

James O'Claire

Prof. Anne McKnight, Environmental Studies 188 UCLA, Winter 2013

March 15, 2013

Distributed under a Creative Commons license

Attribution-NonCommercial-ShareAlike 3.0 Unported (CC BY-NC-SA 3.0)

(for more info: http://creativecommons.org/licenses/by-nc-sa/3.0/deed.en_US)

Composting

Regulations for compost can take on a variety of standards across the country and world. Compost in itself can be a vague term which overlaps in some states with fertilizers, amendments and mulch. Though the definition is not set in stone, composting usually refers to the result of decomposition of organic matter making a nutrient-rich soil. In California the precedent is that laws regulate the maximum levels of heavy metals and other dangerous chemicals and pathogens. The regulation is the result of industrial composters not always having control over their sources of compost, thus the presence of heavy metals. Pathogens can be introduced to the compost via biosolids or breed in insufficiently hot compost piles. By examining other states' requirements for composting I seek to understand how the California model compares and what possible ways it could be improved. Currently, the standards which have been set have no legal consequences for those whose compost is mislabeled which misleads consumers on the quality and nutritional makeup of the composted soil. California could most benefit from minimum nutrient requirements as well as a more specific ingredients list that includes percentages.

I was motivated to look into composting based on a personal experience I had from buying compost from Home Depot for a student garden project at UCLA. In our

situation we were bounded by low funds and an inexperience in the Southern California soil scene. We went to Home Depot and bought Kellogg's *N'Rich: Compost Planting and Mulching* and *Garden Soil: For Planting Flowers and Vegetables*. Unfortunately, both appeared to be the same make up of mostly wood chips interspersed with soil. Had I not known that on one package the label said compost and the other soil I would have thought both bags we bought contained mulch. In the two months since then what I perceive to be one of the bigger difficulties is that plants are not growing as well as they are in regular potting soil. The nutrients are insufficient as well as, I feel, the size of the majority of the pieces of soil are too large to easily support young root structures of seedlings. This frustrating situation is what has led me to look into the California regulatory laws concerning compost.

Kellogg was started by H. Clay Kellogg in Southern California in 1925. They have specialized in creating soil amendments that serve the Southern California region as well as parts of Nevada and New Mexico. Their products have traditionally focused on amendments that are best suited to different types of soils found in these regions. More recently they have focused on urban and individual gardening markets.

In California the regulations for composting are laid out in *Title 14, Natural Resources--Division 7, CIWMB*. In Chapter 3.1 we find the regulations for composting of which *Article 7. Environmental Health Standards* is the most applicable for this paper's purposes. Summarily, the other articles deal with compost site locations, operating procedures, reports and regulatory tiers for composting facilities of different sizes. The majority of the regulations pertain to composters who operate at a scale of

greater than 1,000 cubic yards annually, though some of the Health Standards apply to anyone making compost commercially available.

The most striking aspect of the California compost regulations is that they are solely focused on keeping contaminants out and make no effort to regulate beneficial nutrients. *Article 7* defines heavy metals and pathogens as dangerous to public health and sets maximum limits. The regulations list a total of 9 heavy metals, including Arsenic, Mercury and Selenium, which each its own maximum allowable weight. Similarly, *Article 7* defines methods for reducing pathogens in the compost. Pathogens are defined as any bacteria, virus or other microorganism which may have negative health impacts on humans. Thus, the tests specifically look for Salmonella and more generally they measure the amount of Fecal Coliforms. Though Fecal Coliforms are believed to have little to no impact on human health, they are an easy indicator that other pathogens could be surviving in the compost due to low temperatures or contamination from biosolids. Biosolids refers to the cleaned waste from wastewater facilities. Testing for the largest producers who include biosolids in their compost is required monthly and more infrequently for smaller producers.¹

My analysis of the current regulations is that they are currently only focused on the regulating dangerous heavy metals and pathogens without any focus on requirements for ingredients. While this allows for a greater diversity of products in the marketplace it also allows for a huge variety of products to be labeled “compost” or “amendment” without having to specify exact nutritional data. This has allowed an

¹ <http://www.calrecycle.ca.gov/Laws/Regulations/title14/ch31a5.htm>

organization such as Kellogg to package and sell a highly inferior product called compost as it simply has to avoid high levels of heavy metals and pathogens.

I will take the examples of Oregon and Minnesota as more comprehensive sets of laws so that we may analyze their strengths and weaknesses. In Minnesota the appropriate regulations can be found in *Minnesota State Statute 18C.211 Guaranteed Analysis*. This section is about the 'guaranteed' labeling of commercially available fertilizers. Minnesota law defines a fertilizer as "a substance containing one or more recognized plant nutrients that is used for its plant nutrient content and designed for use or claimed to have value in promoting plant growth." In this sense, the products available from Kellogg in California would be considered fertilizer in Minnesota, were they to be sold there, which they are not. As an additional note, compost is more vaguely defined as organic material derived from the process of composting (decomposition) by Minnesota law. Though the definitions are clearly a step ahead of California's code's lack of definitions, they are also somewhat nebulous.

