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New Regulations Allow Nutrient Claims for Compost

The NYS Department of Agriculture and Markets has signed revised fertilizer regulations that improve the way composts are regulated. CWMI, the Farm Bureau and compost producers in NYS worked with NYSDAM to develop the revised rules. Previously, the rules required anyone making nutrient claims to specify the minimum guaranteed nutrient content on a dry weight basis. Because composts are a variable natural product rather than a formulated dry product, there were problems for compost producers. There was also inconsistency with CAFO regulations that require a farm moving nutrients off the farm (such as by selling compost) to specify the average nutrient content. Other issues with the previous rules were also addressed such as testing methods and the list of parameters about which a compost producer can provide information.

The new regulations can be seen at: <http://cwmi.css.cornell.edu/Composting.html>. They exempt composts consisting of animal manure, vegetative matter and bedding from fee and license requirements and establish a registration system. Results of tests to determine the average nutrient concentrations are to be submitted to NYSDAM at least every other year.

Consideration of further amending the regulations to allow the addition of other compost feedstocks that are commonly used on farms was urged by compost producers attending the annual Program Work Team meeting (see report below) in December, 2005. NYSDAM Associate Commissioner Rick Zimmerman expressed interest in hearing from farmers about the organic residuals that they are using such as whey, food scrap, etc.

Managing Road-killed Deer Through Composting

Improving the management of the more than 25,000 deer carcasses that the NYS Department of Transportation (DOT) must dispose of each year has led to a DOT-funded CWMI project to investigate static pile composting. Monitoring has been initiated for an array of pathogens in 4 locations around NYS where compost piles have been established. Intensive research testing is taking place on the compost pad at Cornell, and pilot piles are located on DOT facilities in Watertown, Cortland and Highland.

In addition to investigating pathogen reduction, the project involves looking at worker health and safety questions (this work is being done by Nellie Brown with the Cornell Industrial and Labor Relations Workplace Safety program). Others involved in the project are faculty in the Cornell School of Veterinary Medicine, Cornell Farm Services, NYS Department of Environmental Conservation (DEC), NYS Department of Health, Woods End Research Lab and numerous DOT participants.

Educational outreach is part of the project and includes development of a fact sheet and a DVD (produced by Insights, the company that has worked with CWMI on many composting

educational videos). Outreach will be done with the help of DEC, Cornell Cooperative Extension, DOT and local highway departments and will target both NYS DOT and local highway personnel that manage road killed animals.

See <http://cwmi.css.cornell.edu/tirc/tirc.htm> for information on the project (including gory details).

Using Dried Manure Solids as Dairy Barn Bedding

Recycling manure back to the barn for bedding sounds crazy until you see how successfully it is being done on some progressive farms. A common practice in California for many years, some NYS dairy farms have been trying it recently. Put through a separator, the dried solids may be used directly or may be further dried through composting.

As an expensive component of dairy farm operation, bedding options are an important topic. CWMI is investigating questions concerning the quality of the bedding (pathogen concentrations, moisture, particle size and other parameters are being measured) and herd health. Funding provided by NYS Energy Research and Development Authority and by the NYS Farm Viability Institute will enable CWMI to work with 5 NYS dairy producers. Partners include the farms and faculty in the Cornell College of Veterinary Medicine. Outreach of results to NYS dairy producers as well as Vets and agricultural advisors will help farmers make decisions about this practice.

Managing Organic Residuals Program Work Team Annual Meeting Summary

The annual meeting of the PWT on December 13, 2005 in Ithaca drew a lively group of 40 diverse stakeholders together. A summary of that meeting follows.

PWT co-chairs: Ellen Harrison, CWMI and Keith Severson, CCE of Chenango County.

Attendees discussed their interests. Those in attendance were:

