ORG-Tracker Comments to the NOSB

November 2025 Meeting in Omaha, Nebraska

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These comments are submitted on behalf of ORG-Tracker, currently a foundation-funded project of the Heartland Health Research Alliance (HHRA). We hope to improve the integrity of organic food, with a focus on how pesticide residues and risk are mitigated by organic farmers and farming. History confirms that when organic farmers develop and refine innovations in preventive, biological, agroecological, and IPM pest management systems, such systems spill over onto conventional farms and all consumers benefit.

The first section is our response to specific questions to stakeholders that appear in the Fall 2025 Discussion Document titled "Residue Testing for a Global Supply Chain: Regulation Review (§205.671 & UREC). The second section contains a summary of our previous comments to help the new members of the NOSB and members of the public understand how the organic community can make better use of the money it spends on pesticide residue testing. Finally, we propose draft revisions for the NOSB to consider recommending to the USDA.

We have submitted extensive written comments and attending the last three NOSB meetings (access past ORG-Tracker written comments here). We recognize our comments have called for systemic changes in how the organic community deals with pesticides that go beyond current practice, and the scope of changes under review by the NOP and NOSB. Nonetheless, the case for significant changes grows stronger every day. We also recognize that such changes will likely require changes in the statute, as well as modifications in NOP regulations and guidance documents.

Substantial changes in the people serving of the NOSB will occur during and after this NOSB. In the last few years, the NOSB and NOP have created a solid foundation to craft and adopt needed reforms in the regulations and implementation. We look forward to continued participation in the NOSB's / NOP's assessment of opportunities for the organic community, and country, to benefit more directly from efforts in the organic community to incrementally drive down dietary risks and environmental degradation brought about by pesticide use.

These comments respond to the stakeholder questions raised in the CACS discussion documents and then highlight some of the essential changes required to achieve continuous improvement in driving down the adverse impacts of pesticides. We make the case that such progress is essential to strengthen organic enforcement (SOE) and build demand for certified organic foods.

A. Responses to Stakeholders Questions

Mandatory testing of 5% of operations

1. **Is the role of testing the same now as when the 2012 Periodic Residue Testing final rule was implemented? If not, what is the goal of testing now?**

Yes and No.

Yes

The purpose of the 2012 rule was to fulfill a Congressional mandate in the Organic Foods Production Act (OFPA) that requires

"periodic residue testing by certifying agents of agricultural products that have been produced on certified organic farms and handled through certified organic handling operations to determine whether such products contain any pesticide or other nonorganic residue or natural toxicants and to require certifying agents, to the extent that such agents are aware of a violation of applicable laws relating to food safety, to report such violation to the appropriate health agencies" [7 U.S.C. 6506(a)(6)].

The rule was drafted in response to a 2010 Office of Inspector General report that showed the NOP was not implementing this requirement[1]. The NOP remains bound by this statutory obligation. The intent in OFPA has not changed. Certifying agents must continue to conduct periodic residue testing to detect and deter fraud.

All certifiers share responsibility for implementation. Continued random sampling can help maintain confidence and faith in organic integrity when all operators know that anyone could be sampled at any time. Most samples can be expected to test negative, giving continued assurance to the public that organic food rarely is contaminated with pesticides, and when it is contaminated, the levels are usually not a health concern. In the exceptional cases where organic food is contaminated at levels of concern, the NOP has an enforcement mechanism in place to take corrective action to protect the public.

The OFPA also authorizes preharvest testing of any crop grown on soil suspected of harboring contaminants [7 U.S.C. 6511(b)]. The intent of this section was to prevent organic crops that accumulate persistent pesticides from being grown on soils with high levels of these legacy chemicals, such as DDT. While such pesticides may be the result of circumstances beyond a

[1] USDA Office of Inspector General, *Oversight of the National Organic Program*, Audit nos. 01601-03-Hy (2010), http://www.usda.gov/oig/webdocs/01601-03-HY.pdf.

producer's control, they are avoidable by careful management and the production of crops that do not draw up such soil-bound residues via root systems and normal physiological processes.

No

The role of testing has changed for organic certifiers since the regulation was amended to include periodic residue testing requirements. The scope and complexity of testing-based challenges have expanded following 2018 amendments to OFPA and the Strengthening Organic Enforcement regulations that followed from them in 2023.

The number of prohibited pesticides detected in organic supply chains has increased and is expected to continue to do so under current policies and procedures, and in the absence of reforms such as those we have described and promoted in our comments to the NOSB in 2024-2025. Some of the increase in positive samples has been the result of improvements in laboratory technology. The ability to detect such compounds in food, and the frequency with which some risky compounds are detected in organic food, has markedly increased, and lab techniques will continuously improve. Science is rapidly discovering genetic markers that link exposures to certain compounds to heightened risk of adverse health or reproductive outcomes. This trend will also surely accelerate and heighten concerns about the presence of unwanted chemicals in food.

In addition to random testing, a risk-based approach can use the residue data and experience to target high-risk products, locations and types of operations with a history of fraud and other non-compliances, and especially high-risk crops and foods grown in regions that have a history of noncompliance with NOP requirements.

If organic food retailers, handlers, and consumers demand that certifiers aggressively and comprehensively test organic food for pesticides with the intent of a zero-tolerance policy, the costs of doing so will become untenable. Certifiers need data, guidance, and discretion to balance the need to detect and deter fraud with the cost of certification. As we have stated in previous comments, a sound and logical approach is for certifiers and the organic community to rely on human-health risk metrics, coupled when and where appropriate with environmental risks, in determining which compounds should be tested for, how and by whom, and who should pay for such testing.

