

DET DANSKE FJERKRÆRAAD

***Code of Practice
And
General Operating Standards
For
Poultry Feed Processing and
Transportation***



**Copenhagen
June 2014**

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Access declaration and effective date of “Code of Practice for General Operating Standards for Poultry Feed Processing and Transportation”

It is required that all feed used for commercial poultry production (eggs and broilers) in Denmark must be produced and handled according to the present Code of Practice. It is the obligation of the Danish Poultry Council, poultry slaughterhouses under the Danish Poultry Meat Association, egg packing stations under the Danish Egg Association to ensure this.

In order to ensure this, all companies under the Danish Egg Association and the Danish Poultry Meat Association involved in commercial poultry production as well as DAKOFO subscribe to this Code of Practice by signing an accession declaration for the individual company (Annex 12).

The signed accession declaration must be sent to the Secretariat for “Code of Practice and General Operating Standards for Poultry Feed Processing and Transportation”, c/o The Danish Poultry Council, Agriculture and Feed, Axelborg, Axeltorv 3, DK-1609 Copenhagen V, att.: Mie Nielsen Blom.

A complete list of all companies that have subscribed to the present Code of Practice must be published on The Danish Poultry Council’s website www.dansk fjerkræ.dk.

The present Code of Practice becomes effective on 1st June 2014.

Other contracting parties can, after their own wish, subscribe to the Code of Practice; cf. Annex 12.

The co-signatory contracting parties hereby declare that the present Code of Practice is agreed upon and put into operation as described.

The Danish Poultry Council

Danish Poultry Meat Association

Danish Egg Association

DAKOFO

Copenhagen, _____ 2014

1. The Reference Group

The present Code of Practice is an agreement between the following co-signatory parties:

- The poultry meat industry, represented by the Danish Poultry Council; the Danish Poultry Council represents:
 - The Danish Poultry Meat Association
 - The Danish Egg Association
- The animal feed industry, represented by DAKOFO; DAKOFO represents Danish animal feed suppliers, who produce poultry feed intended for commercial use in Denmark.

The Code of Practice is endorsed by the signature of the chairman/director of each of the mentioned parties.

The present Code of Practice is part of the national authority's combative program and must therefore be approved by the Danish AgriFish Agency.

1.1 Composition of the reference group

One external chairman appointed by the reference group

Four representatives appointed by DAKOFO

Four representatives appointed by the Danish Poultry Council

One representative appointed by the Danish AgriFish Agency

One representative of an external auditor, acting as an observer

One representative of the Faculty of Natural Sciences and Technology at Aarhus University who has special insight in the feeding of organic poultry and feed hygiene, acting as an observer. This representative will attend only if external assistance is required.

The reference group can co-opt external expertise as requested.

Reference group members are obliged to attend the reference group meetings summoned in accordance with the purpose of their appointment as representatives. It is the responsibility of each individual organisation to ensure this.

Minutes of meetings held by the reference group are confidential documents, which only reference group members and section managers of the Danish Poultry Meat Association and the Danish Egg Association have access to.

The reference group supervises that the Code of Practice is observed and discusses actions to target, streamline and develop its single elements in order to ensure that they are adapted to current issues and production methods at any time.

An updated list of reference group members is available on www.danskfjerkrae.dk.

1.2 Chairman and vice chairman

The reference group is headed by a chairman and a vice chairman. Both are nominated by the members of the reference group.

The chairman and the vice chairman are nominated for a period of max. two years. The reference group will appoint the chairman and the vice chairman at the first quarterly meeting in even and odd-numbered years, respectively.

When a new chairman is nominated, an evaluation committee composed of four persons appointed by the reference group shall assess and approve his professional qualifications in the fields of microbiology and risk assessment. The evaluation committee includes minimum one member from Copenhagen University who is a specialist in microbiology.

The chairman can resign/be dismissed according to the stipulations in his current contract.

The vice chairman can be nominated among the group of persons stated in section 1.1, but can also be nominated outside. In the event of the chairman's absence the vice chairman will assume his/her above-mentioned responsibilities.

The Danish Poultry Council makes the secretariat available and pays the chairman's salary.

The reference group holds meetings as required, and as a minimum every three months. Updated data on all involved companies shall be available at the quarterly meetings. The meetings are usually convened by the chairman, but other members can request meetings to be convened if required.

The reference group keeps the Danish Poultry Council posted on the group's activities and decisions.

2. Purpose and scope

The object of the Code of Practice is to define general rules for good operating standards concerning production, handling and transportation of poultry compound feed for commercial poultry production (eggs and broilers) with the intention of combating and controlling the prevalence of salmonella in the feed.

All feed used in commercial poultry production (eggs and broilers) in Denmark must be produced, handled and transported in compliance with the present Code of Practice.

The Code of Practice lays down rules for process control and subsequent reporting as well as utilization of results and implementation of corrective actions.

The Danish AgriFish Agency supervises the Code of Practice through their representative in the reference group and through audits of the companies. Thus, any company that has been approved according to this Code of Practice can still be subject to a targeted control by the Danish AgriFish Agency.

