

02-04-22 Testimony to House Natural Resources Committee Re: Bill H501

Thank you, Chair Sheldon and Representatives. My name is Tom Gilbert. I am the owner and operator of Black Dirt Farm LLC, in Stannard VT. We are a diversified, integrated farm with five core enterprises that mimic the carbon cycle and seek to build an economy of scope, rather than one of scale. We collect roughly 30 tons of discarded food weekly from over 100 businesses, institutions and residential drop offs. We make a compost blend with this material that is used as forage for a flock of 1200 laying hens. What they don't consume is composted and used and sold as compost. A portion of our compost is further processed by worms to make worm castings for retail and wholesale markets. Finally, we grow 40 acres of crops, including hay, leafy greens, tomatoes and a small number of other produce crops. I am honored to have the opportunity to discuss H502 and its clear intent to protect soil from pollution. I believe this is a powerful place to start, however it is my hope that the committee will expand the scope of the bill to better create the conditions for it to achieve this goal.

Central to the reason for this bill is the recent history of the URL and the ANR's oversight of it. It is important to understand how we got to where we are in an effort to correct it. The URL was passed unanimously by the legislature and reflected a wonderfully democratic process. This process was thorough and resulted in a meaningful law that set a new precedent for state level, resource management legislation nationally. At the core of this Law are carefully crafted definitions intended to ensure a high quality, resource-management approach to organic materials recycling. This process was usurped at the Agency level through reinterpretation of these definitions without legislative or public review. The Agency further obscured the process by developing incongruent legal reasoning and denying any change in interpretation. In part, addressing the concerns that depackaging raises must include some clarification of these issues to prevent further deviation from legislative intent.

With the central goal of protecting the soil from pollution, establishing measurable thresholds for contaminants will be important, however this process deserves more meaningful consideration than is afforded in this session. It is my hope that this committee pursue legislation that will set this process in motion, but with sufficient time for comprehensive work. In addition to using this legislation to establish this process, I hope the committee will take additional steps that can provide immediate protection and prevent soil pollution ongoing.

Steward the Resource, Prevent the Problem: Source Separation

Fundamentally, contamination tolerances should be a backend, failsafe mechanism, rather than a strategy, for preventing pollution. Therefore, legislation should look further upstream for solutions and reinforce the goals of the URL in achieving pollution prevention first, starting at the source, through source separation. Preventing pollution of farm soils with microplastics, PFAS, and other contaminants requires stewarding the organic resources that will ultimately become soil inputs. Best practice is to mitigate pollution upstream of the opportunity for pollution. Keep clean water clean by keeping dirty water separate, not just testing water.

Source separation is the most effective strategy for keeping organic resources free of pollutants, and it is entirely viable for the majority of food residuals, including many packaged products. This is important in the face of Agency acquiescence to depackaging, but it is also important because of historic and ongoing pollution knowingly occurring at some composting facilities. The legislation should seek to prevent contamination in all organics recycling programs. In some cases, municipal composting facilities include plastic lined cardboard products on their list of compostable materials. There is adequate literature on the concerns composting plastics present and this information has been around long enough to inform our rulemaking. I was first introduced to the concern about microplastics in compost from food scraps in the 1990s, and have built my food scrap programming in the intervening 25 years on the premise of source separation as a result. It is well known that plenty of haulers in this state make no effort to ensure source separation and are thus knowingly hauling contaminated food scraps to composters, who are knowingly accepting it. Post process screening can remove visible contaminants but not chemicals or micro particles. Instead of leaning into this issue, and pursuing source separation more vigorously, the Agency side stepped the issue, deferred to mechanical innovation over social innovation, and embraced depackaging by reinterpreting the Law to allow it.

Fundamental to the issue at hand is the tolerance for contamination and the privileging of industrialization as a cultural bias. These are important to recognize so that we can mitigate their influence going forward. ANR's behavior in adjusting State Laws to accommodate the industrialization of organics recycling, and its comfortability with soil pollution, is not a new issue, and yet we often fail to see the trend. Concerns are increasing over the growing documentation of farm soils contaminated with PFAS and other chemicals as a result of decades of sludge applications with little oversight from State Agencies, despite on-going concerns expressed by academic institutions and citizen groups. ANR has, like other state environmental agencies, shrugged off concerns about sludge application. Now as PFAS and other toxins are being found in recipient farm fields, regulators appear surprised. Instead of prevention, we are stuck with crisis management. The time to prevent PFAS and other soil contaminants was before they were applied to soil. Now that they are there, remediation is not an option. A recent blog post from Song Bird Organic Farm in Maine reveals the terrible legacy of regulatory complacency, now resulting in a family's well ruined, their long-term exposure to high levels of PFAS in their water, and their soils contaminated in potentially irreparable ways, with no accountability. We must learn from this.