It is also clearer in 2025 than in 2012 that pesticide dietary risks are not evenly distributed across the country, across crops, and in domestically grown crops versus imports. Our extensive database on residues and risks in organic and conventional food drives home two conclusions:

Pesticide risks in both organic and conventional food vary by orders of magnitude, with a small portion of conventionally grown samples accounting for most high-risk eating episodes. For any given food, almost pesticide dietary risk is caused by a few samples with relatively high levels of pesticides that pose relatively great health risks at small doses. On average, residue and risk

levels in organic food are typically several hundred-fold lower than in conventional samples of the same crop/food, but there are exceptions.

It is rare for high-risk conventional crops to be misrepresented as organic, but it happens. No such episodes are acceptable; all warrant a response and mitigation. By "rare", we mean one to a half-dozen organic samples a year in Pesticide Data Program testing. These samples are mostly imports, with one or maybe two crops, typically grown in the same region, accounting for all or most such residues, for example "organic" bell peppers from Mexico or "organic" blueberries from Chile. More needs to be done in responding to such instances, and one way to make that possible is to adopt policies that allow certifiers to focus on "where the risks are", and ***not just risk of non-compliance***. A mandatory, random 5% of sampling of all operations diverts resources from more targeted enforcement.

With the number of certified operations approaching 50,000 world-wide and 30,000 domestically, we can expect that roughly between 2,500 (5% of 50,000) and 1,500 (5% of 30,000) random samples will be selected for prohibited-substance testing under the NOP rule annually. This round estimate does not necessarily count additional samples currently taken for cause.

Questions remain over whether and how to set a minimum requirement for random sampling. Such a number must account for the enforcement challenges and budgetary constraints that certifiers face.

We propose that the NOSB/NOP consider changes in current requirements/policy to enhance the return on the organic community's investment in residue testing. The general, minimum requirement for number of samples tested could remain a total of 5% of certified operations spread across all certifying agents. However, not all operations would have an equal probability of being sampled and not all certifiers would sample the same percentage. Some certifiers will sample fewer than 5% of their operations and some will sample more than 5%, with the average spread across all certifiers being 5%.

Each certifying agent could be responsible for testing a random sample, or samples, collected from a baseline of at least 1% of all its certified operations. Additional mandatory testing would be carried out as needed and based on risk factors including sales volume, land area certified, experience and presence of prohibited substances, responses to complaints, inspector observations, and other causes.

Such a 1% random sampling requirement would yield roughly 300 domestic samples and 500 total samples annually. Additional risk-based samples would be taken as part of follow-up efforts to track progress in mitigating the presence of prohibited pesticides detected in prior years; the number of such tests could be set at no less than 2% of the number of certified organic operations. A final 2% would be targeted toward operations for which there is evidence of ongoing risk of either fraudulent use of prohibited substances, substitution or dilution of

organic handled product with conventional product, or the movement of such substances onto production fields or into livestock feed.[2]

We believe that such an approach governing how the number of samples tested by a given certifier is determined, and which samples are collected fulfills the congressional mandate for periodic residue testing. Moreover, it is far more likely to detect and deter fraud than the current sampling program and make better use of certifier resources. And last, such an approach will assist certifiers in more equitably spreading the cost of required residue testing across the entities they certify. The cost of the 1% of samples collected randomly would be covered by certification fees, with the cost of the other ~4% borne wholly or in part by the operations on which more intensive sampling and testing is needed to assure organic integrity and maintain confidence in the USDA organic seal. Certifying agents need a way to fund this program adequately in a way that is fair to their clients and does not create any undue burden to any party.

We recommend that additional steps be taken routinely to allocate required testing across certifiers, rather than just within the entities certified by a given certifier. Such changes should deliver the greatest return on testing expenses.

A fairer and more meaningful sampling strategy would be to sample products sold by an operation based on production volumes or the dollar value of its market share[3] or the land area that is certified. Larger operations that supply a greater share of product—often via complex supply chains—pose higher risk exposure than small-scale operations with short and simple supply chains. Higher value products tend to be farmed more intensively. Pest-driven threats to yields and crop quality are responded to more aggressively both on organic farms and nearby conventionally managed fields, thereby increasing the risk of prohibited substances in harvested organic crops.

Samples could also be allocated to target product from other countries of origin prior to entry into the U.S. organic stream of commerce. Sampling would be distributed among certifying agents based on the number of import certificates that are generated by that certifying agent the previous year. Certifying agents could then take a risk-based approach to targeting imports that have historically experienced a high probability of fraud, such as corn and soybeans, and

[2] Certifier residue data collected thus far by the ORG-Tracker team indicates that some certifiers rarely find any prohibited pesticides in the 5% of samples they test annually. To assure a minimal return on investment and maximum benefit, the NOSB/NOP should consider establishing the criteria and a process that certifiers could pursue to become exempt from a requirement to test more than 1% of certified operations. However, additional certifier residue data and analytical work must be completed to craft such an additional policy provision.

[3] Most certifiers collect at least some sales data from their clients. Those that currently do not have the authority to request such data under §205.406(a)(4). With retail sales reported to be over $70 billion (OTA, *Organic Market Report 2025* (Organic Trade Association, 2025), https://ota.com/OrganicMarketReport), taking one sample per every $7 million in sales would yield 1,000 samples. Such an approach would more heavily sample high-value commodities and value-added products and would increase sampling of handlers that are often more likely sources of pesticide contamination than producers.

crops and countries of origin with a history high risk pesticides like green beans and peppers imported from Mexico.