Companies (production and transport companies) that are registered and approved under current legislation can join the Code of Practice. This also applies to separate manufacturing plants within such companies.

Prior to the approval, the company must contract with an auditing company (external auditor) approved by the reference group to conduct process controls at the company according to the rules laid down in this Code of Practice. On the basis hereof the company can be granted a conditional certificate of approval or a certificate of approval to supply poultry compound feed to rearing/commercial stocks.

Foreign companies selling poultry compound feed in Denmark are subject to the same Code of Practice.

The present Code of Practice meets the requirements laid down in current legislation on combating the prevalence of salmonella in feed. In the event of future amendments of legislation concerning salmonella in the animal feed area, the aforementioned co-signatory parties have agreed to update the present Code of Practice. The Code of Practice shall be updated every 5th year as a minimum.

The present Code of Practice is constructed following Hazard Analysis Critical Control Points, briefly HACCP principles, as specified by codex alimentarius and current standards.

The present Code of Practice is an integrated part of the Danish authorities' combative program and contingency plans for the control of salmonella in poultry production; cf. relevant EU regulations. Consequently, the Danish AgriFish Agency must approve the Code of Practice and any amendments before they become effective.

Annex 11 of the present Code of Practice also describes actual actions and reservations that will become effective in the case of an outbreak of a virulent poultry disease.

3. Approval under the Code of Practice

3.1 Obtaining a certificate of approval

To become approved under the present Code of Practice, the following prerequisites must be fulfilled:

New companies (production and transport companies) that wish to join the agreement shall accept an inspection visit by an external auditor approved by the reference group (see Annex 8). During this visit, the company will be reviewed and audited according to this Code of Practice. Based on this inspection visit and the test results for samples taken during the visit, the external auditor will draw up a technical report describing the company and any activities required before the company can obtain its certificate of approval.

All companies that are part of the agreement must draw up a self-monitoring scheme in compliance with the present Code of Practice. The self-monitoring scheme must include a description of hygiene control, heat treatment, cleaning and disinfection procedures, risk of cross contamination, specification of critical control points as well as a revision of the scheme.

The self-monitoring scheme must be approved by the reference group based on the chairman's and the external auditor's preceding recommendations.

In principal, all companies that are approved are granted either a **certificate of approval** or a **conditional certificate of approval**.

A **conditional certificate of approval** means that the company is only certified to deliver poultry compound feed to commercial operations (see Annex 1). When a company joins the agreement, it will always be granted a conditional certificate of approval. This status can be upheld for a maximum of six months. The company will then have to obtain a certificate of approval in order to remain part of the agreement. In special cases the reference group can grant an exemption so a conditional approval can be upheld for a maximum of 12 months.

A **certificate of approval** means that the company is certified to deliver poultry compound feed to rearing operations, centralised breeding operations, parent stock operations and commercial operations (see Annex 1). However, various circumstances may have the consequence that the company cannot obtain/uphold its certificate of approval (see section 3.4); in such a case the company will be granted a conditional certificate of approval.

Review of the external auditor's reports is a regular issue on the agenda of the reference group's quarterly meetings.

The actual approval of the company is effected on the next meeting of the reference group.

3.2 Maintenance of certificate of approval

For verification of the control of critical control points, the company shall establish a microbial biosecurity monitoring programme as part of its self-monitoring scheme. The programme must map out place of sampling, sampling frequency and test programme stating the testing method applied, procedures and instructions for sampling methodology and handling of the samples until test and reporting of results.

The company's approved self-monitoring scheme must also describe the number of weekly samplings per production line. The testing must include samples of product remains, coatings or similar from plant areas that may constitute a hygiene hazard (product accumulation, condensation and cross contamination). As a minimum the samples shall be tested for their content of salmonella and coliform bacteria.

A minimum of three samples must be taken per sampling event, unless the company can document special conditions that can reduce this frequency. This is subject to an evaluation by the reference group.

The company must initiate reflective actions in the event of deviations according to the specified action limits. When the external auditor visits the company, the test results from the self-monitoring scheme must be available for evaluation. Besides, documentation must be available of the effect of corrective action taken as part of the company's HACCP scheme.

If microbiological testing of raw materials is carried out, the results hereof must be available to the external auditor.

The programme for the transport unit must as a minimum comply with the specified rules for records, logs, sampling, etc. The scheme must be drawn up in accordance with HACCP principles.

3.3 Approval and audit by external auditor

Every company will be paid an unannounced inspection visit every three months. In addition, the company can ask for supplementary inspections.

It is possible to apply for certificates of approval for several separate lines in the same factory.

During each inspection visit to the company, the production hygiene and documented observance of the present Code of Practice is audited and evaluated. During each inspection visit a maximum of five relevant samples per production line are taken of product remains, coatings or similar from areas at the company that may constitute a hygiene hazard (product accumulation, condensation, cross contamination, etc) for analysis for salmonella, coliform bacteria and viable cell counting. If there are no coatings, product remains or similar, the samples can be taken by a swap test.

