



**PRACTICAL SAMPLING GUIDANCE**  
**for FOOD STANDARDS and**  
**FEEDING STUFFS**

**Part 3: Feeding Stuffs Sampling**

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### **1 Introduction**

Sampling for non-medicated feeding stuffs in Great Britain is the responsibility of local authorities (mainly Trading Standard Officers), with the Department Of Agriculture and Rural Development (DARD) carrying out this function in Northern Ireland.

The Feeding Stuffs Regulations 2000<sup>(1)</sup>, as amended, are made under the Agriculture Act 1970<sup>(2)</sup>, as amended and form the primary controls relating to the composition, labelling and marketing of feeding stuffs and feed materials (including pet foods). They implement the provisions of a large number of EC Directives and Decisions as well as providing for the enforcement of Council Regulations. The Feeding Stuffs Regulations extend in most part to England only, but parallel legislation exists for Scotland, Wales and Northern Ireland.

It is the Feeding Stuffs (Enforcement) Regulations 1999<sup>(3)</sup> as amended, which set out the powers, role and obligations of inspectors, as well as the powers and duties of the competent authority, in relation to animal feeding stuffs.

The Feeding Stuffs (Sampling and Analysis) Regulations 1999<sup>(4)</sup>, as amended, implement the provisions of a large number of EC Directives and set out detailed standards for sampling procedures and methods of analysis for the official control of feeding stuffs. These include:

- the size of sample to be taken;
- the manner in which samples should be taken, prepared, marked, sealed and fastened;
- the manner in which a sample should be sent for analysis;
- specific methods of analysis;
- Official Journal of the EC references to statutory Community Methods of Analysis for specified substances;

There is a requirement that the oil content of a feeding stuff must be determined within 3 weeks of an official sample being taken, therefore it is crucial that the sample is sent for analysis promptly.

The Regulations also stipulate the form in which the 'Certificate of Analysis of Feeding Stuff' should be presented.

### 2 Matters To Consider Before Going Sampling

#### 2.1 What powers do officers have in relation to feeding stuffs?

The Feeding Stuffs (Enforcement) Regulations 1999, as amended, set out the powers, role and obligations of inspectors, as well as the powers and duties of the competent authority, in relation to animal feeding stuffs. These Regulations set out the checks that must be made at UK ports of entry before feeding stuffs can be put into circulation and gives authorities their right of access to products and records and powers of inspection, sampling and seizure.

#### 2.2 Is the person taking the feedingstuff sample suitably qualified?

The Agriculture Act 1970, as amended, requires enforcement authorities to appoint inspectors to enforce Part IV of the Act, which relates to fertilisers and feeding stuffs.

#### 2.3 What is the prescribed amount for the 'sampled portion'?

The Agriculture Act 1970, as amended, defines the term 'sampled portion' (see section 4) and it is the Feeding Stuffs (Sampling and Analysis) Regulations 1999, as amended, that prescribe the following amounts of material that must be taken in different circumstances for the purposes of this definition:

<b>MATERIAL</b>	<b>PRESCRIBED AMOUNT TO BE TAKEN</b>
Solid feeding stuff in packages	The quantity of material present or 5 tonnes, whichever is the less.
Solid feeding stuff in bulk containers	(a) The contents of the lowest number of containers which together hold not less than 5 tonnes; or (b) if all the containers together hold less than 5 tonnes, or if all the feeding stuff is in one container, the quantity of material present; or (c) if any container holds not less than 5 tonnes, the

	content of any such container.
Solid feeding stuff which is loose in heaps or bays	<p>(a) the contents of the lowest number of heaps or bays which together contain not less than 5 tonnes; or</p> <p>(b) if all the heaps or bays together contain less than 5 tonnes, or if all the feeding stuff is in one heap or bay, the quantity of material present; or</p> <p>(c) if any heap or bay contains not less than 5 tonnes, the content of any such heap or bay.</p>
Liquid or semi-liquid feeding stuff in containers	<p>(a) the contents of the lowest number of containers which together hold not less than 5,000 litres; or</p> <p>(b) if all the containers together hold less than 5,000 litres, or if all the feeding stuff is in one container, the quantity of material present; or</p> <p>(c) if any container holds not less than 5,000 litres, the content of any such container</p>

## 2.4 What are the general considerations relating to sampling?

The following definitions apply to certain terms used in this section:

<b><u>Term</u></b>	<b><u>Meaning</u></b>
"sampled portion"	a quantity of a material constituting a unit and having characteristics presumed to be uniform
"incremental sample"	a quantity taken from one point in the sampled portion
"aggregate sample"	an aggregate of incremental samples taken from the same sampled portion
"reduced sample"	a representative part of the aggregate sample obtained from the latter by a process of reduction
"final sample"	a representative part of the reduced sample or, where no intermediate reduction is required, of the aggregate sample
"unit"	has the same meaning as in the EC Sampling Directive <sup>(5)</sup>

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In the case of feeding stuffs in packages or containers (except where section 68(2)(b) of the Act on small quantities applies) only unopened packages or containers, which appear to be the original packages or containers of the feeding stuff, must be selected for sampling.

