

# Code of Practice for the Control of Salmonella

During the Storage, Handling and Transport  
of Raw Materials Intended for Incorporation  
Into, or Direct Use As, Animal Feedingstuffs

This non-statutory Code of Practice is issued by the Department for Environment Food and Rural Affairs, the Scottish Executive Environment and Rural Affairs Department and the National Assembly of Wales. It has been drawn up in consultation with the United Kingdom Agricultural Supply Trade Association, the National Farmers' Union, the Farmers' Union of Wales, the Seed Crushers' and Oil Processors' Association and the Grain and Free Trade Association.

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Salmonella organisms are widespread in the environment and each link in the food chain, from producers to consumers, has a part to play in reducing the risk of human infection caused by salmonella. Animal feedingstuffs are acknowledged to be one possible route by which salmonella can enter the food chain. The animal feedingstuffs industry has already made strenuous efforts, through voluntary and statutory measures, to reduce the contamination rates of animal feedingstuffs and their ingredients and substantial progress has been made since the introduction in 1989 of the Government's package of measures to control salmonella. Considerable information is now available on the occurrence of salmonella in animal feedingstuffs.

This detailed Code of Practice provides non-statutory guidelines for establishing good production practices and safeguarding the microbiological quality of raw materials used directly as, or intended for incorporation into, animal feedingstuffs.

## **1. Purpose of the Code**

To ensure that raw materials supplied for incorporation into, or direct use as, animal feedingstuffs are of a satisfactory bacteriological quality with the risk of contamination with salmonella minimised.

## **2. Scope of the Code**

**2.1** 'Raw materials' in this Code means any material of animal, fish, vegetable or mineral origin used as an ingredient for incorporation into, or direct use as, animal feedingstuffs, but excludes unprocessed roughages such as hay, straw, silage or root crops. However, although such unprocessed forages are outside the scope of this Code every reasonable care should be taken to keep them clean and, as far as possible, free from faecal matter and rodent infestation.

## Introduction

'Storage' in this Code means the final storage prior to despatch to the final feed compounder or, in the case of material fed direct to livestock, prior to despatch to the livestock unit.

**2.2** In the case of imported material, the Code applies from the point of landing in Great Britain. In the case of home produced material, the Code applies to final storage before despatch from the processing plant or on-farm store and delivery to the final feed compounder or livestock unit.

### 3. Storage facilities

**3.1** All raw materials should be stored in facilities which protect against the entrance and harbouring of rodents, birds and domestic animals and control measures should be regularly applied to exclude them.

**3.2 Section 1 of the Wildlife and Countryside Act 1981** makes it an offence to take, damage or destroy the nest of any wild bird whilst that nest is in use or being built, or to take measures to disturb certain wildlife when they are already nesting, building a nest or are near a nest containing eggs or young birds. Where possible, proofing should, therefore, be carried out before nesting commences. For most bird species, however an exception to **Section 1 of the Act** is provided where action is necessary for the purpose of preserving public health and safety or preventing the spread of disease (**Section 4 of the Act** which is applicable here). *This exception is not available in the case of certain birds, such as the barn owl, listed in Schedule 1 of the Act* (which is reproduced in the Appendix of this Code) except under licence from the Agriculture Secretary of State. These licences would only be granted in very exceptional circumstances. Furthermore, in cases where the building in question is known to be used as a nesting site for barn owls, action outside the nesting period should be taken only after consultation with ADAS or other organisations experienced in conservation, such as The Barn Owl Trust, Waterleat, Ashburton, Devon and the Hawk and Owl Trust, c/o Zoological Society of London, Regent's Park, London NW1 4RY (please enclose a stamped addressed envelope for further information). It may then still be possible to continue to permit barn owls to use the site e.g. through an 'attic' or through the provision of a nest box.

**3.3** Under the **Conservation (Natural Habitats & c.) Regulations 1994** it is an offence to damage or destroy a breeding site or nesting place of a European protected species of animal, including all types of bat, or deliberately to disturb any such animal. This includes the

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obstruction of access to any structure or place which any such wild animal uses for shelter or protection (**Section 9 of the Wildlife & Countryside Act 1981** also refers). For bats, English Nature has a statutory duty to provide advice and must be consulted in all cases before any action is taken.

