



MEMORANDUM

To: Board of Commissioners  
From: Tom Moreau and Dan Goossen  
Date: May 17, 2013  
Ref: Compost – Herbicide Exposure Issue

**A) Latest Chemical and Bioassay Results:**

Since our last meeting we have two new sets of results; some additional chemical tests by Dow and another set of growth trials or bioassays, this time done in our new greenhouse.

1. Dow 26 tested additional samples for CSWD and the VT Agency of Agriculture.

Highlights:

- 5 were compost samples of mixed blends just before the compost process starts (pre-air). The samples go back to the mixed ingredients from July through November 2012 when we were either still incorporating horse manure or impacted wood chips into our recipe. As expected, all 5 samples had detectable levels of both aminopyralid and clopyralid. The intent was to see if we could see any degradation through the compost process. That is still an unanswered question but it appears that there might be some degradation of aminopyralid.
  - 6 were compost samples that had undergone the “active phases” of compost, were screened and had some level of curing. The good news here is that the first batch with no horse manure and without recycled wood chips had no detectable level of aminopyralid and a slight amount of clopyralid (3.4 ppb dry). (results attached).
  - 8 were archived raw horse manure samples that were taken in July 2012. **The news here is that we were able to identify a horse stable in Colchester that had a measurable amount of aminopyralid in the horse manure delivered to Green Mountain Compost. The Vermont Agency of Agriculture and Food Markets (VTAAFAM) has been investigating this and we understand that the stable does not grow any of their own hay but purchases it from a hay dealer. VTAAFAM has informed us that they have now identified the hay dealer who allegedly used aminopyralid on the hay prior to selling the hay to the horse stable. VTAAFAM is still in the midst of their investigation and enforcement action.**
  - 2 were garden soil samples, one of which was my impacted soil taken at the end of the growing season after I was able to plant and harvest the oats supplied by Green Mountain compost. The good news was that neither garden soil had any detectable concentrations of Dow’s three persistent herbicides.
2. Dan ran 50 different samples with either fava beans, peas, red clover or tomatoes. Ann Hazelrigg, from the UVM plant diagnostic clinic assisted with the observations.  
Highlights:

- Of the 11 soil samples that had been impacted last summer, none showed any herbicide impact in this growth trial except for one that had a slight impact in week 3 that eventually disappeared. No other soil sample showed any herbicide impact.
- All the compost or topsoil samples with known or suspected concentrations of aminopyralid all exhibited herbicide impact problems.
- Some of the compost with just clopyralid but no aminopyralid showed some impact symptoms that tended to get better as the bioassay lengthened. In other words, the plants showed some symptoms early on then the symptoms either disappeared or got measurable better as time went on.
- The addition of high carbon ash to some compost samples known to have aminopyralid showed marked improvement.
- **Sample CA 134, the first compost sample made without any horse manure or recycled woodchips in the recipe, showed no herbicide impact to peas, beans or clover.**

## B) Risk Management Update:

1. The VTAAF, USEPA and Dow all agreed on a new label for aminopyralid product that should go a long way describing the necessary precautions to take when using this herbicide. A copy of a portion of the new label is attached.
2. VTAAF has made all 4 persistent herbicides “Restricted Use” requiring a licensed applicator. Additionally VTAAF has established a new “By Permit Only” requirement for all of the persistent herbicides used in Vermont. VTAAF has notified a licensed herbicide retailers of this new program and are currently working out the details for permitting and reporting. The outline of this program is attached.
3. CSWD has started to take samples from every batch of compost that has undergone the 6 to 7 week active phase and has been screened. We are now running growth trials on all batches (~ 1 sample every 100 cubic yards).
4. We will not resume the use of horse manure at this time until the following conditions can be met:
  - Chemical testing is available for all 4 persistent herbicides by either VT AAFM or a commercial lab
  - VTAAF new permit system is up and running with the required publicity
  - The Horse stable will identify all sources of their hay and the hay dealer certifies that no aminopyralid was used within 18 months of harvesting the hay crop.
  - VTAAF can run the yes/no analyses on our feedstocks and screened compost for aminopyralid.
  - Calculations show that we can utilize horse manure and the finished compost will have clopyralid concentrations that show no herbicide impact.