An alternative approach would be to allocate samples across certifiers by land area that is certified or has applied for certification at the beginning of the year, rather than by the number of operations[4]. Such an approach would correct the bias towards regional certifiers with mostly small-scale operations heavily sampling low-risk operations and would spread the sampling over a greater geographical area. To be cost-effective, certifying agents would need to take a risk-based approach based on crops produced and their locations. Range and pasture could be safely assumed to be minimal risk for the food supply and would not be counted in the acreage to be sampled. Certifiers active in areas predominantly growing pest-sensitive, high-value fruits, vegetables, and nuts destined for interstate or international markets should be required to conduct more residue tests per certified entity than certifiers mostly working with many small operations that sell to local markets or producing crops that do not heavily use pesticides and for which residues are uncommon, such as alfalfa or kiwifruit.

Regardless of how the number of required samples is allocated across certifiers, policies and mechanisms should target residue testing where problems have occurred in the recent past, as evident in certifier data and USDA's PDP data. More intensive testing can be carried out without raising overall costs if coupled with lessened focus on areas with consistently negative test results.

Giving certifiers the capability to address regional and crop-specific pesticide-use problems to address in day-to-day operations will improve compliance and result in healthier organic food. Drift of volatile herbicides or spread of fungal spores from a farm that is not properly disposing of culled fruit, are examples of problems with broad impacts that cannot be resolved by individual organic farmers.

Certifiers could become part of the network of entities that can help detect such problems, craft solutions, and ensure they are widely adopted. Conventional growers have benefited greatly from USDA research and extension investments in area-wide IPM programs. Organic growers could likewise benefit from area-wide management efforts to prevent movement of prohibited substances onto organic farms.

[4] The most recent USDA figures estimate certified organic acreage to be over 5 million, with a little over 3 million in crops and the remainder in range and pasture (Sharon Raszap Skorbiansky, *Organic Situation Report, 2025 Edition*, Economic Information Bulletin no. 281 (USDA Economic Research Service, 2025), https://ers.usda.gov/publications/pub-details?pubid=110883. Range and pasture can be safely assumed to carry little dietary risk. Annually sampling every one out of 3,000 cultivated acres would yield 1,000 samples. Certifiers that certify only to the crops scope could be required to take a minimum of two samples from this pool even if they certify fewer than 100 producers operating on less than 6,000 cultivated acres in the organic program.

Most pesticides detected in organic food chains are inadvertent[5], or beyond the organic farmer's control. For example, we estimate that at least 30% of the residues of pesticides detected in organic fruit results from cross-contamination in handling operations that also process conventional fruit[6]. No amount of testing on certified organic farms will detect or mitigate this source of contamination. Certifiers can use this information to notify handling operations that they need to develop more effective programs to prevent cross-contamination and work with them towards full compliance.

The use of volatile herbicides in GMO crops has dramatically increased in many major farming areas, causing serious problems for both organic and non-GMO conventional farmers. This trend poses a serious threat to the viability of organic farming in some three-quarters of the US yet falls outside the scope and reach of current NOP pesticide testing policies and requirements.

Many more examples could be noted. But the NOSB-NOP policy take-home message is that the best way to reduce pesticide risks in organic food is to focus on hot-spots where the risks are. For any given certifier, a random sampling of 5% of its certified entities is bound to mostly miss the forest for the trees.

Based on the above discussion and examples cited, we propose a 1% + 2% + 2% formula to roughly guide selection of samples for testing:

USDA establishes a baseline of 2,500 total samples of organic food taken globally, half of which would be domestic and roughly half would be imports prior to entry.

All certifying agents are required to sample 1% of all operations. These could be either random or risk-based at the discretion of the certifier as spelled out in their administrative procedures. Samples taken for cause would not count. This would provide about 500 samples annually.

Certifying agents that certify handlers are now required to sample the equivalent of 2% the target number of samples based on the sales or reported volume of handled products. The certifiers can elect to sample randomly, based on risk factors, or a combination. Samples for cause may be included in this figure. This would provide about 1,000 samples, of which at least 500 samples would be of imported product tested prior to entry into the U.S. organic stream of commerce.

[5] An "inadvertent" residue in a sample of organic food is one present at a level less than 1/10th of the mean of the positives for the same pesticide-crop combination in samples tested from conventionally managed fields. Such a residue in an organic sample almost certainly is not the result of an illegal application by an organic farmer intended to achieve a pest control outcome. We have recommended that the NOSB/NOP adopt a policy whereby a sample with an inadvertent residue would not routinely force farmers to remove such product from organic food supply chains, nor trigger the need for a mandatory investigation.

[6] CM Benbrook and BP Baker, "Perspective on Dietary Risk Assessment of Pesticide Residues in Organic Food," *Sustainability* 6, no. 6 (2014): 3552–70, https://doi.org/10.3390/su6063552.

The remaining 2% of the target number of samples would be allocated among certifiers based on the cultivated land area net of range and pasture that they report as certified or in transition the previous year weighted by risk factors related to crops and regions certified. This figure can include pre-harvest samples, samples for cause, and samples of non-food matrices other than food, such as for herbicides or persistent legacy chemicals in soil. Approximately 1,000 samples should be collected in this group, of which at least 500 samples would be pre-harvest to detect fraud and prevent product that is pesticide contaminated with high dietary risk from entering the U.S. organic stream of commerce.

The number of samples would incrementally rise every year proportional to the growth in organic sales, acreage, and operations being certified. The formula and criteria can be adjusted periodically as new data and analytical work alter understanding of where high-risk crops are being grown and how they are moving along supply chains.

We acknowledge that current NOP regulations will need to be amended to provide greater flexibility and discretion. However, such a risk-driven program will be much fairer, more efficient, and deliver greater value to the organic marketplace in achieving the core pesticide-related goals set forth in OFPA. We include proposed draft regulatory language for the NOSB to recommend to USDA in Section C.

2. **Do you agree with the direction CACS is heading, proposing that the mandated 5% of operations tested be selected based on risk?**

Yes.