**3.4** Raw materials should not be stored in close proximity to animal housing or animal waste, including manure. If this is necessary, particular attention should be given to keeping storage facilities free of invertebrate and rodent pests as far as practicable, and to maintain adequate separation between stored products, animals and their waste. In these circumstances, the following measures should be applied:

- a) Raw materials should not be stored in an area previously used to house animals or store their waste unless it has first been thoroughly cleaned to remove all organic material, disinfected and dried.
- b) The control treatment required should be carried out by trained personnel and should not contaminate goods in the store.
- c) The storage facility should be clearly separated from any areas used to house livestock or their products and waste. All personnel entering the storage facility should put on clean overalls or disinfect outer clothing when entering from areas of the premises used to house livestock or store their waste.

**3.5** The storage facility should be soundly constructed of durable materials and fully enclosed. Floors and walls should be impervious to liquids. There should be sufficient clean hard standing at the store entrance to minimise tracking of mud, effluent and other wet material into the store. Doors should be soundly constructed, close fitting and, where at all possible, kept closed other than for personnel entry or for



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the inward or outward movement of materials and goods. If it is necessary for ventilation purposes to open doors then suitable precautions should be taken to ensure this does not increase the risk of vermin and wild birds gaining entry.

**3.6** Storage bays/areas should be organised to permit suitable and effective separation and identification of the various raw materials and other goods.

**3.7** The store should be maintained in a generally clean and orderly condition with adequate and effective draining. In particular, storage facilities used for raw materials should be subject to a regular cleaning programme, including complete emptying, at appropriate intervals.

**3.8** Raw materials should be kept dry at all times since salmonella needs moisture to multiply. Any leakage or condensation in areas/bays used for raw materials should be prevented or promptly corrected. Good ventilation is important to minimise condensation.

**3.9** Raw materials which have been rejected, recalled or returned because of salmonella contamination should be placed in separate and adequately segregated storage pending treatment to eliminate contamination so as to preclude contamination of other raw materials. Any store which contains raw materials contaminated with salmonella should be decontaminated before use for other products.

## 4. Equipment

Ideally, separate equipment should be designated for feedingstuffs raw materials, but it is recognised that resources may not always allow this. Any equipment used to load, unload or otherwise handle raw materials should be suitable for the purpose for which it is being used and should be maintained in a clean condition. Any equipment used to handle materials other than feedingstuffs raw materials, which

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could be a source of contamination, or feedingstuffs which are known to be contaminated, should be thoroughly cleaned and dried before being used to handle other raw materials. This is particularly important where raw materials are handled on premises which are also used to house livestock on which their waste, including manure, is handled. Any equipment used to handle animal waste, including manure, should be thoroughly cleaned, disinfected and dried before being used to handle feedingstuffs raw materials.

### **5. Personnel**

**5.1** The aim should be to ensure that there are sufficient personnel with the ability, training and expertise necessary to make sure that the provisions of the Code are applied. All personnel who may be involved in handling raw materials in stores should be given clear guidance and instruction on their duties. Training should cover not only specific tasks but good hygiene practice generally and the importance of personal hygiene.

**5.2** All personnel should wear overalls or other appropriate garments. These should be regularly and frequently cleaned. Eating, drinking or smoking should not be permitted within storage areas or near to raw materials. Cloakroom and toilet facilities, where provided, should be kept clean.

**5.3** No person known to be suffering from a communicable enteric disease should be employed in the handling of raw materials.

### **6. Hazard Analysis Critical Control Points (HACCP)**

**6.1 a)** There should be a comprehensive system designed, documented, implemented and controlled, so as to provide assurance that final feedingstuffs will be consistently of a satisfactory bacteriological quality. The techniques of Hazard

Analysis Critical Control Points (HACCP) are likely to be particularly useful in this respect. The purpose of the bacteriological monitoring provided for in Section 7 is to provide an indication that bacteriological quality criteria are being met. Specific actions are recommended in the event that these criteria are not met.

**b)** The principles of HACCP are as follows:

- i) All areas and processes are assessed for risk;
- ii) regular surveillance of plant hygiene points (where appropriate) known as Critical Control Points (CCP), are completed, with reference to non-compliance limits for each CCP. Each non-compliance is recorded and acted upon using a non-compliance system assigned to each CCP;
- iii) records of all HACCP systems should be kept for observation by the authorities or customers.