We have failed to recognize that the idea of the passive state, here only to quietly respond to the market, is a losing proposition on issues of social and ecological importance. The market has never been good at accounting for anything beyond profit potential and is incapable of mediating this with social priorities. The Hierarchy was intended to establish unequivocal commitment to social priorities over market trends. The State must establish what is in the best interest of society and the ecosystem, then allow the market to sort out the operations within that context. Instead, from internal correspondence at the Agency we can see that the Agency adjusted its interpretation of the rules to that of a specific industry at the expense of the broader community.

The intent of URL was to develop an organics management system that effectively got resources to their highest and best use (the Hierarchy) and safeguard these soil inputs from pollution (source separation). Explicit language was included to ensure adherence to them and prevent a 'race to the bottom' in the market. ANR's actions have triggered the race to the bottom and now favor operators who externalize the cost of pollution onto the soil.

ANR's interpretation of the source separation definition and the Hierarchy is not only hard to reconcile, but is also patently inconsistent with their own previous interpretations, a change the Agency denies. An internal draft of the 2019 Food Residual and Packaged Organics Management Policy obtained through a Freedom of Information Act request initially stated:

"Policy:

After considering applicable statutes, the intent of the Universal Recycling Law (Act 148 of 2012) and evaluating the food residuals management strategies being employed across the state it is the Agency's policy that food residuals shall not be mixed with packaged organics at the point of generation. The regulatory basis supporting this policy is outlined below.

Food residuals - are defined in statute (10 V.S.A. 6602(31)) as:

"source separated and uncontaminated material that is derived from processing or discarding of food and that is recyclable, in a manner consistent with section 6605k of this title. Food residual may include preconsumer and postconsumer food scraps. "Food residual" does not mean meat and meat-related products when the food residuals are composted by a resident on site."

Source Separated – is defined in statute (10 V.S.A. 6602(32)) as:

"the separation of compostable.... materials from noncompostable....materials at the point of generation." (sections of this definition applicable to mandated recyclables removed for clarity).

The plain language of the statutes is clear that food residuals, by definition, must be source separated from non-compostable materials at the point of generation and managed in a manner consistent with the priorities listed in the food residuals management hierarchy. Mixing food residuals with packaged organics does not satisfy the source separation requirement and automatically precludes the materials from being utilized by any of the higher priority options on the hierarchy."

The Agency has since shifted its position and now argues that the phrasing of the source separation definition implies that compostable and recyclable materials can be comingled, so long as they are separate from trash. Source separation is a well-established term in both the recycling and organics recycling industries, and this interpretation is wildly inconsistent with industry norms, so much so that new legislation in New York explicitly exempts depackers from source separation because the two are inherently irreconcilable. In addition to being disingenuous, this interpretation is incoherent. What if organic materials were being comingled with recyclables? It would interfere with recycling operations and immediate action would be taken to remedy the issue. It would not be tolerated, let alone justified with this reading of the Law. But considering the reasoning further, it is also built on the premise that all packaging is recyclable, which its not. In reality depackaging systems are in fact comingling trash with

organics. Last, the Agency's interpretation is fundamentally counter to the other provisions in the URL designed to ensure plastics, metals and other recyclables are not disposed of. Packaging removed during depacking (including packaging that was previously recycled) is not recycled, it is disposed of by landfill or incineration. This would seem to be illegal under the same statute. To correct the current situation, we must get these important definitions right and ensure shared understanding of them going forward. I hope this legislation can do that.

As a result of the Agency's reinterpretation, the market conditions we sought to prevent in the legislation have come to bear. In the example of my own farm, we work hard to prevent contamination and devote administrative and operational hours weekly to prevention and management. We make decisions about our equipment to help us ensure good contamination prevention. We provide trainings and require all staff and students to attend these. As a result, it is more expensive to run my operation than an operation that doesn't require source separation. Working with us as a customer is also, to some extent, harder (but not too hard!) because we have higher expectations. As a result, our efforts to protect soil and abide by the Law, undermine us in the market. Our losses to the depacking market are roughly \$100,000, a considerable portion of revenue for a small operator. When we drafted the URL we had hoped our due diligence in crafting definitions and other aspects of the law would allow us to develop a market that was insulated from this and able to flourish in its own ambition.

Risks and Pollutants

Depackaging data

- a. Not enough data or established methods is a reason for caution and prevention, not inaction. The Agency and others have argued that inadequate data and methodologies exist to regulate micro plastics, and thus efforts like H501 are premature. This is a problematic orientation to these issues. Instead, it would be wise to see the absence of adequate science as a reason for caution, given the abundant indicators of concern.
- b. Mixed loads – It is important to understand how organics collection and depacking work. Within the food residual streams there are a wide variety of substreams, each with unique characteristics. It is important to understand that a machine, like a depacker, will work to varying degrees of success depending on these characteristics. It is critically important that in addition to highly homogenous materials, we better understand the pollution potential from mixed loads. It is clear from manufacturer literature that mixed loads result in the highest contamination rates. Further, the more mixed the load, the more total pollutants there are to potentially end up in soil.
- c. Compared to what? When trying to reconcile microplastic and other data from depackaging, it is important that we understand the assumptions. For instance, if one were to look at the data from a depacker and say its level of contamination is no greater than compost, it would be important to ask if the control compost has been effectively source separated. This is less an issue of composting versus depackaging, and more a question of source separating versus not source separating.
- d. Other pollutants from packaging. Food packaging is diverse. We should make sure we are taking the full view of potential toxins in packaging when assessing the risks it possesses, and not become singularly focused on one pollutant or another.

