IAMP—Carbon Amendment with Compost (within NRCS Code 336)

Description: Compost is a carbon rich amendment that can be used to increase or maintain soil organic matter, enhance soil carbon stocks, improve soil aggregate stability, and improve habitat for soil organisms. Compost is generated through the aerobic microbial decomposition and stabilization of organic matter and has more labile carbon and a more active microbial community than biochar. A producer may prefer compost over biochar, which provides additional short-term benefits such as nutrient supply, enhancement of soil biological activities, and easily produce a sustainable way to recycle organic nutrients. IAMP adopts the NRCS definition of compost and requires that compost meets the US Composting Council's Seal of Testing Assurance Program (STA) or meets the criteria identified by NRCS conservation practice standard practices (Code 336) based on the Test Methods for the Examination of Composting and Compost (TMECC) recognized methods.

Benefits: Compost provides benefits from increased organic matter but also provides nutrients and can enhance microbial activity. It can improve soil structure and increase soil moisture retention, potentially minimizing nutrient leaching losses, and possibly increasing crop yields.

Soil Health: Compost improves soil heath through enhancements in water retention, soil structure, microbial activity, and aggregate stability.

Considerations for Success:

- Compost decomposes with time and depends on the type of carbon and nutrient composition.
- Not all compost is the same and therefore needs to be tested to understand its physical and chemical characteristics and how they may impact the soil when applied.
- Compost must meet NRCS requirements with evidence that the compost meets standards described in (Code 336)
- Do not apply compost when a phosphorus risk assessment indicates a high or very high risk for phosphorus transport. Consider manufactured compost products that are low in soluble phosphorous.

Options: See NRCS Soil Carbon Amendment (Code 336).

IAMP Preferences/Considerations: The IAMP project incentivizes practices that improve soil health and long-term agronomic productivity. It is in the best interest of IAMP to improve and maintain long-term sustainability of farming across Idaho and encourages buying compost from local sources which helps alleviate excessive nutrients from dairies and other animal operations and provide a rich source of carbon and nitrogen to cropland producers. IAMP encourages producers to document impacts of compost on productivity and quality of the commodities grown to enhance marketing opportunities.

Specific Details:
IAMP has several requirements to document the compost practice was implemented correctly and to document the effectiveness of the practice from the current cropping strategies employed in the field. Each of these requirements is described below.

1) Soil Sampling:

   a. Prior to application: Following Idaho state requirements a composite soil sample should be taken from the top 1 ft and analyzed for: pH, organic matter or organic carbon, texture, extractable phosphorus, potassium, calcium, sulfur, and magnesium, cation exchange capacity, and ammonium and nitrate. In addition, a second soil sample should be taken from the second foot and analyzed for ammonium and nitrate.
   b. 1 year after application: a composite soil sample should be taken from the top 1 ft and analyzed soil organic matter or organic carbon, extractable phosphorus, and pH.
2) Compost sampling: A compost sample will be sent in for analysis prior to application each year, see the IAMP Crop/Soil Sampling Matrix for information on where to send the sample. Specifically, the compost analysis must include the comprehensive list of attributes listed in the carbon amendment NRCS conservation practice standard (Code 336) by a certified lab.
3) Compost application rates must not exceed phosphorus crop removal rates. Use the following NRCS spreadsheet 590_ID_GD_Nutrient_Management-Spreadsheet.xlsx to analyze removal rates.
4) Do not use compost produced from:
   - Crop residues that could otherwise be left on the field to provide soil protection and improve soil organism habitat, or
   - Woody residue needed to sustain forest health and wildlife habitat referenced in NRCS CPS Forest Stand Improvement (Code 666).
5) Producer supplied field management information:
   a. Annual operation data including crop yield.

Soil Organic Matter and Biomass Sampling: Soil organic matter changes slowly and therefore sampling the same location once every 5 to 10 years is encouraged. For an overview of all suggested sampling protocols for each IAMP practice, see IAMP Crop/Soil Sampling Matrix.

Verification required prior to payment:

- Inspection by an implementing partner. Producers will provide a record of the compost application rate and timing, source of the compost, and specific characteristics of the compost provided by the supplier. Confirm that at least 3 ton/ac (6.7 Tonnes/ha) of compost was applied.
- Certification that compost source is approved and meets the practice standard as described above.
- Certify that a compost sample was submitted to a certified lab for analysis prior to application, including the attributes required under Code 336.
- Certify the compost was not produced from prohibited feedstocks (crop residues needed for soil protection or woody residue needed for forest health per Code 666).
- Certify a pre-application soil sample was taken as described (top foot analytes plus second-foot ammonium and nitrate).
- Certify that a phosphorus risk assessment did not indicate high or very high risk for phosphorus transport.
- Certify that the application rate did not exceed crop phosphorus removal.

Incentive Payments: $225/acre in the year of application, with a minimum required application of 3 tons/acre (6.7 Tonnes/ha). The per-acre payment increases by $30/ton of compost applied up to a maximum of 10 tons/ac (22 Tonnes/ha) of compost.

Stacking or Companion Practices: Compost amendments are compatible with other incentivized IAMP practices. Cover crops, Conservation crop rotation (>2 crops), Intercropping, No tillage from conventional, Reduced tillage from conventional, Nutrient management, and Prescribed grazing.

Sources:

NRCS Soil Carbon Amendment (Code 336)

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