We believe that risk needs to include hazards to human and environmental health and not be limited to risk of fraud or non-compliance. Consumers who buy organic food are far more concerned about the health of themselves and their families than whether organic certifiers adhere to administrative procedures, or their certified organic operations fail to adhere to requirements that provide minimal health and environmental benefits.

a. If not, what other options should CACS consider to make testing more meaningful and effective at identifying the presence of prohibited substances (i.e., meet the goal) while ensuring there is not a backslide towards little to no testing (pre-Periodic Residue Testing final rule)?

Current sampling and testing protocols can detect whether some prohibited substances have been applied on an organic field, but will generally miss most herbicide and fumigant use, and any post-harvest use occurring after raw agricultural products have left the farm.

The NOSB-NOP should develop and provide certifiers, and the organic community, explicit guidance to address prohibited substances that cannot be detected using current sampling protocols and analytical methods. As we have commented in the past, the list of prohibited pesticides for NOP Residue Testing in Guidance 2611-1 is incomplete and is missing several

pesticides that are likely to be indicative of fraud, while also posing dietary risks. These include glyphosate, 2,4-D, and dicamba.

Cost of testing

3. **Do you agree with the direction CACS is heading, proposing that certifiers may directly pass along the cost of testing to certified operations in the case of a complaint or investigation, and that the test would be allowed to count toward the 5% of operations tested?**

Yes.

We propose that the NOSB recommend removing the requirement in §670(b) and (c) that "[s]uch texts must be conducted at the certifying agent's own expense" and replacing it with language that authorizes certifying agents and State organic program to charge reasonable fees to cover the cost of their testing program. These would be included in the certifying agent's sampling and residue testing procedures and policies required by §504(b)(6). Such a revenue stream will at least cover operating expenses and will allow certifying agents to invest in capacity to improve their residue testing program.

We applaud the effort put into thinking through how to better target testing investments by certifiers and certified entities. The direct cost is borne by the certifying agents as an unfunded mandate by the USDA. They may be able to shift this cost to farmers, handlers, and others in the supply chain through higher application and renewal fees, but absorbing the expense means that they may have to cut other vital services. The assumption that consumers ultimately pay these expenses by their purchases of organic food at a premium price is not necessarily valid in all cases. Who should pay for testing, how, and how much will depend on the purpose or purposes served by testing, and who is insisting that such testing be carried out. A cogent response to this question requires greater clarity on how testing requirements and guidelines will change in the future.

In general, we agree that the NOP should establish for certifiers some baseline, random surveillance testing to assure organic integrity and meet Congressional intent. For some crops, the PDP's random sampling of organic food surely fulfills this need. We urge the NOSB-NOP to explore how routine PDP testing could be leveraged to meet this need for at least some organic crops grown in some regions.

In general, we support certifying agents passing on the charge when they are sampling for cause, such as a verifiable complaint. Most current "for cause" testing is legitimate and consistent with all provisions in the NOP rule, and the principles of organic agriculture. However, sampling and testing for cause can be abused. For example, organic farmers may file a complaint to discourage a potential competitor grower from transitioning or expanding production of a given crop.

Concern over residues in some imported crops could lead to a requirement that all imports of the same crop be tested. However, these concerns may be driven more by protectionism than by actual concern for organic integrity. A Consumer Reports analysis showed that some countries of origin and foods are more likely to be a source of pesticide contaminated food than others[7]. On the other hand, the data may show that some countries of origin pose lower risks than domestic produced foods. We urge that any requirement for import testing vary by the country of origin, the commodity being imported, and other risk factors and not simply be indiscriminately applied to all imports.

Some change in pest patterns and pesticide use might raise concerns about residues in organic food that have nothing to do with the actions by certified entities. Government mandated spray programs will still need to be addressed in the regulation. Expanded uses of volatile pesticides that cause drift contamination, like dicamba and 2,4-D, create emerging challenges that will raise the cost of sampling and testing, and unfairly burden organic farmers with the cost of drift. GMO contamination also remains a difficult and unresolved issue that we hope the NOSB will address. We ask that the NOSB consider a mechanism to compensate organic farmers for the loss of organic status from residues and other prohibited substances / excluded methods caused by conventional operations.

We defer to certifying agents and the Accredited Certifiers Association's comments on how to generate revenue to cover the expense of periodic residue testing. The ORG-Tracker team will have access to data that will help ACA and certifiers evaluate alternative funding mechanisms. Our project can also help certifiers get volume discounts from analytical labs. Some ongoing testing will continue to be required by a pattern of suspected, alleged, or confirmed non-compliance arising around a given certified entity. Testing required to confirm the absence of non-compliance in such situations should be borne by the certified entity. The USDA should cover at least some of the costs of residue testing that certifiers conduct in a way that is comparable to the programs that benefit conventional farmers.

Situations may arise when a prohibited substance is detected in an organic crop grown on small farms on which no prohibited substances are applied. The full cost of testing required to determine how the substance got into the organic crop could place a small farm in economic jeopardy. In such cases, certifiers should have access to resources provided by the USDA to cover such unusual testing and investigatory costs.

a. If not, why, and what other options should CACS consider?

The scope and cost of testing required to promote organic integrity will increase over time. Certifiers are required to conduct the residue testing program at their own expense but lack the

[7] Catherine Roberts, "Produce without Pesticides," *Consumer Reports*, April 18, 2024, https://www.consumerreports.org/health/food-contaminants/produce-without-pesticides-a5260230325/.

resources to cover all such costs. We urge the NOSB-NOP to address the cost of such testing, and who should pay for it, as an integral part of assessing the need for policy reforms.

