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GUIDANCE ON SAMPLING AND TESTING SOIL RECEIVING COMPOST AND DIGESTATE

1. SOIL SAMPLING AREA

Soil sampling for PTEs shall be representative of the soil over the whole application area of compost and digestate, to a maximum of 50 hectares. These hectares shall be 'uniform', which means similar in terms of soil type, previous crops and application for manures, fertilizers and other waste.

The standard soil analysis (P, Mg, K and pH) must be determined on a field basis.

2. SOIL SAMPLING PROCEDURES

The soil sampling shall be done according to RB209 Guidance[1]. This means a minimum of 25 individual sub-samples (cores) for a 'uniform' area, thoroughly mixed before taking and sending one final sample for analysis by a suitable laboratory. The sample should be taken at a depth of 15-25 cm in accordance with RB209 Fertilizer Recommendations.

3. APPROVED LABORATORIES FOR SOIL TESTING

The soil potentially toxic element (PTE) tests shall be carried out by laboratories that use methods accredited by UKAS to ISO/IEC17025 for the soil testing and awarded MCerts (Monitoring and Certification Scheme) accreditation.

To find your nearest MCerts accredited laboratory, please visit http://www.ukas.org/testing/singlesearch.asp and type 'MCerts' into the search box and your postcode into the third box. Then click 'search'. When the search stage two information appears, please ensure that there is a green dot in the circle for 'Environmental samples – soil / sediments' and then click 'search'.

4. PARAMETERS TO BE COVERED BY THE TESTS

In order to match compost and digestate applications with crop nutrient requirements and other aspects of good agricultural practice, without any soil PTE concentration exceeding its corresponding limit set in the Sludge (Use in Agriculture) Regulations 1989, compost sample tests shall cover the following parameters:

- PTEs (lead, chromium, mercury, cadmium, copper, zinc and nickel)
- pH, and
- Nutrients (Olsen's P, available K and Mg).

Soil nitrogen content shall be sampled and tested in the circumstances recommended in RB209. In other circumstances, Soil Nitrogen Supply (SNS) shall be calculated if soil nitrogen content is not sampled and tested. Soil available nitrogen should be tested using KCl extractant.

[1] RB209 – Fertilizer Recommendations for Agricultural and Horticultural Crops
http://www.defra.gov.uk/FARM/environment/land-manage/nutrient/fert/rb209/

5. MINIMUM SOIL SAMPLING & TESTING REGIME

The Compost and Anaerobic Digestate Quality Protocols require that soil PTE analysis is carried out BEFORE the first application of compost or digestate. Soil analysis within the last 5 years can be used provided that no significant quantities of sludge, compost, manure, digestate or other PTE-containing materials have been added since the last soil sampling and analysis.

Quality composts and digestates should not be applied unless the soil has been sampled and analysed within the last 5 years.

The standard soil analysis should be re-determined every 3- 4 years, in accordance with RB209 Fertiliser Recommendations guidelines.

If any of the predicted soil PTE concentration reaches the 75% of the corresponding limit in the Sludge Code, **the soil shall be re-sampled and re-tested immediately after compost or digestate application to check its exact effects on the soil's PTE concentrations**. Even if one or more limits have not been reached in practice, caution should still be exercised when adding further compost or digestate to the same field.

If any of the predicted soil PTE level reaches 100 % of the corresponding limit in the Sludge Code, **compost or digestate shall not be applied before the soil is re-sampled and tested and the effects of the planned compost or digestate application rate are rechecked using the latest soil PTE results.** It may be necessary to reduce a planned compost or digestate application rate or even not spread compost or digestate on that soil at all.

Please take care to comply with the rule that no soil PTE level is allowed to exceed any limit set in Sludge (Use in Agriculture) Regulations 1989.