The sample must be taken and prepared as quickly as possible as some feeding stuffs will deteriorate quickly when the container has been opened. All necessary precautions must be taken to ensure that the sample remains representative of the sampled portion. Instruments, surfaces and containers used in sampling must be clean and dry.

The integrity of the sample is paramount and therefore samples must not be drawn from any part of the sample portion that appears to be damaged and where any appreciable portion of the feeding stuff appears to be mouldy, or is otherwise apparently unsuitable for feeding purposes, separate samples must be drawn of the unsuitable portion and of the residue of the feeding stuff respectively. These must then be treated as separate sampled portions.

When samples are to be taken in accordance with the provisions of section 76(7) of the Act, inspectors must satisfy themselves that the conditions in which the material concerned is stored will not have caused undue deterioration of it and that it appears not to have been contaminated by any other material. These provisions, however, will not apply in respect of any feeding stuff purchased for the purpose of resale in the course of trade.

### **2.5 What sampling apparatus is required?**

Sampling apparatus must comprise of materials which cannot contaminate the feeding stuff that is to be sampled.

Unless there is a good reason to the contrary, the sampling apparatus for solid feeding stuffs should be taken from among the following items:

- (a) a flat-bottomed shovel with vertical sides, usually stainless steel or non-ferrous metal;
- No further specifications are made by the regulations but the edges of the shovel should prevent spillage and retain a fair representation of the feedingstuff being sampled.
- (b) a sampling spear with dimensions appropriate to the characteristics of the sampled portion in all respects, including dimensions of the container and particle size of the feeding stuff;
- No further specifications are made by the regulations but an ad hoc Working Group set up by the then Ministry of Agriculture Fisheries and Food in 1981 to investigate the difficulties associated with bulk sampling made recommendations concerning the suitable dimensions of spears [reference to be provided].
  - Sampling spears should not be used if the material is in a package or container containing less than 50 kg and, prior to taking the sample, the manufacturer objects to the use of such a device on the ground that the material is unsuitable.
- (c) mechanical apparatus which, if used for the purpose of sampling a feeding stuff being physically moved at the time the sample is taken (e.g. loading or unloading), must be capable of taking samples right across the flow of the product;
- The device therefore must be capable of taking a sweep through a complete cross-section of the material, or must be wide enough to accept the entire cross-section.
- (d) apparatus designed to divide the sample into approximately equal parts for taking incremental samples, and for the preparation of reduced and final samples.

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- The regulations do not specify the particular type of apparatus that must be employed but the riffle and rotary sample divider would be suitable, as well as the Tyler sample divider (that sub-divides in itself to give one sample at the end).

### **3 Procedures to be Used on Site**

#### **3.1 How must samples be taken, prepared and packaged?**

Samples must be taken, prepared and packaged in accordance with the requirements specified, in the Annex to the EC Sampling Directive. Any sample taken in accordance with these provisions will be considered as representative of the sampled portion. Failure to follow these detailed instructions may invalidate the results of any subsequent analysis.

The Directive contains the requirements (references to the relevant section of the Sampling Directive are given in the first column) in the table overleaf.

Officers will also need to consider the health and safety implications when sampling feeding stuffs, particularly from bulk containers and at feed mills.

The Food Standards Agency is aware of the difficulties, particularly the health and safety implications, experienced by local authority officers when sampling large consignments or large volumes of feeding stuffs generally. The Agency is taking these issues forward with the European Commission.

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### 3.2 Quantitative Requirements

Please see the Feeding Stuffs (Sampling and Analysis) Regulations 1999<sup>(4)</sup> and the Directive 76/371/EEC<sup>(5)</sup> for further information on these requirements.

