

PAS110 evaluation and ADQP review: request for data following workshops

A series of workshops was held in December to afford AD operators and other stakeholders an opportunity to share their experience with PAS110, the ADQP and the Additional Scheme Rules for Scotland (ASRS – that accommodate the different regulatory approach adopted in Scotland). The workshops generated extremely useful feedback, but it was flagged at the time that these were only the beginning of a process that could eventually see changes to both the ADQP and PAS110.

At the workshops it was noted that proposals on EU wide end-of-waste legislation for biowaste are being developed. Although the outcome of this process cannot be certain, it was agreed that any revisions to the PAS and ADQP should have these developments in mind¹. Following the workshops, the Environment Agency and WRAP would like to widen their call for evidence to inform any future change. Any responses to this call should be made to Rachel.Tipping@wrap.org.uk by Friday 3rd February, 2012.

ADQP: Additional inputs

The acceptable inputs under the ADQP are detailed in Appendix B².

Workshop feedback

No additional inputs were suggested during the workshops, but clarification on acceptability and definitions for some existing inputs was requested – specifically for glycerol, starch, wool dust and fibres, natural cotton fibres and dust, natural fibre clothing

If you would like to propose additional inputs, then please provide the following information:

- Details of the process which generates the input; and
- An assessment of the suitability of the input in an AD process, taking into account the biodegradability of the material and the presence of substances or other hazards that could impact upon the digestion process and/or affect the quality of the digestate. Such hazards could include pesticides and herbicide residues, as well as packing plant cleaning chemicals.

¹ If you would like more information on the EU proposals, please contact your trade association

² http://www.environment-agency.gov.uk/static/documents/Business/AD_Quality_Protocol_GEHO0610BSVD-E-E.pdf

ADQP: New markets

At present the acceptable markets within the ADQP are:

- Agriculture, forestry and soil/field-grown horticulture; and
- Land restoration (for the separated fibre fraction of digestate).

Workshop feedback

A number of additional markets were suggested during the workshops: domestic horticulture, professional and amenity horticulture (including uses such as turf, growing media and sports turf)

For the Regulators to allow these additional markets to be included in any amended ADQP, a range of information / data will need to be considered. If you would like these or other new markets to be considered, please provide the following information:

- Information to show that the form of digestate proposed is used for the intended purpose elsewhere (for example, Germany or the USA);
- Information demonstrating that this purpose would be acceptable in a UK context; and
- A clear demonstration that the characteristics of your digestate are the same as those supplied for these other purposes elsewhere.

If the proposed use for your digestate is entirely novel, then please provide information to demonstrate that it is safe to use in the market intended. Appropriate information could include:

- Microbiological, toxicological or other data on the material's characteristics; and
- Human health and environmental risk assessment (including consideration of any risks to livestock and other animals).

PAS110: RBP test

The Residual Biogas Potential (RBP) test is a measure of genuine gas potential and thus of how effectively a plant has digested the feedstock. This is the measure we have to ensure the stability of the digestate, to show that the input 'waste' materials have been recovered. The RBP was chosen as the preferred method for assessing stability of the digestate by the PAS Technical Working Group, which included industry and trade bodies. The current test limit was set by comparison of the stability demonstrated by digestate samples available at the time with a small number of livestock slurries that were considered acceptable for spreading (untreated) to agricultural land. The stability of digested sewage sludge was also considered, but this was found to be much more stable than either livestock slurries or digestates, and a compromise figure of 0.25 l / g of volatile solids (VS) was suggested and agreed with the industry prior to publication of the PAS in 2010.

Feedback (via the Biofertiliser Certification Scheme (BCS)) has indicated that some facilities are experiencing difficulty with achieving the required digestate stability. It seems that this particularly relates to plants accepting high proportions of food waste. At the same time, other plants accepting similar inputs are (apparently) achieving the required stability with ease.

Workshop feedback

A wide range of feedback was provided on the RBP test during the workshops. WRAP is currently exploring the possibility of procuring a new project to gather, consider and process existing RBP data in response to this feedback. The test was originally designed to be applied to digestate samples taken from storage, but this highlighted a mismatch with the current PAS110 sampling requirements, which are based on samples taken 'at point of despatch'. During quiet periods, digestate might be taken from storage, but during the summer, PAS110 allows operators to sample digestates immediately after they have completed the active digestion phase(s). WRAP would like to examine this apparent mismatch in more detail – and this could include reconsidering the current RBP test limit to accommodate actual sampling practice. WRAP is also interested in examining the repeatability of the test, and whether it affords the necessary process feedback (demonstrating that full recovery of the feedstock material has taken place) and environmental protection (for example, by demonstrating that VFA levels in PAS110-compliant digestates do not damage soil ecosystems).

Until this project is fully scoped, WRAP feels that it is inappropriate to request specific information on the current RBP test. However, we would welcome your comments on these two aspects: 1. Whether you are aware of other tests that could demonstrate full recovery of input materials via anaerobic digestion processes; 2. Whether you are aware of any (simple, affordable) tests that could be used to demonstrate lack of environmental harm as a result of PAS110-compliant digestate use.

PAS110: Pasteurisation

Work (currently with the Food Standards Agency's technical committees for scrutiny) has highlighted the importance of pasteurisation for digestate biosecurity – even where no animal by-products are present in the input materials. Plant pathogens such as clubroot (*Plasmodiophora brassicae*) are not thought to be fully inactivated by MAD (mesophilic anaerobic digestion) alone, and a pasteurisation phase is recommended to minimise risks from such organisms. The current pasteurisation requirements are lifted across from the Animal By-Products Regulations, and only afford three possible time / temperature / particle size combinations.

Workshop feedback

During the December workshops, it was recognised that pasteurisation afforded a clear pathogen control barrier that provided confidence to users of digestate (and particularly to food chain stakeholders such as farm assurance schemes). However, it was also recognised that the current pasteurisation requirements are not particularly flexible, and that it should be possible to demonstrate sanitisation of pathogens occurring as part of the digestion process itself.

Two solutions seem to be possible: 1. That the range of acceptable time / temperature / particle size parameters be extended through examination of the current scientific literature in combination with risk assessment; 2. That plants be allowed to demonstrate that their own intended time / temperature / particle size approach is effective by determining the impact of their process on a suitable indicator organism.

WRAP is currently working with FERA (Food and Environment Research Agency) on a project examining the impacts of pre, post and no pasteurisation (combined with MAD and digestate storage) on a range of common plant pathogens. We are considering whether the scope of this project could be extended to allow us to develop either of the 'alternative sanitisation approaches' outlined above, but we are aware of significant logistical difficulties in (for example) adding indicator organisms to an AD process and recovering them at the end to determine the process impact.

We would therefore like to ask AD operators whether they are aware of existing commercial approaches to demonstrate the effectiveness of AD processes through monitoring of indicator pathogens, and how those indicator pathogens were selected.

Other changes

The areas listed above are the main areas which have previously been brought to the attention of WRAP and the Environment Agency. At the workshops the Environment Agency also advised it would be reviewing record keeping requirements for end-users of digestate. We do not anticipate making major changes to other aspects of the PAS or ADQP. If there are other areas of either document that could benefit from change please provide a clear statement of your suggested change, together with an explanation of the need and evidence that supports your proposal.

Any responses to this call for evidence should be made to Rachel.Tipping@wrap.org.uk by Friday 3rd February, 2012.