**END-OF-WASTE CRITERIA FOR BIODEGRADABLE WASTE SUBJECTED TO BIOLOGICAL TREATMENT**

**Joint Research Centre Final Report – Summary**

**Key points:**

* Only minor changes have been made to the draft Final Report circulated in Summer 2013
* Sewage sludge and MBT excluded from permitted input materials but manure included
* Scope is flexible which allows Member States to make their own decisions but will produce differences between Member States.
* Product quality requirements not changed substantially from 3rd draft.
* Stability approach is the same as in the third draft
* Weed seed measurement is introduced for digestate
* Measurement of PAHs is introduced for both compost and digestate
* Independent sampling requirements.
* Horizontal standards for analysis are still preferred. Where they are not in place, other methods are allowed.
* Sampling frequency has been defined on plant size.
* UK assurance schemes will be acceptable

**Scope**

Non- contaminated input materials from the separate collection of biowaste as well as from biodegradable residues from agriculture, (Including manure) forestry, fishery and horticulture or any such previously composted or digested material.

Specifically excludes sewage sludge and MBT. There are definitions of biodegradable and contamination.

There is apparently more flexibility in the input materials choices as the JRC have pursued the loose definition route rather than using EWC codes. This has previously caused regulatory issues in the UK.

**Scope of Input Materials**

Examples of input materials falling within scope (Allowable Input Sources)

* Parks, gardens, green spaces
* Households
* Caterers & Restaurants
* Food & Beverage retail premises
* Food & Beverage processing plants
* Horticulture
* Forestry
* Agriculture – straw, residues, silage, energy crops, catch crops, manure
* Fishery & aquaculture
* Animal By Products Category 2 & 3

Input materials falling outside scope (Non-Allowable Input Sources)

* MBT
* Sewage, paper, industrial sludges
* Contaminated waste
* Materials from sites with high pollution risks[[1]](#footnote-1)
* Non-biodegradable wastes
* Biodegradable wastes containing non-biodegradable materials[[2]](#footnote-2)
* Materials that negatively affect the digestion process – e.g. biocides, preservatives

The proposed approach relies on Member States to apply a strict scope to determine if a material is suitable for composting or digestion. Contaminated materials fall outside the scope. Contaminated materials are defined as having a level of physical, chemical or biological contamination that may cause difficulties in meeting the proposed EoW criteria.

The text puts the onus on the supplier and operator to ensure that wastes are suitable, to register inputs and provide data on packaging of the final product on inputs used. There is no apparent facility for Member States to keep individual approved lists but may be able to exclude specified materials.

**Product quality requirements**

|  |  |  |
| --- | --- | --- |
|  | Compost | Digestate |
| Minimum organic matter content | 15% | 15% |
| Minimum stability | 25 mmol O2/kg organic matter/ hr or minimum  Rottegrad III, IV or  V (self-heating test  temperature rise of  maximum 30 C  above ambient  temperature), | 50mmol O2/kg or organic acids content of a max 1500mg/l or RBP of max 0.25l/g volatile solids |
| Text starts by saying ‘unless an eligible alternative method has been specified by the competent authority the producer must demonstrate that at least one of the specified stability criteria have been met’.. There is no requirement for a Member State to select one test and stick to it which will allow operators to choose what they comply with the test of their choice leading to differing stability measurement within a Member State as well as between Member States. | | |
| No content of pathogens | 1000cfu/g E coli  No salmonella in 25g |  |
| Limited content of viable weeds | 2 viable weed seeds/litre | 2 viable weed seeds/litre |
| This is a higher value than existing for compost and would cause quality issues in the UK. We currently have no test of this type for digestate and no proven methodology in UK labs. | | |
| Limited content of macroscopic impurities | 0.5% on dry matter  weight for glass,  metal and plastics >  2mm to be  determined by the  dry sieving method |  |
| Limited PTE content | mg/kg (dry weight) | mg/kg (dry weight) |
| Zn  Cu  Ni  Cd  Pb  Hg  Cr  PAHs USEPA 16 | 600  200  50  1.5  120  1  100  6 | 600  200  50  1.5  120  1  100  6 |
| Zn limit higher than UK, Pb limit lower. Latter will cause issues for compost. All measured on a dry weight basis which will be an issue for low dry solids digestates. | | |
| New requirement on PAHs will cause concern in terms of testing costs and laboratory methodologies. | | |

**Sampling and analysis**

Testing within an external accredited independent QA framework (accredited laboratories)

CEN TC 400 Horizontal standards for sampling and analysis, or in their absence CEN TC 223 standards or in absence of both, ‘other internationally recognised test methods’ unless the competent authority prescribes a certain standard.

Probabilistic principle - (Frequency of sampling and testing: proposes ‘probabilistic sampling’ [and testing] - “the magnitude (severity) of the possible adverse consequence(s), and the likelihood (probability) of occurrence of each consequence”.)

**First (‘recognition’) year**

* up to 3000 tonnes input material per year requires one sample tested for every 1000 tonnes input,
* between 3000 and 20,000 tonnes input material per year, at least 4 samples required (one sample every season),
* above 20,000 tonnes input material per year the number of samples to be tested is calculated by: ‘amount of annual input material (in tonnes)/10000 tonne + 1’. Maximum of 12 analyses per year.

**Each year after recognition**

* Default minimum sampling & analysis frequency = Annual input/10000 +1.
* Unless opposed by the competent authority, ‘provided all analysis results in a given year respect the specified limit values from the end-of-waste product quality criteria’ in subsequent years only 50 % of samples must be taken by accredited external samplers and the remainder can be taken by trained plant personnel,
* Number of PAH16 samples tested = annual input (in tonnes)/50000 (if result not a whole number, roundup to next whole number). Minimum of 1 and maximum of 12. All samples for PAH16 testing must be taken by external independent samplers.

**‘Important changes’**

In case of important changes (> 20 %) in source or composition of input material the measurement frequency for inorganic & organic pollutants is reset to the measurement frequency of the first year.

**Treatment and processing techniques**

The proposal includes requirements for both end product testing and time temperature requirements for both ABP and non-ABP inputs. They appear flexible and Member States can implement their own (although there is no protocol for that).

**Reporting requirements**

Requirement for the use for horizontal standards persists in the hope of achieving similar reporting standard across Europe – no account is taken of the repeatablility data as before. There is a requirement to report copper and zinc as micronutrients where they exceed 100 and 400 mg/kg respectively.

**Quality management systems**

Current PAS100 and PAS110 scheme would comply with the requirements although additional guidance and updating of scheme rules will be re to reflect potential new requirements of the proposal. For example sampling frequency and methods should be covered for each plant in the QMS. Specific requirement for independent verification.

**Quality Assurance Procedures (Quality Management)**

Must have a Quality Management System in place which complies with quality assurance standards recognized by Member States or the Community (e.g. ISO 9001). Main areas to be covered:

* Control of inputs
* Monitoring and recording processes
* Procedures for monitoring product quality, sampling and analysis
* Third party inspection
* ‘Plant certification for declaration and labelling of input materials, the product characteristics, the product type and the producer’
* ‘Information on conformity with national regulations, quality assurance and end of waste standards and requirements of the competent authority’
* Review and improvement of the QMS
* Training

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1. Examples – landfills, medical waste, roadside grass etc. [↑](#footnote-ref-1)
2. Examples – non biodegradable sanitary products, veneers etc [↑](#footnote-ref-2)