In the *Guaranteed Analysis* statute Minnesota regulates that, "if plant content is contained" the labeling must include Nitrogen, Phosphate and Soluable Potash percentages on the packaging. This is similar to food packaging requirements to display not only ingredients but the percentages of proteins, carbohydrates and vitamins. In Minnesota, to claim secondary or other micronutrients, minimum percentage levels must also be attained before claims can be stated on labels. These requirements are almost exactly the opposite of the regulations in California. Interestingly, in searching the entirety of *Chapter 18C* I could find no mention of "heavy metals." It appears that Minnesota does not regulate heavy metals as a category in fertilizers and compost. In

searching for the names of several of the heavy metals I found arsenic to have specific regulated minimums but nothing about Mercury or Selenium. Pathogens are only mentioned once in the definition of composting, and only to say that process of composting should be sufficient to kill pathogens to be considered composting. Thus, Minnesota appears to have much less regulation regarding these aspects of compost and fertilizers than California. It is worth noting at this point that Minnesota's statutes regarding fertilizer and composting are significantly longer and more complex than California's regulations.

Moving on to our Northern Neighbor Oregon, I expected to find laws much similar to Minnesota's but was very surprised how different Oregon's laws were from both California and Minnesota. I found Oregon's laws to have characteristics of California's laws regarding pathogen reduction. Oregon rewrote most of the composting laws in 2009 restructuring them to require less regulation and testing for small scale feedstock, fertilizer and compost production facilities. The laws are located in *Oregon Administrative Rule Chapter 340, Divisions 93, 95-97*. Interestingly, these laws specifically mentioned that they were focused on protecting individuals who were composting "in their backyards" which I felt made the laws very approachable. Similar to Minnesota, Oregon began *Division 93* with a list of definitions, which included definitions of land types and zoning procedures. Oregon's definition of composting was much more definite than Minnesota's. Oregon defines composting "as the managed process of controlled biological decomposition of feedstocks. A managed process includes but is not limited to reducing particle size, adding moisture, manipulating piles, and performing procedures to achieve human pathogen reduction." Ultimately, Oregon

appeared to have far less specific regulations than Minnesota or California. There were no mentions of any heavy metals or specifics of pathogen reduction. Most of the laws appear to be guidelines more than specific regulations. For example, labeling laws simply require “type and concentration of hazardous substances if known” to be listed. I think that this approach most likely has both positive and negative aspects.²

In comparing Oregon and Minnesota to California the most noticeable difference is California’s laws’ relative simpleness. Regulation can often be burdensome, but at the moment California is actually the least restricted market of the three in terms of regulations. Yet this is not benefiting consumers. Were California to adopt new measures I would argue that the most important would be the labeling laws which Minnesota puts so much emphasis on. Labeling laws should include standardized definitions and requirements for ingredients and nutrient percentages to be listed.

So, what is in the Kellogg’s soils we bought? My research brought me across a topic that I had not heard discussed before, biosolids. Biosolids is the term used to refer to liquid, mostly water, which has been treated at a water treatment plant. Opponents of biosolids refer to them as “Toxic Sludge.” Biosolids are used to keep industrial compost sites damp and are usually provided free of charge. Unfortunately the EPA has discovered that biosolids often contain high levels of pathogens and can lead to contamination of the compost piles.

As far as the nutrients contained in Kellogg products, I could only find tests carried out which measured the levels of heavy metals and pathogens. Often Kellogg products contained much higher, but within the legal limits, of pathogens and heavy

²Oregon State Law http://arcweb.sos.state.or.us/pages/rules/oars_300/oar_340/340_093.html

metals. Since Kellogg is not required to list out percentages of their ingredients or the nutrients they contain there appears to be no up to date detailed information on Kellogg's current line of products. This may also be because Kellogg appears to change the branding names of its lineups every couple years.

In conclusion, the regulations of Minnesota and Oregon give California a unique direction in which it can head. Since California's current laws are not very extensive they allow for a greater freedom in the market for individuals to enter into the composting market. Unfortunately it has also allowed companies like Kellogg to seemingly arbitrarily label their products without detailed information about their nutrients or ingredients. As the California compost industry continues to grow new legislation will certainly be introduced. I think it is vital that this legislation focus primarily on providing constant definitions of compost and fertilizer for companies to use. It is also important for new legislation to require minimum nutrient requirements to meet said definitions. These types of regulations would greatly help gardeners in California by providing them a structured system on which labels can be seen as reliable and factual indications of what is contained within.

Works Cited and Consulted

Composting in California

http://www.huffingtonpost.com/2012/03/07/california-composting_n_1327410.html

Biosolids: Definitions

<http://www.prwatch.org/files/BiosolidsCompostMemo-1.pdf>

Kelloggs Garden Products

http://www.sourcewatch.org/index.php?title=Kellogg_Garden_Products

Organics: Regulations

<http://utilitybranding.net/organics.php>

Compost & Mulches for North Coast Vineyards

<http://cdmresolver.worldcat.org/oclc/52376231/viewonline>

California Laws on Composting

<http://www.calrecycle.ca.gov/Laws/Regulations/title14/ch31a5.htm>

Oregon Laws on Composting

http://www.oregon.gov/ODA/pages/pub_regs_waste.aspx

Minnesota Laws on Composting

<http://www.mda.state.mn.us/news/publications/chemfert/compostlaws.pdf>

Cornell Composting Information

<http://cwmi.css.cornell.edu/compostfs2.pdf>

Composting Benefits

<http://compostingcouncil.org/sta-benefits/>

University of Minnesota, what lives in the soil

http://www.extension.umn.edu/distribution/cropsystems/components/7403_02.html