5.A.	<b>In relation to the control of substances or products uniformly distributed throughout the feeding stuff</b>	
5.A.1	<i>Sampled portion</i>	
	The size of the sampled portion must be such that each of its constituent parts can be sampled.	
5.A.2	<i>Incremental samples</i>	
5.A.2.1	Loose feeding stuffs:	Minimum number of incremental samples:
5.A.2.1.1.	Sampled portions not exceeding 2.5 metric tons	Seven
5.A.2.1.2.	Sampled portions exceeding 2.5 metric tons	√20 times the number of metric tons making up the sampled portion <sup>(a)</sup> , up to a maximum of 40 incremental samples
5.A.2.2.	Packaged feeding stuffs:	Minimum number of packages to be sampled <sup>(b)</sup>
5.A.2.2.1	Packages of more than one kg:	
5.A.2.2.1.1.	Sampled portions of one to four packages	All packages
5.A.2.2.1.2.	Sampled portions of five to 16 packages	Four
5.A.2.2.1.3.	Sampled portions of more than 16 packages	√Number of packages making up the sampled portion <sup>(a)</sup> , up to a maximum of 20 packages
5.A.2.2.2.	Packages not exceeding 1 kg	Four
5.A.2.3	Liquid or semi-liquid feeding stuffs:	Minimum number of containers to be sampled <sup>(b)</sup>
5.A.2.3.1.	Containers of more than one litre:	
5.A.2.3.1.1.	Sampled portions of one to four containers	All containers
5.A.2.3.1.2.	Sampled portions of five to 16 containers	Four
5.A.2.3.1.3.	Sampled portions of more than 16 containers	√Number of containers making up the sampled portion <sup>(a)</sup> , up to a maximum of 20 containers
5.A.2.3.2.	Containers not exceeding one litre	Four
5.A.2.4.	Feed blocks and mineral licks	Minimum number of blocks or licks to be sampled <sup>(b)</sup>
		One block or lick per sampled portion of 25

		units, up to a maximum of four blocks or licks
5.A.3.	<i>Aggregate sample</i>	
	A single aggregate sample per sampled portion is required. The total amount in the incremental samples making up the aggregate sample must be not less than the following:	
5.A.3.1.	Loose feeding stuffs	4 kg
5.A.3.2.	Packaged feeding stuffs:	
5.A.3.2.1.	Packages of more than 1 kg	4 kg
5.A.3.2.2.	Packages not exceeding 1 kg	Weight of the contents of four original packages
5.A.3.3.	Liquid or semi-liquid feeding stuffs:	
5.A.3.3.1.	Containers of more than one litre	Four litres
5.A.3.3.2.	Containers not exceeding one litre	Volume of the contents of four original containers
5.A.3.4.	Feed blocks or mineral licks:	
5.A.3.4.1.	Each weighing more than 1 kg	4 kg
5.A.3.4.2.	Each weighing not more than 1 kg	Weight of four original blocks or licks
5.A.4.	<i>Final samples</i>	
	The aggregate sample gives the final samples on reduction when necessary. Analysis of at least one final sample is required. The amount in the final sample for analysis must be not less than the following:	
	Solid feeding stuffs	500 g
	Liquid or semi-liquid feeding stuffs	500 ml

5.B.	<b>In relation to the control of undesirable substances or products likely to be distributed non-uniformly throughout the feeding stuffs, such as aflatoxins, rye ergot, castor-oil plant and crotalaria in straight feeding stuffs<sup>(c)</sup></b>	
5.B.1.	<i>Sampled portion:</i> see 5.A.1.	
5.B.2.	<i>Incremental samples</i>	
5.B.2.1.	Loose feeding stuffs: see 5.A.2.1.	
5.B.2.2.	Packaged feeding stuffs:	Minimum number of packages to be sampled
5.B.2.2.1.	Sampled portions consisting of one to four packages	All packages
5.B.2.2.2.	Sampled portions consisting of five to 16 packages	Four
5.B.2.2.3.	Sampled portions consisting of more than 16 packages	✓ Number of packages making up the sampled portion <sup>(a)</sup> , up to a maximum of 40

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		packages
5.B.3.	<i>Aggregate samples</i>	
	The number of aggregate samples will vary with the size of the sampled portion. The minimum number of aggregate samples per sampled portion is given below. The total weight of the incremental samples making up each aggregate sample must be not less than 4kg.	
5.B.3.1.	Loose feeding stuffs	
	Size of the sampled portion in metric tons:	Minimum number of aggregate samples per portion:
	Up to 1 More than 1 and up to 10 More than 10 and up to 40 More than 40	1 2 3 4
5.B.3.2.	Packaged feeding stuffs size of the sampled portion in number of packages:	Minimum number of aggregate samples per sampled portion:
	1 to 16 17 to 200 210 to 800 more than 800	1 2 3 4
5.B.4.	<i>Final samples</i>	
	Each aggregate sample gives the final samples on reduction. Analysis of at least one final sample <i>per aggregate sample</i> is required. The weight of the final sample for analysis may not be less than 500g.	