A three-way split in such costs will likely be required: (1) some paid for by certifiers and covered via their fee structure, (2) some paid for by certain certified entities for which targeted testing is required to confirm compliance, and (3) some by the NOP-USDA to cover additional testing, the need for which arises as a result of factors beyond the control of certifiers and organic farmers, and especially testing which advances the public good by promoting organic integrity and growth in organic production. We believe that AMS has the authority and capacity to form a partnership between the NOP and the PDP, allowing for greater cost savings, while also more effectively fulfilling the missions of the NOP and PDP.

4. **Would you support a tiered certification fee model (e.g., high-risk operations pay more toward certification fees as a more equitable approach)?**

Yes.

Consistent with the programmatic and policy changes described above, the cost of samples can be allocated by reported sales and area in the organic program.

Moving to a sampling structure that is based on sales volume and acreage gives certification agents options to charge clients based on the sampling criteria. Instead of spreading the costs across all certified operations by a flat fee, they can charge clients by sales volume, acreage certified, or various risk factors such as a split operation fee. Certifiers that have oversight from a greater sales volume will be better able to spread the cost than certifiers that have mostly small producers with short supply chains and low sales volume.

Access to results

3. §205.670(f): Should §205.670(f) be updated to refer to §205.504(b)(5)(iii) to guide the availability of results? If not, why and what should be done instead?

Yes.

The intent of these sections is to ensure that certifiers have fair and effective procedures for enforcing residue testing requirements, and for members of the public to see the results of certifier residue testing programs. Transparency is essential for the organic market to address contamination incidents and maintain organic integrity. The original NOP regulation required that certifiers provide all results to the Administrator or the appropriate State organic program [65 *FR* 80548, 80662]. That section was removed by the 2012 amendments [77 *FR* 67239, 67244]. AMS retained the requirement to make the data accessible to the public in §205.670(f).

After working with various certifiers, we understand that every certifier has a different policy to meet the accreditation requirements in §205.504(b)(5)(iii). We appreciate and respect that certifiers can have diverse administrative requirements to meet the needs of their clients while

still maintaining their USDA accreditation. However, we hope to help certifiers work toward more consistency, greater clarity, and community consensus about the following:

What information from laboratory analyses for pesticide residues is required to be publicly accessible, what is confidential, and what may be shared or withheld at the certifier's discretion?

What are reasonable fees to charge members of the public requesting results of laboratory analyses?

Can certifiers use a third-party service to fulfill this requirement?

We believe that a platform to integrate the testing results into a single dataset is essential and would help certifiers comply with both sections of the NOP rule. AMS stated in the 2012 amendments that the agency did not intend to create such an integrated dataset [77 *FR* 67239, 67244]. However, the amendment did not preclude certifiers from partnering with a private sector entity in a voluntary program.

ORG-Tracker aspires to obtain and integrate all residue data generated by certifiers, along with the PDP, UK-FSA and other government-sponsored residue testing programs, and possibly other private sector testing (i.e. by handlers or retailers). Each certifier will have a password-protected account that will enable them to upload data. They will be able to share results with each other more efficiently through a single platform. The benefits to certifiers will be further explained in the next section.

4. Database of Results:

a. Should residue test result data be collected in a centralized database?

Yes.

Maintaining a centralized database will help certifiers perform their job more efficiently and effectively by using the data to make sampling and testing decisions using a risk-based approach. By pooling the data and analyzing aggregate results, certifiers will be better able to identify high risk products, regions, and operations. Individual certifiers will not conduct enough tests in any given crop and year to understand trends across time and space in pesticide residue frequency and dietary risk levels.

We know that some crops are more likely to have pesticide residues than others. Samples from some countries of origin have a higher probability of testing positive for pesticide residues than others. With domestic samples, we've seen that some states, and even some counties within a given state, will be more likely to test positive, while other states or counties may not have a positive result for years.

The ability to accurately identify those products and locations that are generally high risk versus low risk will depend on an ample number of samples tested year-to-year. By combining all

certifier residue data with the USDA's PDP test results, the organic community will have the residue data required to target future testing, research, and ongoing efforts to more efficiently sample high risk products, locations, and operations. Such progress is essential in leveraging investments in enforcement actions, and is by far the best way, over time, to further drive down pesticide risk levels in certified organic food.

The ORG-Tracker project is creating the analytical infrastructure required to generate such analytical insights from available pesticide residue data. But without a centralized source of high-quality residue data, the organic community will not be able to consistently focus on the crops and regions associated with occasional high-risk residues.

b. What is the objective in collecting this data in a centralized database (i.e., how will this collected data be used)?

The ORG-Tracker team has described the benefits in our previous written comments submitted to the NOSB in the past three meetings. In short, by combining all certifier data in one place, there will be an adequate number of samples for many crops to identify pesticide-dietary-risk hot spots so that additional testing, and possible enforcement actions, can be carried out.

Expanding the number of organic food samples organic food tested for pesticides will enhance the ability to analyze residue frequency and risk levels in organic versus conventionally grown food. An aggressive testing program designed to protect the integrity of organic food will bolster the already robust body of literature that shows a given organic food will almost always have significantly lower risks than its conventional counterparts. The evidence will help in responding to critics of organic food and farmers who raise spurious claims about pesticide risks in organic food.

Epidemiologists that are researching the likely contribution of food nutritional quality and safety in driving trends in chronic disease, reproductive problems, and other factors undermining human health and longevity can also benefit from access to an integrated database, especially when residue data are coupled with risk metrics grounded in EPA's evaluations of pesticide toxicity[8]. In such studies, there is a compelling need for more accurate estimates of pesticide dietary exposures to more effectively account for exposures to pesticides in assessing the factors raising the risk of various adverse health outcomes. Certifier data can augment PDP data to provide a more complete picture of actual levels of exposure and risk. More data on residues in different foods as a function of production system and country of

[8] ORG-Tracker's interim fiscal agent and sponsor is the Heartland Health Research Alliance (hh-ra.org). HHRA's interest in raising the funding for ORG-Tracker, and overseeing its creation, was substantially grounded in HHRA's epidemiological work linking pesticide exposures to health outcomes, and particularly the widely recognized need for data driven, update-to-date quantitative metrics covering pesticide dietary exposures and risk. E.g., ORG-Tracker output will be drawn upon in future epidemiological modeling by the Heartland Study team exploring prenatal herbicide exposures and birth outcomes.

origin will support progress in the search for ways to lessen the disease burden across the US population arising from pesticides in food, drinking water, and the air.

c. Who should have access to this result information? Certifiers? Public?

