**Appendix 2. Survey of On-Farm Composting Practices and Intentions.**

**Survey Date: October 2012 through March 2013**

**Project Name:** OW10-329: Protecting Water Quality and Promoting Economic Efficiency at Agricultural Composting Facilities

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**Participants:** PI Nick Andrews, Oregon State University; Dan Sullivan Oregon State University; Linda Brewer, Oregon State University with growers Wali Via, John Eveland, David Brown, Brennan McMillen, Bob Wilt; and with other collaborators Jeff Gage, Will Gehr, and Peter Moon.

**Method:** In face-to-face or telephone interviews, 26 established agricultural composters responded to 43 IRB-approved survey items intended to describe their operations, feedstock, reasons for composting, practices to prevent or control leachate, and their attitudes about the regulatory environment within which they practice on-farm composting. This Appendix summarizes the survey. Appendix 1 is the survey instrument as administered.

**Who are they?**

The survey sample of composters was not random, and members were selected for their composting experience. There was great variance within the group as to types and volumes of feedstock processed. Fifty percent were required to have a DEQ permit; 12 percent were ODA monitored CAFOs, and 38 percent were not required to have a DEQ permit, on the basis of the volumes processed. Waste management, concern for soil organic matter levels and creation of a soil amendment are the primary reason members of this sample compost. Two of the 26 respondents indicated that composting is a way of life for them.

The main benefits these growers see from composting include mollification of the effect of clay content in soil and general soil quality, benefits to soil biological community, waste management, as well as weed control and reduction of animal disease.

 According to our sample, the three greatest expenses associated with the compost operation were labor costs, diesel and other fuel costs, and equipment such as windrow turners or front-end loaders. Composting is largely not a money making opportunity for these growers.

**What are their practices?**

Sixty-eight percent of the respondents indicated that theirs is a permanent composting site, and another 24 percent of them are on temporary sites.

Fifty-two percent of our respondents indicated that they compost using a front-end loader; 28 percent use a windrow turner; 17 percent manage compost as static aerated piles, and another 3 percent stack up low risk materials and do not manage them further. Some respondents indicated more than one method.

Sixty-one percent of the farms in our survey sample that were required to have a DEQ permit used a windrow turner. An additional 15 percent used static aerated piles. We hypothesize that this is so because these methods speed the composting process and facilitate meeting PFRP. Of those using a windrow turner, 15 percent also reported turning compost with a front end loader.

We asked survey respondents about their approach to preventing leachate formation. Twenty-six percent of the respondents indicated that they cover piles to prevent the formation of leachate, and another twenty-six percent indicated that they manipulate the shape of the pile to do so. Twenty-one percent indicated that they manage moisture content when building and managing compost piles so as to minimize leachate formation; another 14 percent compost under a roof. Other approaches were not to store mature compost in wet weather or not to compost in wet weather, each with less than ten or five percent, respectively.

When asked, survey respondents indicated the following approaches to manage leachate that forms: 37 percent indicated that leachate is allowed to infiltrate; 26 percent divert it to keep it out of water. Fourteen percent have graded their composting sites to direct water/leachate flow; and eleven percent re-incorporate leachate into working compost and divert leachate to a collection pond, respectively.

When asked about efforts to protect surface water, 31 percent indicated they have working filter strips in place, and another 24% do not observe significant leachate forming. Seventeen percent have sited their composting operations a significant distance from surface water (average distance greater than 0.3 miles), and another twelve and ten percent make use of bioswales and berms, respectively.

When asked about efforts to protect ground water from leachate, 37 percent indicated that they do not observe significant leachate developing; twenty-three compost on a concrete pad, seventeen percent indicate that a confining layer protects groundwater at their sites; thirteen percent divert leachate to a bioswale; and ten percent indicated that depth to groundwater is significant at their sites Composting challenges included regulatory problems; process control; especially optimal pile moisture management; the financial sustainability of the composting operation and availability of capital to invest in improved infrastructure and equipment are the benefit of long-term experience.

Survey participants seek information about composting first from the internet, followed by print resources (books, magazines) and the OSU Extension Service. References to other information sources fell off precipitously, though many alternatives were cited.

When asked what they would do with organic waste if it were not composted nineteen percent indicated they would let it lay where it was produced; fifteen percent indicated that they would incorporate it into the soil with an additional fifteen percent hauling it away, presumably to a municipal composting site or to a landfill. Other options included burning (12%). The one grass seed producer in our sample indicated that commercial straw bailers take much of the straw produced at their site.

**What are their attitudes about the regulation of agricultural composting?**

Our respondents are dedicated to the composting process, based on their responses to items asking for their degree of agreement with sentences such as, “If I were required to . . . I would stop composting.” In reference to such potential requirements as grading their composting site, building a concrete pad, or using tarps, they strongly disagreed or disagreed that such requirements would cause them to stop composting. Response rates at those levels were 54%, 50% and 54% respectively. This is in contrast to the rates of response “agree,” or “strongly agree,” which indicate that such a requirement *would* cause them to stop composting: 8%, 31%, and 12%.

Only the requirement to build a roof changed the responses, with 42% indicating that they would continue and 35% saying such a requirement would be sufficient to cause them to stop composting.