ADVISORY COMMITTEE ON ANIMAL FEEDINGSTUFFS

60th Meeting of ACAF on 16 January 2013

Information Paper

Traces of packaging material in feed derived from former foodstuffs

Secretariat: January 2013

Traces of packaging material in feed derived from former foodstuffs

Purpose

1. This paper seeks to inform the Committee of recent developments concerning the presence and determination of adventitious traces of packaging material in feed derived from former foods.

Background

2. Certain surplus food items such as bread and bakery wares are used as feed materials. Both the United Kingdom Government and the European Union encourage the *bona fide* use of such valuable commodities in feed in order to help reduce waste and to minimise adverse impacts on the environment.

Legislation

3. Annex III of Regulation (EC) No. 767/2009 on the marketing and use of feed classes 'packaging from the use of products from the agri-food industry, and parts thereof' as being prohibited for animal nutrition purposes. This prohibition has been interpreted as being a ban on the presence of residues of food packaging material in animal feed, as well as the use of the packaging material *per se*. The European Commission's Food and Veterinary Office (FVO) had previously noted the presence of food packaging in feed during missions in Great Britain (2011) and in Northern Ireland (2012).

Tolerances for traces of packaging material

4. Feed processors routinely remove the packaging from surplus food mechanically. While this removes most of the packaging, small amounts can remain in the feed material. European Union Member States generally agree that a zero tolerance for these traces is neither practical, nor proportionate to the risk. However, according to the interpretation in paragraph 3, their presence might constitute a disconformity with feed legislation. However, not all authorities agree on this point; the Netherlands and German authorities have undertaken their own risk assessments and both now tolerate the presence of packaging up to a level of 0.15%.

5. The stance from the UK Food Standards Agency was that the issue should be resolved at European Union level, following suitable advice from the European Food Safety Authority (EFSA). However, EFSA has not yet accepted a mandate from the European Commission to undertake an assessment of the risk, and there seems to be

little likelihood of agreement in the short term. Consequently the Agency has organised meetings with stakeholders (feed producers, UK enforcement officials, feed assurance inspectors and the food industry) to agree a UK approach. At the most recent meeting held on 26 October 2012 it was agreed that, in the absence of any guidance from the European Union, the UK would adopt a tolerance of 0.15% in line with Germany and the Netherlands (Annex I). However, this stance would be subject to revision once advice from EFSA is available. The operation and enforcement of the *de facto* tolerance will be reviewed by the Food Standards Agency.

Methods to determine levels of packaging in feed

6. From discussions with business stakeholders, it emerged that several had developed their own methods to determine levels of traces of food packaging. While there were some variations, these all relied on an operator taking appropriate samples, followed by the visual identification and manual isolation of packaging material. So far only one group - van Raamsdonk *et al* of the RIKILT Institute – has had its method accredited.

http://www.rikilt.wur.nl/NR/rdonlyres/BDEEDD31-F58C-47EB-A0AA-23CB9956CE18/143801/R2011003.pdf

It was decided that the UK would not insist on feed business operators using a specific method. However, a short 'methodology' document (Annex II) was agreed; this sets out essential and some optional aspects that need to be addressed when levels of packaging are being determined in samples of feed derived from surplus food. This methodology will be used by both processors and feed assurance scheme inspectors.

Future developments

7. The ACAF Secretariat will ensure that the Committee is kept informed of significant developments in this area.

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ANNEX I

MEETING TO DISCUSS METHODOLIGIES FOR THE MEASUREMENT OF ADVENTITIOUS PACKAGING MATERIALS IN FEED -- 26 OCTOBER 2012

Present: Keith Millar (FSA, Animal Feed and Animal By-Products -- Chairman)

Tim Franck (FSA, Animal Feed and Animal By-Products)

Ray Smith (FSA, Animal Feed and Animal By-Products)

Joseph Nicholas (FSA, Animal Feed and Animal By-Products)

Mandy Jumnoodoo (FSA, Animal Feed and Animal By-Products)

Toni Gray (FSA, Animal Feed and Animal By-Products)

Ron Cheesman (FSA, Enforcement and Local Authority Delivery)

David Mackley (AC Shropshire)

George Perrott (Agricultural Industries Confederation)

Richard Tucker (A Tucker & Son Ltd)

Sally Tucker (A Tucker & Son Ltd)

Keneth Chinyama (Food and Drink Federation)

Stuart Green (Hillcrest Midlands)

Ian Leivers (Hillcrest Midlands)

Martin Vardy (Hillcrest Midlands)

Peter Fairbairn (Leafield Feeds)

Frank Thompson (Leafield Feeds)

Mike Evans (Nutrafeed)

Angela Walker (Nutrafeed)

Martin Jowett (Product Authentication Inspectorate)

Robin Crawshaw (RC Feed)

Paul Featherstone (SugaRich)

Robert Fry (Waste Bread Services)

Mike Dawson (Welham Estates)

John Rigby (W Rigby)

David Sanderson (W Rigby)

Teleconference:

Jacqui Angus (FSA Scotland)

Lorna McIvor (FSA Scotland)

Claire Moni (FSA Scotland)

Videoconference:

Hilary Neathey (FSA Wales)

Stephen Nixon (Department of Agriculture and Rural Development NI)

1. Keith Millar welcomed everyone to the meeting, which had been called to discuss the latest developments in respect of the issue of adventitious packaging material in former foodstuffs sent for use in animal feed.