We support the continuation of full public access. The ORG-Tracker platform can help facilitate this, while also adding considerable analytical value and context to the results. Raw data on pesticide residue levels in various foods, by itself, is of limited value for most people. Residue data that is converted to dietary risk levels, and then used to compare risks across foods, over time, by pesticide and in domestically grown food versus imported food, and in food grown conventionally or on organic farms, becomes both useful and actionable in guiding efforts to identify and mitigate high-risk residues. We also believe that the results will be of value to retailers, handlers, processors, and others in the organic food industry to help them improve their QA/QC programs. Finally, we believe that researchers interested in protecting public health and food safety should have access to the data to help them in their search for more cost-effective ways to lower pesticide dietary risks.

Downstream notification to buyers

5. Based on previous comments, CACS is leaning toward requiring the notification of downstream buyers when residue test results are above 5% of thresholds. Should other types of positives trigger this type of notification?

Yes.

We recommend that the NOSB-NOP move away from 5% of the existing EPA tolerance as a key threshold determining whether organic food can be sold as organic. This is because some EPA-set tolerances remain far higher than the level EPA can defend as "safe".

The organic community endorsed the 5% of EPA-set tolerances as a threshold under the general presumption that a residue at 5% or less of the applicable tolerance would be "safe". While that was questionable assumption when OFPA passed, it has been unequivocally not true since passage of the FQPA in 1996, and EPA has acknowledged this to be the case. In the Dietary Risk Index (DRI) system, any relative risk score over one means the residue, or many residues, are over the level EPA regards as safe.

A strong policy case can be made for adopting instead a 5% threshold of the level of a pesticide EPA currently regards as "safe" in a single serving of a given food. Such levels are easy to calculate from the chronic Reference Doses set by EPA for all pesticides (or when applicable, a pesticide's chronic Population Adjusted Dose), coupled with typical serving sizes for various foods.

UREC

7. Are there other solutions that CACS should consider, beyond the Board's previous recommendations, to revise NOP 2613, to help organic operations and certifiers navigate the presence of low-level residues?

Yes.

Please see our previous risk-based certification, residue testing, and co-formulants or "inert ingredients" in NOP-approved pesticides. We summarize some of the key approaches in the second section of these comments.

B. Summary of Previous Comments

We support an evidence-based approach to address the issues surrounding pesticides in the organic food supply. Specifically, we are building a platform called ORG-Tracker that can be used by the organic community to detect fraud, make more efficient use of certification resources, and further reduce the dietary risks associated with pesticides in food.

Our thoughts on the subject continue to evolve as we discover more about the interactions of pesticides with human health and the environment. We believe that promoting public health is of paramount importance for the NOSB-NOP to consider as it modernizes policies and requirements governing pesticides in organic food. Our hope is that organic food will fulfill its promise to be the healthiest and safest food on the planet, and that as a result, the supply of organic food grows in step with rising consumer demand.

ORG-Tracker grew out of conversations we have had with USDA National Organic Program (NOP) accredited certifiers beginning in 2020. Our team has been tracking pesticides in organic and non-organic food for over 20 years, using data from the USDA's Pesticide Data Program, the California Department of Pesticide Regulation sampling program, the UK's Food Safety Authority's Pesticide Residues in Food program, and samples taken by Consumer Reports.

ORG-Tracker serves three primary purposes:

Help the organic community to identify sources of domestic and imported organic food containing residues that do not comply with NOP rules, are likely to be linked to fraud, and pose risks to the organic food supply.

Help researchers quantify the benefits organic food and farming systems on pesticide residues and dietary risk levels and conduct epidemiological research on pesticide impacts on specific health outcomes.

Provide useful data and analytical support to guide actors in the organic food supply chain and public policymakers to further reduce prohibited synthetic pesticides in the organic food supply chains and further reduce pesticide risks to the public.

We believe that collecting the data from all samples taken by organic certifiers on a common platform will improve implementation and enforcement of the NOP, and more efficient use of certifiers' time and money. Rigorous analysis of the data can identify hot spots, target operations likely to commit fraud, and further improve the safety of organic food. ORG-Tracker can assist certifiers and the NOP identify what countries of origin and specific products routinely have levels of pesticides that are likely to be the result of fraud, and aid in their investigations to protect the integrity of the organic food supply.

Residue Testing for a Global Supply Chain

We commented on the NOSB's discussion document "Residue Testing for a Global Supply Chain" at the Spring 2024, Fall 2024, and Spring 2025 meetings. Our comments made the following suggestions to the NOSB:

