated seed any time soon.
- The industry could look to going under glass. But if its in the seed, that doesn't solve the problem.
- Short term we need to focus on prescriptive measures to minimize the spread and impact. Long term we need to focus on the source and build curative measures, but keep an open mind on what those measures might be. At this point the industry doesn't even have workable testing locked down.

- Another step is to expand on Klosterman's variety trials. That would send a message to the seed companies we are moving fast with or without them.
- We are going to need a mildew chemical at some point because of the mildew issues on other lettuces. The big chemical companies like Dow, (Bayer), and DuPont aren't interested unless it is patentable so its going to be up to the industry. Lets look at reverse engineering the conventional fungicides that work. The place to start is phosphides, and take out the non-organic components and process, like "trust". Sometimes it's just the process that kills the certification so perhaps we should start there and work with the certifiers.
- Dusting sulfur works to a point but the mildew is on the bottom of the leaf and dusting comes from the top. Someone is working with side injecting the dust so it gets up under the leaves. If there is too much sulfur it affects the health of the plant. Another thought is to put the dusting through the air knife on the harvesters. Mexico is currently dusting sulfur for mildew. Like copper, if its liquefied and early enough on the underside of the plant it has shown to help.
- Long term we need to understand the source and vectors to the leaves. That will take some dedicated resources. Short term we could accumulate BMP's and make them available to everyone. If a neighbor is not following good BMP's then we should approach that person and encourage them to participate with us. Processors have the authority to ask their own growers to support this task force and the recommendations that come out of it.
- If we see an organic field that seems to be doing well in the midst of mildew showing up around it, we should approach that grower and try to learn what is working and what isn't.
- There are some new spay rigs down south that reduce drift by as much as 70%, using magnets versus a traditional electrostatic charge.
- If we could consider a looser spec, or find a way to harvest quicker when mildew starts to come on, that may reduce the impact on those crops around it and its ability to become airborne. Freezer spinach creates a bigger challenge because an infected field can sit for days waiting for harvest.
- Adding too much chlorine to the rinse water can actually make mildew worse. It's even harder to control powdery than Downey mildew.
- We need to make sure people get the facts. No one has been able to confirm yet that the "O" spores are in the seed. There isn't a common set of industry-accepted facts on where mildew is, where it starts, and how it moves.
- Research takes funding. We need to start with the widest possible inclusion first, and then whittle the funding mechanism down from there. Koike is familiar with the work on trace genomics. So far the research can't determine if the "O" spores are dead or alive.
- Is there someone in the mushroom industry that is a mildew expert? Monterey Mushroom is using a ph of 11. Bob Jenkins is their CFO so maybe he can share some insight.
- We need an outside plant pathologist and support program like J. Correll at Univ of AR type of background. Klosterman is working on early detection methods through DNA.

- Some processors show retailers the best case and worse case for mildew when they give field tours. The retailers have some knowledge of the issue but we need to have our group solidified first with a solid plan before we can approach them about helping with any research.
- *Paul offered* to talk with Bonnie at CPS. They have a great structure from their work on food safety. Although this is a fungus and not a pathogen, how it moves and spreads could be similar. Mike Atkinson is one in-house expert.
- Need to know what triggers the defense mechanism in the plant, something like “block aide”. We also need a parallel path with soil since we know spores are already there. Can we reverse engineer the “nutria light”?
- Spinach symposium this year is in San Antonio, TX, Dec 1-2 (last year was Yuma). The audience tends to be more freezer folks.
- *Eric offered* to call UC Davis and ask about any up and coming plant pathologists (Richard Michelmore - working on spinach for 20+ years?).
- At PMA there was a PCA service that was able to predict mildew severity based on weather patterns.
- “Crisper technology” is showing promise, and it would be worth looking into if the process were organic. Its not believed to be GMO but not sure.
- Some growers in NC (Coggins) and FL are working on mildew. The Gates Foundation took them over as part of their sustainability effort. Maybe there is a path there for resources since we have the same sustainability issue.
- Sustainability is a significant issue for certifiers, organic trade associations, and those that support organic products. The underlying premise that organics are sustainable is at risk due to the amount of water, land, and seed being wasted by mildew.
- The Specialty Block Grant process closes next week. Is there anyway to get a project submitted this fast?

Next steps

- Invite anyone who grows or processors organic baby leaf. Eric will invite Mary Z. from the Lettuce Research board to the next meeting.
- Set up a repository of cultural practices, research that shows promise, and what doesn’t.
- Need to build a list of plant pathologist who are possible mildew experts. They don’t necessarily have to be from this industry. *Eric to ask* to Artie Lawyer at TSG about possible names.
- Define smaller working groups to address cultural practices, research, and to determine the right time to engage academia, seed companies, chemical companies, organic trade associations, and certifiers. This will be a multiple and pragmatic approach. We don’t want to exclude any idea, while we don’t want to focus on tactics that haven’t worked in twenty years either.

Next meeting –

Friday, November 18, 10am-12pm, Grower Shipper large conference room.