Background

2. The Chairman reminded the meeting that the EU's existing feed law implies that packaging material be totally eliminated (a zero tolerance), which is technically unachievable; the prohibition had in any case been formulated to address the deliberate adulteration of feed with packaging, so was inappropriate for adventitious contamination. He had been pressing the Commission to consider a change in the law, but was now minded to introduce a *de facto* tolerance for the presence of packaging material.

3. The Chairman pointed out that both Germany and the Netherlands had adopted *de facto* tolerances for such material; that the FVO auditors who had visited the UK in November 2011 had remarked on the absence of a similar tolerance in the UK; and that the FVO auditors who had visited Northern Ireland in May 2012 appeared to have taken a more liberal view and not issued a formal recommendation for improvement.

Stephen Nixon noted that, as far as the Northern Ireland audit was concerned, all parties were agreed that adventitious packaging material was not the main risk to feed.

Discussion of Sampling Methodologies

4. The Chair noted that whatever tolerance level was decided upon, a robust methodology would be necessary to ensure consistent measurement of packaging material.

5. Robin Crawshaw spoke to the methodology he uses to satisfy the Feed Materials Assurance Scheme (FEMAS), which requires a weekly measurement to be made. He acknowledged that a shovel is a crude sampling instrument, but it negates the potential problem of selecting (or avoiding) a sample which visibly contains more packaging and thus ensures a more typical view of the total consignment. Experience has shown that, following separation of the residual packaging from the sample, air-drying for 4 days is necessary to evaporate the water that has been absorbed from the food and allow any remaining food particles to be brushed off prior to weighing. Without this step, the weight of the packaging could be overstated by 60%.

6. David Mackley spoke to the method used by A C Shropshire, which does not use air-drying -- his procedure has been developed to allow it to be implemented by feed business operators with minimal investment in new plant and machinery. He noted that a bucket is as crude an implement as a shovel, but again negates the potential problem of selecting a sample to give a particular result.

7. Paul Featherstone spoke to the methodology used by Sugarich, noting that both it and the previous two methods are simple to implement. Like A C Shropshire, he does not use air-drying since, in his view, by the time an analytical result is available the material will have been fed and the data will usually be of only academic interest.

8. The Chairman confirmed with all three individuals that details of their sampling methodology could be made available to the European Commission.

Agency View of Sampling Methodologies

9. Ray Smith spoke to his draft paper encompassing the above three methods and the RIKILT system used by the Dutch. It was noted that RIKILT uses both a smaller sample and smaller sieves than the other three methods. The Chairman asked for drafting suggestions on Ray Smith's paper from all attendees, to feed into the finalised paper.

10. It was noted that the paper did not cover liquid products although these could also contain packaging materials (e.g. parts of yoghurt containers). In general, recyclers who deal with liquid products take a 1 litre sample and pour it through a fine sieve to identify any packaging material present. Recyclers of liquid feeds agreed to provide some text covering the determination of the quantities of such material.

11. It was noted that defatting, as suggested by RIKILT, would involve more effort on the part of feed business operators, would require appropriate laboratory facilities, and may not be quantitatively significant for all products (e.g. bakery products largely based on bread have a low fat content). It was suggested that defatting may be a more appropriate procedure for a statutory body to adopt, to ensure that it was provided with a more accurate assessment of packaging content.

12. The pet food industry was reported to have introduced a cleaning process to vacuum away any plastic wrapping material left on material before it went into storage bins. However, adventitious packaging material was not an issue for the pet food industry because of the nature of the material its uses.

Sample Sizes and Tolerance Thresholds

13. It was noted that the size of the sample to be analysed could depend on the accuracy of the balance used -- the greater the accuracy, then the smaller the sample to be weighed could be and hence the smaller the sample of the product from which it could be taken. It was noted that 1 kg might be too small, but that 10 kg would be too large; that it might be appropriate to arrive at the final sample through taking incremental samples rather than one large one; and also that it might be necessary to work with a range of sample sizes depending on the different types of former foodstuffs involved.

14. The Chairman suggested that a tolerance threshold of 0.15% be adopted, as was already the case in Germany and The Netherlands. This was agreed after a brief discussion of possible variations to take account of the generally heavier packaging of liquid products.

15. It was queried whether there should also be adopted a maximum upper limit for the size of a piece of packaging residue, to cover potential risks, but noted that the actual risk would depend on the nature of the residue rather than its size. It was further noted that considerations of risk had delayed EFSA's and the European Commission's consideration of the tolerance issue.