Brian Aldrich, Cornell University, Biological & Environmental Engr

Bob Aman, Aman Farm

Jean Bonhotal, Cornell Waste Management Institute

Nellie Brown, Cornell University, ILR Ext - Buffalo

Tro Bui, Cornell University, Animal Science

Jeff Cooper, Onondaga County RRA

Mark Darling, Ithaca College

Phillip Dickson, Leo Dickson & Sons Farm

Joseph Dreels, NYS Dept of Ag and Markets

Robert Eller, CCE/Private

Kathryn Evans, CCE of Madison County

Gary Feinland, NYS DEC, Solid Waste, Reduction & Recycling

Shirley Ann Felder, Sullivan County First Recycling & Refuse

Tom Fiesinger, NYSERDA

William Francisco, Leo Dickson & Sons

Douglas Goodale, SUNY Cobleskill

Jeff Gulliver, Mapleton Ag Transport

Ellen Harrison, Cornell Waste Management Institute

Anthony Hay, Cornell University, Microbiology

Thomas Herlihy, RT Solutions
Jenna Hicks, Cayuga County SWCD
Jim Hotaling, Cayuga County SWCD
John Idowu, Cornell University, Geneva Plant Pathology
Allison Jack, Cornell University, Plant Pathology
Jeff LeBlanc, WeCare Organics
Drew Lewis, Cornell University Farm Services
Brian Luton, Stones Throw Farm
Christina Mace, Sullivan County First Recycling & Refuse
James Marion, NYS Dept. of Correctional Services, ENYCF, Division of Industries
Connie Patterson, Patterson Farms
Van Petersen, Sullivan County First Recycling & Refuse
Marty Petrovic, Cornell University, Horticulture
Ed Rowley, NYS Dept of Ag & Markets
Sally Rowland, NYS DEC, Solid Waste & Hazardous Materials
Mary Schwarz, Cornell Waste Management Institute
Keith Severson, CCE of Chenango County
Ken Thomas, Country Folk News
Marjorie Torelli, Western Finger Lakes SWMA
David Wazenkewitz, NYS DEC, Region 7
Frederick Wishner, Aqualife Farms
Rick Zimmerman, NYS Dept of Ag & Markets

Topics that the group was interested in and discussed included:

How do food processing residuals and food scrap and other diverse feedstocks fit into composting, especially on farms, what are the rules, risks and benefits?;
Marketing of composts, better understanding and promotion of compost properties such as increased soil health, disease suppression, use in organic agriculture, quantifying benefits of compost use;
Labeling and certification;
Use of compost in green buildings, in erosion control;
Cooperative composting and digestion among different farms and other organic sources;
Capturing the heat from composting;
Microbial ecology of composting (including vermicomposting);
Renewing activity of NYSAR³ Organics council;
Composting to manage mortalities and flesh residuals both routinely and in biohazard and disasters;
Use of chemical additions in composting such as adding N;
Environmental impacts of compost use;
Use of manure as dairy barn bedding;
Degradable plastics in compost

NYS DEC Regulatory Issues Regarding Taking of Off-site Residuals

Sally Rowland, NYS DEC summarized the rules. Note that, regardless of exemptions, if a facility causes pollution, it would come under regulation

The NYS Part 360 rule has 3 levels of regulation:

1. Exemption (no permit). Farmers have big exemptions. They can dispose, process, treat, store etc anything non-hazardous that is generated on the farm. Activities of other generators are exempt (short of disposal) for residuals generated on-site or on sites owned by same owner in same DEC region. They could also take up to 1000 yards of off-site food waste a year under a registration (see below). Larger quantities of off site materials require a permit. Recognizable food processing residuals are not food waste and are exempt. The rationale is that there is more potential contamination in food waste (ie. from grocery stores and feeding establishments). If the food processing residuals are non-recognizable, they are not exempt and need registration. Manure movement between farms is exempt can dispose of manure, compost it or land apply it. Moving manure off the farm where it is generated to a digester requires a permit (the law did not anticipate digestion, DEC is trying to fix that). Less than 3000 yards of yard waste is exempt.

2. Registration. A form saying facility will meet conditions. 3-10,000 yards of yard waste requires registration.

3. Full permit (engineering report, public notice, etc). Required if taking food waste >1000 yards and for any digester taking off-site material. Permit is for the facility – specify type and quantity and area from which waste will come. More than 10,000 yards of yard waste requires a permit.

Modification of the DEC Part 360 Rules

Regional digesters for manure - under the current regulations these require a permit although regional composting facilities for manure do not. These facilities may not require a permit in the revised regulations.

CAFO/food processing waste - under the current regulations a CAFO farm that accepts food processing waste is subject to criteria in both Part 360 and CAFO regulations which may not be consistent. To fix, Part 360 will be revised to defer to CAFO if the farm has an approved CNMP.

Food processing waste (fpw) storage - under the 2003 regulations, non-recognizable food processing waste can be stored at a farm, under a registration, in a manure storage facility as long as the non-recognizable fpw does not exceed 10% of the contents of the storage facility. The language in the regs is confusing and will be fixed in the next revision.

Off-farm Residuals

Issues in composting food waste

Ensure, that feedstock is clean and that chemical quality is what you want. Variability of food waste can be a problem.

Pathogen kill – a concern with post consumer. Need background info on what it does and does not kill. Dept. of Corrections got a statement from chief medical officer and will share with CWMI. CWMI might write something up.

Degradable plastics – some are not fully degradable but break up into pieces, they may concentrate endocrine disrupting chemicals and other lipophilic organics. These can also go airborne.