**NOTES:**

(a) Where the number obtained is a fraction, it should be rounded up to the next whole number.

(b) For packages or containers whose contents do not exceed 1kg or one litre and for blocks or licks weighing not more than 1kg each, an incremental sample must be the contents of one original package or container, one block or one lick.

(c) The methods provided for in 5.A. are for use in the control of aflatoxins, rye, castor-oil plant and crotalaria in complete and supplementary feeding stuffs.

### 3.3 Instructions For Taking, Preparing And Packaging The Samples

6.2.	<b>Incremental samples</b>
6.2.A.	<i>In relation to the control of substances or products uniformly distributed throughout the feedingstuff</i>
	Incremental samples must be taken <i>at random throughout the whole sampled portion</i> and they must be of approximately equal sizes.
6.2.A.1.	Loose feeding stuffs
	A notional division shall be made of the sampled portion into a number of approximately equal parts. A number of parts corresponding to the number of incremental samples required in accordance with 5.A.2. must be selected at random and at least one sample taken from each of these parts.
	Where appropriate, sampling may be carried out when the sampled portion is being moved (loading or unloading).
6.2.A.2.	Packaged feeding stuffs
	Having selected the required number of packages for sampling as indicated in 5.A.2, part of the contents of each package must be removed using a spear or shovel. Where necessary, the samples shall be taken after emptying the packages separately.
6.2.A.3.	Homogeneous or homogenisable liquid or semi-liquid feeding stuffs
	Having selected the required number of containers for sampling as indicated in 5.A.2, the contents must be homogenized if necessary and an amount taken from each container.
	The incremental samples may be taken when the contents are being discharged.

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6.2.A.4.	Non-homogenizable, liquid or semi-liquid feeding stuffs
	Having selected the required number of containers for sampling as indicated in 5.A.2, samples must be taken from different levels.
	Samples may also be taken when the contents are being discharged by the first fractions should be discarded:
	In either case the total volume taken must not be less than 10 litres.
6.2.A.5.	Feed blocks and mineral licks
	Having selected the required number of blocks or licks for sampling as indicated in 5.A.2, as part of each block or lick must be taken.
6.2.B.	<i>In relation to the control of undesirable substances or products likely to be distributed non-uniformly throughout the feedingstuff, such as aflatoxins, rye ergot, castor-oil plant and crotalaria in straight feeding stuffs.</i>
	A notional division must be made of the sampled portion into a number or approximately equal parts, <i>corresponding to the number of aggregate samples provided for in 5.B.3.</i> If this number is greater than one, the total number of incremental samples provided for in 5.B.2. shall be distributed approximately equally over the different parts. Then samples of approximately equal sizes <sup>(d)</sup> , and such that the total amount in the samples from each part is not less than the minimum 4kg quantity required for each aggregate sample, shall be taken. <i>Incremental samples taken from different parts shall not be aggregated.</i>
6.3.	<b>Preparation of aggregate samples</b>
6.3.A.	<i>In relation to the control of substances of products distributed uniformly throughout the feedingstuff</i>
	The incremental samples must be mixed to form a single aggregate sample.
6.3.B.	<i>In relation to the control of undesirable substances or products likely to be distributed non-uniformly throughout the feedingstuff, such as aflatoxins, rye ergot, castor-oil plant and crotalaria in straight feeding stuffs</i>

	The incremental samples from each part of the sampled portion must be mixed and the number of aggregate sampled provided for in 5.B.3, made up <i>taking care to note the origin of each aggregate sample</i> .
6.4.	<b>Preparation of final samples</b>
	The material in each aggregate sample must be carefully mixed to obtain an homogenized sample <sup>(e)</sup> . If necessary the aggregate sample should first be reduced to at least 2kg or two litres (reduced sample) either by using a mechanical divider or by the quartering method.
	At least three final samples shall then be prepared, of approximately the same amount and conforming to the quantitative requires of 5.A.4 or 5.B.4. Each sample must be put into an appropriate container. All necessary precautions must be taken to avoid any change of composition of the sample, contamination or adulteration which might arise during transportation or storage.

**NOTES:**

<sup>(d)</sup>For packaged feeding stuffs, a part of the contents of the packages to be sampled must be removed, using a spear or shovel, after emptying the packages separately where necessary.

<sup>(e)</sup>Any lumps must be broken up (if necessary by separating them out and returning them to the sample) in each aggregate sample separately.