"Enforcement" of the Tolerance

16. PAI noted that it would be responsible for enforcement of the tolerance through FEMAS, but also that it would wish to see a sample being taken as part of an audit to be confident of the resulting analysis and that calibration of scales would be essential to ensure meaningful results. A discussion of whether to adopt an "action threshold" lower than the suggested tolerance ensued, but it was agreed not to formally adopt such an idea.

17. The Chairman indicated that he would like to accompany the PAI on an audit at a future date to see the tolerance in action.

18. Further discussion of defatting ensued; it was agreed that reference to this would be removed from Ray Smith's paper, but that Stephen Nixon of DARD NI could pursue discussions of this with Ray Smith and Ron Cheesman.

19. AIC expressed its thanks to the Agency for its efforts in this area, which should ensure consistency and security for all sectors.

20. FDF expressed its support for the adoption of a tolerance, which should both help food business operators sending former foodstuffs into the feed chain and reduce the quantities of former foodstuffs going to landfill.

Next Steps

21. These minutes of the meeting will be circulated to all attendees as soon as possible, as well as to those who were invited but could not attend. The aim is to present the finalised minutes, and the finalised version of Ray Smith's paper, to the FVO auditors when they visit in mid-November, to demonstrate progress on the issue. Copies of the various sampling methodologies will also be attached to the finalised minutes.

Joseph Nicholas

Animal Feed and Animal By-Products Branch Food

Food Standards Agency

November 2012

ANNEX II

Methodology to determine levels of packaging in feed materials derived from former foodstuffs – a summary.

Introduction

1. It is necessary to have reliable methods to determine levels of food packaging in recycled food products that are being used as animal feed in order that adherence to any tolerance agreed for packaging can be checked by the feed business operator, feed assurance auditor and the enforcement officer.

Current analytical methods

2. No analytical methods that use automated instruments to provide levels of packaging are available. The methods that have been developed and used to date are subjective – i.e. they rely on operators to sample the product and to select and remove traces of packaging from samples. It is essential to employ reliable, competent people who are suitably trained to perform these operations.

3. The only method that has been validated is that from RIKILT (van Raamsdonk *et al*; 'Examination of packaging materials in bakery products - A validated method for detection and quantification'; Rikilt Report 2012 - 007).

Types of materials to be determined

4. Paper, certain plastics, foil and cardboard may be present. Metal clips, screws, staples etc. should not be considered to be packaging for the purposes of the analysis; if present the hazards need to be assessed. Types and levels of packaging may vary according to the former food used to manufacture the feed.

Sampling of feed materials

5. Samples taken should be representative of the batch. Incremental samples from different parts of the batch or consignment should be taken, combined and mixed to obtain a representative sample. A portion of the mixed sample can then be analysed. RIKILT uses a sample size of 0.5 kg. However, this should be considered a minimum size; most operators appear to use larger or multiple samples in order to ensure that they are representative of the product.

Sample sieving (optional)

6. The sample can be sieved (RIKILT used sieve sizes from 0.5 - 4.75 mm) and the feed packaging level determined for each fraction. The weight of each sub-sample should be determined before analysis. Samples may be pre-dried.

Removal of packaging material and reporting of results

7. The manual removal of packaging material from samples and sub-samples should be performed in a suitable area that has:

- an absence of drafts and significant vibration;
- suitable lighting;
- a clean, dry flat surface on which to work;
- appropriate sieves (optional)
- containers or bags for samples;
- suitable magnifying equipment (optional);
- forceps, tweezers etc.;
- an appropriate, accurate, calibrated balance(s) (scales); and
- facilities for the removal of moisture (optional).

8. Moisture (i.e. water) can be removed by drying samples (e.g. at 60^0C for 4 hours). This may assist in the removal of any feed particles adhering to packaging. Where a business decides not to undertake this procedure, it must accept the result of an analysis and not infer that a lower level would have been determined if had been undertaken. Where the procedure is used, a business can make an interim assessment of the level to help prevent further poor manufacturing performance.

9. The packaging material in each sample should be identified by the operator and be separated out and weighed. The percentage of packaging material present in the sample should then be calculated. Different types of packaging may be identified, separated and weighed, with levels being reported for the various types.

10. If the weight of a sample taken (z) is 5 kg and the weight of the packaging materials removed from it (y) is 5 g, the percentage of packaging material found is:

(y/z) *x*100% i.e. (5/5000) *x*100% = 0.1%

11. Operators should measure the sizes of the larger pieces of packaging and make an assessment as to whether these represent a physical hazard to livestock.

Wet feed

12. Similar principles apply for wet products (e.g. milk). A representative sample of known weight can be passed through a fine sieve (e.g. 1 mm). The sediment remaining on the sieve should be rinsed with water and the packaging residues identified and removed into a suitable pre-weighed container. The material so collected should be weighed once dry and the percentage packaging material can be calculated using the formula outlined in paragraph 10. above.

AFAB

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