**6.2** HACCP systems are likely to be of particular value in controlling microbiological hygiene in premises where raw materials are generated as a product or by-product of a manufacturing process (e.g. oilseed meals).

## **7. Bacteriological Monitoring**

**7.1** All raw materials should be subject to monitoring for the presence of salmonella. The aim of the monitoring is to:

- a)** check on the bacteriological quality of raw material; and,

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- b) if necessary, to take any necessary corrective action. The information gained by this monitoring should be used to help select sources of raw materials which most consistently provide the desired quality (in the case of material entering stores) or to monitor the effectiveness of microbiological hygiene (in the case of material leaving stores), and identify the need for corrective action where problems are detected. In the case of stores handling raw materials of more than one type or source, each individual storage facility should be regarded as a separate store for sampling purposes.

### 7.2 Monitoring of material entering stores

Owners of raw materials *entering stores* (other than intervention stores or on-farm stores) should aim to ensure that representative aggregate samples are collected and submitted for testing for salmonella. Aggregate samples should be collected over a period of one month (30 days) or less. In the case of imported materials this sampling should be carried out at the point where the cargo discharges. On the basis of the test results, three categories of risk (high, medium and low) should be established by the storekeeper taking into account the history of the source of each raw material. The frequency of sampling and monitoring for each category of raw material entering stores should vary in accordance with the established risk factor, increasing for high risk and decreasing for low risk materials.

### 7.3 Monitoring of products despatched from stores that have been tested in accordance with 7.2

On each day the material is despatched at least one sample should be taken for aggregation. Aggregate samples should not contain more than 40 incremental samples of materials collected over a period of more than one month (30 days). On the basis of the test results, three categories of risk (high, medium and low) should be established

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relating to the previous microbiological testing history of despatched raw material. Continued sampling and monitoring for each category of despatched material should vary in accordance with the established risk factor, increasing for high risk and decreasing for low risk materials.

**7.4** The results of tests on material entering and leaving stores should be compared in order to identify whether contamination is taking place during storage. If contamination is occurring, the source of the contamination should be sought and corrective action should be taken.

### **7.5 Monitoring of products despatched from stores that have not been tested in accordance with 7.2**

The owners of raw materials *despatched from stores*, or warrant holders taking out futures grain, should ensure, in collaboration with the storekeeper and any other party involved, that raw materials are representatively sampled and aggregate samples are submitted for testing. On each day the material is despatched, at least one sample must be taken for aggregation. Aggregate samples must not contain more than 40 incremental samples or materials collected over a period of more than one month (30 days).

### **7.6 Monitoring of manufactured products and by-products leaving the place of manufacture**

On each day the material is despatched at least one sample should be taken for aggregation. Aggregate samples should not contain more than 40 incremental samples or materials collected over a period of more than one month (30 days). On the basis of the test results, three categories of risk (high, medium and low) should be established relating to the previous microbiological testing history of despatched raw material. Continued sampling and monitoring for each category of despatched material should vary in accordance with the established risk factor, increasing for high risk and decreasing for low risk materials.

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**7.7** Samples should be collected, handled and tested in accordance with approved methods laid down in **The Animal By-Products Order 1999** (SI No 1999/646)<sup>1</sup> at a Defra listed laboratory as approved under that Order. Isolations of salmonella should be serotyped by approved serotype reference methods.

### **8. Action to be taken following isolation of salmonella**

The action to be taken following the isolation of salmonella will depend on the circumstances of the isolation. The following should be undertaken in all circumstances:

- a)** Ensure that Defra<sup>2</sup>, the storekeeper, vendor and purchaser are notified of the isolation.
- b)** Thoroughly investigate the circumstances of the isolation, review all procedures and put in hand any necessary remedial action which could include correction of any sources of water ingressed to stores, enhanced control of pests and vermin and more vigorous decontamination of storage areas, etc.
- c)** Increase the monitoring of any other raw materials in the store and take all necessary precautions to avoid cross contamination.

<sup>1</sup> The Animal By-Products Order 1999 requires any person carrying on a business involving the processing of animal protein to register their business with Defra and take samples of processed material for testing for the presence of salmonella, using the approved methods set out in Schedule 3 to the Order, and at a laboratory authorised by Defra, each day that product is consigned from the premises.