- Organic food already provides substantial benefits to the health of consumers by reducing pesticide dietary risks.
- The producers, handlers, and certifiers can and should continue to improve the health and safety of organic food through an evidence-based approach to reduced risks.
- Most pesticides detected in organic food pose low risks to public health and appear to be inadvertent levels that are consistent with Unavoidable Residual Environmental Contamination (UREC).
- A small number of samples make up a disproportionate share of pesticides that pose a substantial risk to public health, with levels that are evidence of a willful, deliberate application of a prohibited substance that can be investigated as fraud.
- Evidence of fraud and dietary risks is not necessarily captured by the current blanket 5% of EPA tolerance to be excluded from organic sale.
- Instead, exclusion of food from being sold as organic should be based on dietary risks.
- Specifically, we propose using the EPA's "Levels of Concern", which are based on a pesticide's chronic reference dose (cRfD) and the typical serving size of a food.
- When residues in a serving of food pose risks above an EPA-set chronic exposure threshold, that food cannot be deemed safe and should not be sold as organic.
- When a residue or multiple residues of a prohibited pesticide are above the average (mean-of-the-positive) levels found in conventional food, then certifiers should investigate whether the residues are the result of a willful, deliberate application of a prohibited substance and fraud.
- Farms and handling operations vary widely in their risks and the current sampling requirements do not take that fully into account.
- Some products, locations, countries-of-origin, and types of operations have a higher probability of contamination. Rather than randomly sampling 5% of all operations across-the-board, certifiers and researchers can analyze data to target high risk operations and locations.
- Specifically, the 5% sampling requirement imposed on all certifying agents over-samples low risk operations with a low probability of fraud and under-samples operations that are more likely to have contaminated products and the pressure, rationalization, and

opportunity to commit fraud. Instead, sampling should be based on a percentage that is program wide and based on a percentage of production or sales volume, rather than a percentage of operations.

- The analytical methods used need to be expanded to include widely used pesticides not included in a standard multi-residue analysis, including glyphosate, 2,4-D, and dicamba and their metabolites.
- The relationship between the NOP and the Food and Drug Administration's Pesticide Residue Monitoring Program needs to be clarified and strengthened.
- Specifically, we ask the FDA:
    - Identify all samples of foods products labeled as organic in their database.
    - Share all positive pesticide residue results with both the USDA NOP and the certifiers in an expedient way.
    - Assist with the investigation of the source of contamination.
    - Consider food to be "adulterated" under the Food, Drug, and Cosmetic Act when it is labeled as organic and contaminated with prohibited pesticides that were fraudulently applied in violation of the Organic Foods Production Act (OFPA).

Risk-based Certification

We also commented on the NOSB's discussion document on risk-based certification at the two most recent NOSB meetings. Our main points are:

- Risk oversight needs to protect organic integrity in a more comprehensive way that goes beyond ensuring compliance with certification standards.
- Health and environmental risks should be prioritized over other risks from non-compliance.
- Not all fraud presents risks to human health or the environment.
- Not all human health risks are the result of fraud.
- The greater the scale of an operation and the complexity of its supply chain, and the larger its market share, the greater the risk of exposure to public health and the environment.
- Specifically, the following risk factors should be weighted heavily when conducting unannounced inspection and sampling for prohibited substances:
    - Size of operation,
    - Crops grown or raised, and history of prohibited substance issues,
    - How split operations are addressing heightened risks,
    - Parallel production and handling, and
    - History of land use and surrounding agricultural operations
- Non-compliance risk factors are a function of incentives and motives both upstream (input suppliers) and downstream (product buyers).
- Health-related risk reduction requires resources and systematic action from inside and outside of the organic community to cost-effectively address risks imposed on the organic sector that have little or nothing to do with fraud or negligence by certified entities.

- The definition and policies related to Unavoidable Residual Environmental Contamination (UREC) need to be revisited by the NOSB, the National Organic Program (NOP), and likely as well, the U.S. Congress.
- Action and no action thresholds based on UREC and current, hazard-specific chronic References Doses are necessary for organic certification to reduce health risks and protect organic integrity, while sparing producers, handlers, and certifiers the burden of investigating and addressing all instances of low-risk exposure.

Co-formulants

Lastly, we submitted comments on the sunset of ingredients contained in formulated pesticide products—commonly known as "inert ingredients"—at the Fall 2024 meeting. These substances are biologically active and should not be considered "inert". The term "co-formulant" is more accurate. We note that the USDA has not advanced the NOSB's recommendation as a proposed rule. Our comments did not support the NOSB's recommendation and instead proposed that the NOSB work towards consensus rather than offer two diametrically opposed alternatives.

Our comments can be summarized as follows:

- The NOSB recommended two options to the USDA rather than a single recommendation that reflects a consensus of the organic community:
    - Option 1 presumes all synthetic substances are "Presumed Incompatible With Organic" (PIWO) unless they are evaluated and meet the OFPA criteria.
    - Option 2 presumes all synthetic substances are "Presumed Compatible With Organic" (PCWO) unless they are evaluated and don't meet the OFPA criteria.
- Both proposed options are incomplete and raise unanswered procedural questions that will fall short of what is needed to resolve this complex and difficult issue.
- The current regulation reflects a risk-based approach by allowing pesticide products allowed for organic production to include only ingredients that are classified as minimum risk.
- The regulation is constrained by obsolete references to "inert ingredients" in OFPA.
- Many coformulants approved by EPA are more toxic to humans than the active ingredient in many formulated pesticides used for organic production and handling.
- Risk-based certification should apply to all ingredients in formulated pesticide products because every ingredient in a formulation has a function that can change health and environmental risks arising from altered environmental fate, exposure levels, metabolism, and toxicity.
- Full disclosure of all ingredients and their concentrations in pesticide products approved for use in organic is essential to maintain organic integrity and should be among the critical new components of future NOP policy applicable to inerts.
- The two proposed "either / or" approaches should be combined in a hybrid option that will both meet the needs of the organic community, support incremental progress in reducing pesticide-related risks, and spare the NOSB and NOP from most of the time and resource-intensive tasks triggered by the need to evaluate and make decisions on hundreds, if not thousands of inert ingredients.

- The NOSB should request a Technical Review of the current and recommended policy option to sharpen understanding of likely consequences.
- Pesticides used on imported organic foods are not subject to US EPA regulations and may contain coformulants not accepted for formulations that are EPA registered.
- In the face of sunset, the NOSB should consider proposing that the current rule remains in place to avoid market disruptions caused by the sunset of formulants.

