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

**Joint Research Centre Final Draft – Summary by WRAP**

**Key points:**

* Sewage sludge and MBT excluded from permitted input materials but manure included
* Scope is flexible which has positive and negative effects. Positive in that it allows Member States to make their own decisions but potentially negative in that it will produce differences between Member States unless strict protocols for acceptance are laid out.
* Product quality requirements not changed substantially from 3rd draft. So the same elements will be an issue in the UK. Lead in compost; dry solids basis for measurement in digestates
* Stability approach is the same as in the third draft which will give different products in different Member States and no equivalence.
* Weed seed measurement is introduced for digestate
* Potentially expensive measurement of PAHs is introduced for both compost and digestate
* Independent sampling requirements will have a large economic impact at the start up phase of a business.
* Horizontal standards for analysis are still preferred. Where they are not in place, other methods are allowed. Given that we are aware of differences in operation of these methods between laboratories and that other methods are allowed for some parameters because horizontal standards haven’t been put in place, the likelihood of achieving uniform reportable data across the EU seems remote.
* Sampling frequency has been defined on plant size.
* UK assurance schemes will be acceptable

**Conclusion**

* The proposal contains a number of elements that will incur costs in the UK. It appears that independent sampling is the most significant of these followed by a requirement for PAH testing. Independent sampling costs in the first year of operation may deter operators from achieving end of waste status.
* The flexible nature of the proposal is to be welcomed but will mean that there will be differences between Member States.
* The UK has quality assurance schemes in place but these will be a major cost for Member States where they do not exist already.

**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 new 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**

Input materials falling within scope (Allowable Input Sources[[1]](#footnote-1))

* 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[[2]](#footnote-2))

* MBT
* Sewage, paper, industrial sludges
* Contaminated waste
* Materials from sites with high pollution risks[[3]](#footnote-3)
* Non-biodegradable wastes
* Biodegradable wastes containing non-biodegradable materials[[4]](#footnote-4)
* 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. There is no apparent facility for Member States to keep individual approved lists. Further clarification and guidance would be needed to ensure that there is a reasonable level of standardisation between Member States.

**Product quality requirements**

|  |  |  |
| --- | --- | --- |
|  | Compost | Digestate |
| Minimum organic matter content | 15% | 15% |
| Compost : need to check previous response and the impact assessment data. 15% on a dry solids basis for compost is ok but may be challenging in AD systems with high solids destruction | | |
| Minimum stability | 15 mmol O2/kg organic matter/ hr or 16 mg CO2/g organic matter/ day | 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’. This gives us the same issues as previously raised. None of the tests are equivalent. 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 limited content of macroscopic impurities |  | 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 PTE content |  |  |
|  | Zn – 600  *Cu – 200*  Ni – 50  Cd – 1.5  *Pb – 120*  *Hg – 1*  *Cr - 100* |  |
| 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. We have already highlighted this to the JRc and supplied date to support a move to fresh weight limit values. This area is being actively considered for the review of PAS110. | | |
| Organic pollutants | PAH USEPA 16 |  |
| New requirement that will cause concern in terms of testing costs and laboratory methodologies. | | |

**Sampling**

The major issue appears to be across the board requirement for external independent sampling in the recognition year for all parameters regardless of size of plant. This will form a major barrier to take up of EoW due to cost. External sampling is halved after first year but is still a requirement. Horizontal standards are still required with some flexibility where these are not in place. Request for proficiency testing of these methods is not accepted and there is no acknowledgement of variation between laboratories. Costs of sampling could be disputed by UK operators.

**Sampling & 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 material (if result not a whole number, round up to next whole number),
* 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’, (if result not a whole number, round up to next whole number). Max of 12 analyses per year.

**Each year after recognition**

* Default minimum sampling & analysis frequency = Annual input/10000 +1 (if result not a whole number, round up to next whole number).
* 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’:

**1)** in the next year 50 % of samples must be taken by accredited external samplers and the remainder can be taken by trained plant personnel, ‘as long as all measurement results during a year respect the limit values’.

**2)** 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

Full details in document.

19 August 2013

1. This table is only a synopsis – for details see Table 14 on page 151 [↑](#footnote-ref-1)
2. This table is only a synopsis – for details see Table 14 on page 151 [↑](#footnote-ref-2)
3. Examples – landfills, medical waste, roadside grass etc. [↑](#footnote-ref-3)
4. Examples – non biodegradable sanitary products, veneers etc [↑](#footnote-ref-4)