There are some truly degradable plastics that fully decompose. Cornell is converting one dining hall to bio-based materials.

US Compost Council has a specification for degradable plastics in the TMECC methods manual. Only 2 vendors are approved.

Compost use in organic production

Organic certification does not apply to compost, but compost can be approved for use in organic production. Go through OMRI and/or NOFA.

Weeds

Can aquatic weeds be put into a digester? They can be composted, S end of L Champlain and several other lakes in NYS are composting weeds.

Invasive species – can they be composted (ie. will vegetative and seed reproduction be controlled)? Some Cornell research on large-scale dairy farm manure-based composts showed that weed seeds were effectively eliminated. Small-scale composting that does not get hot is not likely to control weeds.

Composting of invasive species – has not yet reached the radar. Most compost producers would not want the liability. Giant hogweed is a recent invasive species effecting the northeast, the plant causes very bad rashes.

Marketing – requires educated consumers. Expect 3 year learning curve.

Maturity is an important quality. Maybe a label like “aged at least 90 days”.

Though desired quality depends on end use. Some vineyards, for example, want immature compost for weed control.

Concern that if you claim disease suppression, may have to register as bio-pesticide with EPA and NYS DEC and the required toxicity testing is very expensive. Also the variability of composts would be an issue.

Can you make money composting? Don't get too excited about tip fees for off-site residuals, keep costs down. But tip fees help so long as you can move the materials. Marketing is not a general farm expertise. Turf construction is a large market. How to compete with free municipal materials? Try to include in specs OM of 5-7% - you can use less of our material than leaf and yard waste. Or maybe promote as US Compost Council STA certified. Get info to contractors as they start projects.

Leveling the playing field with municipal composts that are usually given away for free is an issue. Some municipalities would like to start charging for their compost. How can they make this change? Maybe NYSAR should sponsor a discussion on this.

Compost additives

Inoculants don't change what the community is and will be.

Adding N is being done successfully in some high carbon composts.

Compost and the Fertilizer Rules

Reported by Rick Zimmerman, Ed Rowley, NYS DAM.

A law passed in 2003 to exempt compost from the rules for fertilizers was vetoed, DAM put together working group to identify industry needs. The goal is to ensure continued protection for consumers while encouraging use of compost as a fertilizer. Proposed rules were developed that exempt compost consisting of animal manure, vegetative matter and bedding from fee and license requirements. They also require registration and some basic testing and labeling.

December 31, 2005 was close of public comment period on the proposed rules.

Discussion: Is there a regulatory definition of vegetative matter? How would food wastes be treated – probably not allowed. Since many farm compost producers are taking food wastes, can

the regs be modified to address this? Need a definition of vegetable matter. Could it include incidental non-vegetative materials in food wastes from restaurants, grocery stores? How about whey, milking parlor wastes, etc? **SEND DAM a full spectrum of what is composted on farms. These may need to be addressed in a revision to the rule.**

Other wastes composted on farms: Grocery store, restaurants, cafeteria/institutional pre and post consumer, whey, curds, processing wastes, fruits, vegetables, grains, dairy processing, food processing, off-spec or spoiled foods, dairy farm wastes from tanks, etc..

Compost use in turf and vineyard maintenance and landscape construction

CWMI is working with a team to look at the results of compost use in these settings. Dairy and poultry composts are being applied. A question was raised about the potential impact of nutrients resulting from the landscape construction since compost would comprise about one third or more of the soil.

Manure as bedding

CWMI has two projects beginning to evaluate use of manure solids as bedding. A number of NYS farms are trying it with apparent success.

Attendees reported: One farm was using paper sludge, then saw drop in somatic cell count (SSC) when changed to dried manure for 4 years. Then got some spikes due to teat end damage. Changed milking machine that will do less damage. Have seen a slight increase in Johne's at one farm when changed to bedding with DMS. Need religious cleaning of stalls. Another farm tried bedding with post-digested solids. Consider whether use of digested manure and changes in cells resulting from digestion would make solids less suitable for bedding.

Composting mortalities

CWMI is working with NYS Dept. of Transportation and others on composting of road killed deer. Research into pathogen reduction and outreach to state and local highway departments, including production of a DVD, are part of the project.

Outreach activities

A new series of Compost Fact Sheets developed by CWMI are available for free on the CWMI WWW site (<http://cwmi.css.cornell.edu/Composting.html>).

A revision to the On-farm Compost Handbook published by NRAES is underway.

A CWMI proposal to NE SARE to convene compost roundtables in NY and PA and to hold an advanced compost short course is likely to be funded.