<sup>2</sup> The Zoonoses Order 1989 requires laboratories to report all isolations of salmonella from animal/poultry feedstuffs and ingredients to Defra

### 9. Records

Owners should be responsible for ensuring that suitable records are maintained, kept for one year, and made available to Defra officers on request. The records should show:

- a)** Details of movements of raw materials into and out of storage including, where appropriate, names and addresses of consignees/consignors.
- b)** Details of samples taken and dates of sampling and testing.
- c)** Details of any salmonella isolations and serotypes.
- d)** Details of actions taken following any salmonella isolation.

## 10. Vehicles

**10.1** The owner of the raw materials, or his agent, should ensure that all vehicles, including those operated by third parties, are inspected at the time of loading and found to be clean and dry before being used for the transport of raw materials. Keeping raw materials dry is important since salmonella needs moisture to multiply.

**10.2** All vehicles used for transport of raw materials should be subjected to a regular cleaning and sanitising programme to ensure they are maintained in a clean state with no build up of waste material. Ideally, separate vehicles should be designated specifically for feedingstuffs but it is recognised that resources may not allow this. Therefore, if vehicles are used for the carriage of other goods or materials, they should be thoroughly cleaned, sanitised and dried before being used to transport raw materials.

**10.3** Raw materials should be protected from contamination and kept dry during transport. It is recommended that enclosed vehicles and containers are used for loose bulk, but where this is impracticable loads should be covered/sheeted. Any cover so used should be maintained in a clean and sound condition and should be cleaned, sanitised and dried before use if it has been used to cover other materials or goods.

## 11. Personnel

**11.1** All persons who may be involved in the transport of raw materials should be given clear guidance and instruction on their duties. Training should not only cover specific tasks but good hygiene practice generally and the importance of personal hygiene.

**11.2** All personnel should wear overalls or other appropriate garments in work areas. These should be regularly and frequently cleaned. Eating, drinking or smoking should not be permitted within storage



areas or near to raw materials. Cloakroom and toilet facilities, where provided, should be kept clean.

**11.3** No person known to be suffering from a communicable enteric disease should be employed in the handling of raw materials.

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## Wildlife and Countryside Act 1981 Schedule 1

### Birds which are protected by special penalties

#### PART I – AT ALL TIMES

<i>Common name</i>	
Avocet	Grebe, Black-necked
Bee-eater	Grebe, Slavonian
Bittern, Little	Greenshank
Bluethroat	Gull, Little
Brambling	Gull, Mediterranean
Bunting, Cirl	Harriers (all species)
Bunting, Lapland	Heron, Purple
Bunting, Snow	Hobby
Buzzard, Honey	Hoopoe
Chough	Kingfisher
Corncrake	Kite, Red
Crake	Merlin
Crake, Spotted	Oriole, Golden
Crossbills (all species)	Osprey
Curlew, Stone	Owl, Barn
Divers (all species)	Owl, Snowy
Dotterel	Peregrine
Duck, Long-tailed	Petrel, Leach's
Eagle, Golden	Phalarope, Red-necked
Eagle, White-tailed	Plover, Kentish
Falcon, Gyr	Plover, Little Ringed
Fieldfare	Quail, Common
Firecrest	Redstart, Black
Garganey	Redwing
Godwit, Black-tailed	Rosefinch, Scarlet
Goshawk	Ruff
	Sandpiper, Green
	Sandpiper, Purple

Sandpiper, Wood  
Scaup  
Scoter, Common  
Scoter, Velvet  
Serin  
Shorelark  
Shrike, Red-backed  
Spoonbill  
Stilt, Black-winged  
Stint, Temminck's  
Swan, Bewick's  
Swan, Whooper  
Tern, Black  
Tern, Little  
Tern, Roseate  
Tit, Bearded  
Tit, Crested  
Treetreeper, Short-toed  
Warbler, Cetti's  
Warbler, Dartford  
Warbler, Marsh  
Warbler, Savi's  
Whimbrel  
Woodlark  
Wryneck

**PART II –  
DURING THE CLOSE SEASON**

*Common name*  
Goldeneye  
Goose, Greylag (in Outer  
Hebrides, Caithness, Sutherland  
and Wester Ross only)  
Pintail

**Note:** The common name or names given is by way of guidance only. In the event of any dispute or proceedings, the common name or names shall not be taken into account. The scientific names of the birds listed in Parts I and II above are detailed in the legislation.



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