Microplastics

Microplastics are being rapidly linked to a variety of human, soil, and ecological health concerns. There is an increasingly wide body of literature to this effect. Where gaps exist in this literature, we should not presume safety. Microplastics, like PFAS, are not removable from soils, and certainly any method of doing so that might exist in the future would not be as efficient or effective as prevention today. I will assume the committee will conduct its own review and take expert testimony on the risks of micro plastics, but as you likely know, micro plastics are linked to cellular and genetic damage in humans, and are also connected to terrestrial and aquatic damage. Less is understood about the effects of microplastics on soil health, but we do understand that they undermine soil aggregate stability, which is the foundation of healthy soil and prevents erosion, as well as water holding capacity.

Of particular concern is the growing body of evidence that uptake by crops and other food sources is occurring, and this creates pathways for human consumption of microplastics. Further, studies show that microplastics can also become vehicles for other toxins to enter humans. In soils, Kirkham has documented the increased plant uptake of heavy metals like cadmium with increased levels of microplastics in soil. Similarly, according to Smith et al. (2018) “In addition to additive chemicals being associated with plastic debris, microplastics in the ocean accumulate persistent organic pollutants (POPs) such as polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and organochlorine pesticides like dichlorodiphenyltrichloroethane (DDT) or hexachlorobenzene (HCB)...”

While we don’t have the full picture of potential risks associated with microplastics, we have enough insight to know it’s worth taking preventative action.

PFAS

The concern about PFAS, their impact and their distribution is widely known. In a 2021 report on Persistent Chemical Contaminants in food waste management, the EPA notes the pathway of PFAS into soils through contaminated food scraps. The report goes on further to state “Strategies to mitigate risks due to the land application of composts and digestates contaminated with PFAS include upstream solutions, such as phase-outs and bans; feedstock restrictions to avoid processing of waste streams likely to have the highest levels on PFAS; use restrictions for soil amendments (e.g., application as a landfill cover versus on farmland); and concentration limits for soil amendments.” Effectively implementing this requires a cohesive, systemic approach that can start with this bill.

Recommended Amendments to the Bill

- a. **Affirm source separation** is the Law in Vermont; direct ANR to clearly communicate this and provide oversight of this, including:
 - i. Communicating to haulers and organics processors that they cannot knowingly accept contaminants. Focus on oversight vs. enforcement.
 - ii. Establishing clear guidance on acceptable materials and specifically, immediately ban all synthetic inorganic products, like plastic-lined cardboard milk cartons, from lists of acceptable materials for composting

and digestion. This should be included in the State's Materials Management Plan, and Solid Waste Entities should be required to submit their acceptable materials lists for review as part of their SWIPs.

- iii. Developing a strategic plan to promote and incentivize source separation and the organics management hierarchy;
 - iv. Ensure that recyclable materials are being recycled and not being landfilled or incinerated as a result of depack.
- b. **Moratorium on further permitting** of new depack facilities
- c. **Immediate guardrails on depack** - Ensure that unpackaged food materials are not commingled with food packaging, and ensure that recyclable food packaging is recycled. Regulate the technologies (depackaging) that violate the law such that they can only be used where source separation of packaging from food scraps is not feasible. Specifically, and immediately, ban the following from depackaging facilities:
- i. Non-packaged materials
 - ii. Post-Consumer materials
 - iii. Easily unpackaged materials with one layer of packaging that can be emptied by shaking, dumping or pouring
 - iv. Recyclable materials that will be rendered unrecyclable by depackaging
- d. **Establish short term guardrails on application of product** coming out of depack facilities until contamination limits can be established through the study committee – apply precautionary principle. Ban application on agricultural fields, garden soils, and ecologically sensitive locations.
- e. **Set up a process to inform future legislation and rulemaking**, and convene a study committee to:
- i. Develop guidance to protect human, soil and ecological health from pollutants, plastic and otherwise. Identify pollutants of concern in food packaging, the pathways by which these could make it into soil, the best mechanisms for preventing this, and the safe tolerances for them in soil.
 - ii. Seek to adopt the most rigorous standards for contaminant threshold, like microplastics and PFAS, in materials that will be land-applied.
 - iii. Ensure transparency for farmers, gardeners and other consumers utilizing compost, digestate or other end products that may contain pollutants.
 - iv. Evaluate how jurisdictions, domestically and internationally, with contamination standards are testing soil amendments to determine contamination levels.
 - v. Establish guidance for when depackaging is appropriate for separation.
 - vi. Prioritize source separation and create provisions that promote this and reward practitioners who achieve high standards.
 - vii. The study committee should be scientifically focused and include a variety of independent experts, as well as ANR staff and other stakeholders, however it should not be convened by ANR given their overall unwillingness to meaningfully address or provide straightforward leadership on this issue.