**3.4 How must the final sample be sealed, fastened and marked?**

Each container of a final sample must be secured and sealed by the person taking the sample so that the container cannot be opened without breaking the seal. Alternatively the container may be placed in a stout envelope or in a linen, cotton or plastic bag which is then secured and sealed in such a manner that the contents cannot be removed without

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breaking the seal or the receptacle. A label must be attached to the container or receptacle containing the final sample and it must be sealed in such a manner that it cannot be removed without the seal being broken. The label must be marked with the following particulars, which should be visible without the seal having to be broken:

- (a) the name of the inspector and the authority authorising the taking of the sample;
- (b) a unique identification mark given by the inspector to the sample;
- (c) the place of sampling;
- (d) the date of sampling;
- (e) the name of the material sampled; and
- (f) an identification code, batch reference number or consignment identification of the material sampled, where readily available.

The container or receptacle referred to above may also be secured and sealed by the holder of the material sampled, or person acting on his behalf. The label referred to above must be signed or initialled by the person taking the sample or by, or on behalf of, the holder of the material sampled.

### **3.5 What other information should be transmitted to the analyst?**

Information that will be helpful to the analyst includes:

- the mode of transit of the sample ("by hand", "by registered post", "by rail", for example);
- any pertinent descriptions, declarations or specifications relating to the material; and

- the 'statutory statement', copy of statutory statement, copy of particulars marked on the material or copy of particulars indicated by a mark applied to the material, as the case may be.

### **4 Matters To Deal With Following Sampling**

#### **4.1 What methods are permitted for sending parts of a sample for analysis?**

Regulations stipulate that any part of a sample of a feeding stuff required to be analysed may be sent to the official laboratory by registered post or by recorded delivery, or be delivered or given in by hand.

#### **4.2 What methods of analysis will be used?**

The storage of samples, preparation techniques and methods of analysis to be employed by the agricultural chemist are laid down in the Feeding Stuffs (Sampling and Analysis) Regulations 1999, as amended.

Where a sample of a feeding stuff has been taken by an inspector in the prescribed manner and sent to the analyst for analysis, any analysis of the oil content must be disregarded unless it is carried out within three weeks of the date of sampling.

The form of the certificate of analysis for feeding stuffs that the analyst must return is also prescribed.

### Annex A: References

1. The Feeding Stuffs Regulations 2000 (SI 2000/2481, as amended by SI 2001/541, SI 2001/3389, SI 2002/892, SI 2003/1026, SI 2003/1296 and SI 2003/1503 and related legislation in Scotland, Wales and Northern Ireland as appropriate.
2. The Agriculture Act 1970, as amended.
3. The Feeding Stuffs (Enforcement) Regulations 1999 (SI 1999/2325), as amended by SI 2000/2481 reg 29, SI 2001/541, SI 2001/3389, SI 2002/892, SI 2003/1026, SI 2003/1296 and SI 2003/1503 and related legislation in Scotland, Wales and Northern Ireland as appropriate.
4. The Feeding Stuffs (Sampling and Analysis) Regulations 1999 (SI 1999/1663), as amended by SI 2001/541, SI 2000/2481, SI 2002/892, SI 2003/1296 and SI 2003/1503 and related legislation in Scotland, Wales and Northern Ireland as appropriate.
5. First Commission Directive 76/371/EEC establishing the methods of sampling for the official control of feeding stuffs, OJ No. L102, 15.4.76, p. 1.

### **Annex B: Before going sampling**

- a) Have you got authorisation/warrant card?
- b) Do you know what samples will be taken?
- c) Are there any legal, official or product specific sampling procedures that need to be considered before taking feed samples?
- d) Do you know how many, and how much sample will be needed?
- e) Have you got the correct labels, forms and paperwork, equipment, containers, utensils, and official seals?
- f) Is any specialised sampling equipment needed for the products concerned?
- g) Do normal working hours apply?
- h) Should prior warning of attendance be given?
- i) Does the Public Analyst need to know the sample is coming?
- j) Do you need to take any specialised clothing?
- k) Will the samples be purchased or taken? If you are going to purchase samples, do you have sufficient money?
- l) What powers and rights does the sampler have, and the owner/seller have?
- m) What should be sampled, and how should it be sampled and divided to ensure it is representative?

### **When taking sample**

- a) Has a sample fair to both parties been taken and is the security of sealing procedures adequate?
- b) What documents do you need to use and leave with the owner of the feed?
- c) What additional information should you ask for about the feed?
- d) Where should you take and divide the sample?
- e) Do you know how you should transport the sample?
- f) Do you know how you should store the sample?
- g) What do you need to tell the company that owns the feed?
- h) Where do you need to send the samples?
- i) What do you need to report back to seller/owner of the feed on receipt of the result?