Because organic standards apply to products grown outside the U.S., many pesticides used to grow organic food are not subject to U.S. EPA regulations. All ingredients need to be disclosed and evaluated before they can be used on organic farms. The global implications of co-formulants need to be taken into consideration if the standard for co-formulants is changed.

C. Specific Recommendations

Our comments included proposed amendments to the NOP rule. We also acknowledge that some of our proposals and comments may not be possible unless the OFPA is amended. Specifically, leveling the playing field with import verification, distributing the cost of sampling and analysis, and sharing test results and enforcement responsibilities with FDA may require Congressional approval. We also believe that the obsolete language regarding inert ingredients in OFPA needs to be replaced with more current and appropriate directions reflecting changes in pesticide regulations since OFPA was drafted in 1990.

We offered the following proposed definitions for Risk, Risk Assessment, and Unavoidable Residual Environmental Contamination:

Definitions

Risk entails: (1) ~~The p~~Potential for fraud and other major non-compliances by an organic operation that can and/or should result in adverse action to certification. ~~exposure to deceptive, dishonest or noncompliant actions, resulting in financial losses, reputational damage, certification status changes and/or legal consequences. Risks on organic operations can be categorized as risk of non-compliances (in broader terms), or more specially, as risk of fraud.~~ (2) Potential for harm to people or the environment from exposed to prohibited substances like pesticides and GMOs.

Risk Assessment is a systematic process of evaluating potential risks (likelihood, severity, reversibility) that may be involved in, or arise from an activity, use of an input, surrounding land uses, or farming system changes. This may include the assessment of fraud, human health, ecological, and other ~~and/or more board~~ compliance related risks of an operation.

Unavoidable Residual Environmental Contamination (UREC) entails the presence of prohibited substances and excluded methods in organic food and organically managed soil that result from circumstances beyond the control of the people managing a current certified organic farm, ranch, or packing/processing facility.

Periodic Residue Testing

§ 205.670 Inspection and testing of agricultural products to be sold or labeled as "100 percent organic," "organic," or "made with organic (specified ingredients or food group(s))."

. . .

(b) The Administrator, applicable State organic program's governing State official, or the certifying agent may require preharvest or postharvest testing of any agricultural input used or agricultural product to be sold, labeled, or represented as “100 percent organic,” “organic,” or “made with organic (specified ingredients or food group(s))” when:

there is reason to believe that the agricultural input or product has come into contact with a prohibited substance or has been produced using excluded methods;

previous analytical results collected by certifiers and official sources identify products, regions, or operations that have a higher than average probability of residual contamination;

Other risk factor identified in administrative policies and procedures as specific in §205.504.

~~Samples may include the collection and testing of soil; water; waste; seeds; plant tissue; and plant, animal, and processed products samples. Such tests must be conducted by the applicable State organic program's governing State official or the certifying agent at the official's or certifying agent's own expense.~~

(c) Under the direction of the Administrator or the applicable state organic program’s governing State official, ~~A~~ a certifying agent must annually conduct periodic residue testing of agricultural products to be sold, labeled, or represented as “100 percent organic,” “organic,” or “made with organic (specified ingredients or food group(s))~~.~~” and collect a minimum number of samples established and approved annually by the Administrator or the applicable state organic program’s governing State official based on the following criteria:

From crops sampled from that certifying agent’s portion of the total certified cultivated land area as reported in the Organic Integrity Database at the beginning of the year;

From handled product sampled from that certifying agent’s estimated share of the organic market based on data collected from its clients submitted in its annual report;

From imported handled product based on the number of import certificates generated from the Organic Integrity Database in the previous year.

~~Samples may include the collection and testing of soil; water; waste; seeds; plant tissue; and plant, animal, and processed products samples. Such tests must be conducted by the certifying agent at the certifying agent's own expense.~~

(d) A certifying agent must, on an annual basis, sample and test from a minimum of ~~five~~ one percent of the operations it certifies, rounded to the nearest whole number. A certifying agent that certifies fewer than ~~thirty~~ one hundred operations on an annual basis must sample and test from at least one operation annually. ~~Tests conducted under paragraphs (b) and (c) of this section will apply to the minimum percentage of operations.~~

(e) Samples collected under paragraphs (b), (c) and (d) may include Samples may include the collection and testing of soil; water; waste; seeds; plant tissue; and plant, animal, and processed products samples.

(f) Certifying agents may charge operations reasonable fees to recover the cost of testing based on criteria published in the policies and procedures and approved by the Administrator.

Renumber current (e), (f), and (g) to be (g), (h), and (i) respectively.

Exclusion from organic sale

§205.671 Exclusion from organic sale.

When ~~residue testing detects~~ a prohibited ~~substances~~ substance is detected in organic food at levels ~~that are greater than 5 percent of~~ equal to or greater than 10% of the Environmental Protection Agency's ~~tolerance for the specific residue detected or unavoidable residual environmental contamination~~ level of concern, the agricultural product must not be sold, labeled, or represented as organically produced. The Administrator, the applicable State organic program's governing State official, or the certifying agent may ~~conduct an investigation of~~ investigate the certified operation to determine the cause of the prohibited substance.

D. Conclusions

Our comments on risk-based certification, pesticide residue testing in a global supply chain, and formulations of pesticides used in organic production are offered as an approach to organic certification to use the best available scientific evidence to continuously improve the quality, safety, and health benefits of organic food. We invite the NOSB—particularly its incoming members—to seek opportunities to improve the safety and quality of organic food through its recommendations for research, guidance, and standards. Your questions and requests for additional information are welcome.

Links to Previous Comments

Spring 2024

Fall 2024

Spring 2025