Tests shall be carried out according to the appropriate ISO, NMKL, NordVal, Afnor validated methods.

The costs for the external audit shall be paid by the individual company.

3.4 Change of status or withdrawal from the Code of Practice

3.4.1 Detection of salmonella

If salmonella is detected in samples taken by the external auditor or during the company's own self-monitoring scheme, the company shall stop deliveries of poultry feed immediately. If the salmonella bacteria are found in samples taken by the external auditor it is the responsibility of the external auditor to ensure that the company as well as the chairman of the reference group are informed immediately (see section 3.4.2).

If the salmonella detected is an isolated case, the company may resume deliveries after a new visit by the external auditor or if the company's self-monitoring scheme verifies that the company is salmonella-free again. If there are repeated detections (two or more), the company is not allowed to resume its deliveries before the reference group has re-approved the company after minimum two external audits at the company. It must be ensured that the abovementioned procedure is followed so the company can be re-approved as soon as possible.

A certain amount of feed must have been produced at the company during a period of minimum one week between the two external audits in order to ensure an actual production period as basis for the evaluation.

In the event of a subsequent announced visit by the external auditor due to the detection of salmonella at the company, the company must also provide results from an unannounced visit during the same three-month period before it will be entitled to a certificate of approval.

3.4.2 Orientation and communication in case of salmonella detection

If the presence of salmonella has been detected in a company, either through its of self-monitoring scheme or during an external audit, the chairmen of the reference group shall be informed immediately by telephone. If the chairman is not available, the vice chairman shall be contacted instead.

The chairman of the reference group immediately passes the information on to the secretariat for “Code of Practice and General Operating Standards for Poultry Feed Processing and Transportation”. The secretariat then updates the list of granted certificates of approval, cf. chairman’s decision on the issue, and informs the Danish Poultry Council, the Danish Poultry Meat Association and the Danish Egg Association immediately hereafter. The mentioned poultry associations will then be responsible for giving the required information to the individual parties involved.

The company is also obliged to report any presence of salmonella in the company’s processes or in finished goods to those parties who have received feed from the company during the period following its preceding status as unconditionally approved according to the microbiological monitoring scheme.

In the case of salmonella detection the company shall also relate to the guidelines specified in the Hygiene Regulation.

3.4.3 Detection of coliform bacteria

If two successive external audits reveal a presence of coliform bacteria in excess of 10,000 per g in the samples taken, the chairman of the reference group can inform the company that its status will be changed from approved to conditionally approved with immediate effect. Such a change in status must be communicated to the secretariat for “Code of Practice and General Operating Standards for Poultry Feed Processing and Transportation”; the secretariat then updates the list of approved/conditionally approved companies available on the Danish Poultry Council’s website, cf. the chairman’s decision on the issue.

The company can obtain a change of status from conditionally approved to approved and thus resume supplies to rearing operations, centralised breeding operations and parent stock operations, when a re-newed inspection visit by the external auditor verifies that all microbiological and hygiene conditions can be approved again. The present case is also assessed on the basis of previous incidents and status of the company.

3.4.4 Other circumstances of importance for withdrawal or change of status

A company or a process line which, in two successive quarters, has not been granted a certificate of approval is considered to be withdrawn from this Code of Practice, unless it has been granted exemption by the reference group.

If, by its general management of critical control points laid down in the Code of Practice and/or through its overall conduct, a company fails to comply with the written instructions by the external auditor and the reference group and continues to act unreflectedly and fails to redress problems pointed out to it, the reference group can deprive the company of its certificate of approval.

The company can re-join the present code of Practice according to the rules specified in section 3.1.

When a feed supplier or a transport company, which had obtained a certificate of approval or a conditional certificate of approval, can no longer uphold its certificate of approval or conditional certificate of approval or if the company itself decides that it no longer wishes to be part of the arrangement and thus wants to be deleted from the list of companies that are part of the arrangement, the company shall inform the Danish AgriFish Agency of its decision. In addition, the company shall inform the secretariat for the “Code of Practice and General Operating Standards for Poultry Feed Processing and Transportation” as well as the external auditor of its decision.

3.4.5 Schematic overview of salmonella and coliform bacteria detection in companies and its consequences

Critical limit	Consequence	Reaction
<p>Detection of salmonella</p> <p>SELF-MONITORING AND/OR EXTERNAL AUDIT</p>	<p>KO (Knock Out)</p> <p>Production and deliveries shall be stopped.</p> <p>Company and chairman shall be contacted immediately.</p>	<p>The chairman informs the company that it shall immediately stop production and deliveries of poultry feed. In the case of detection during self-monitoring the company shall inform the chairmen hereof immediately. In the case of detection during an external audit the external auditor shall inform both the company and the chairman hereof immediately.</p> <p>First detection: Production and deliveries can be resumed when a verification of the company's self-monitoring establishes that the company is free of salmonella or if a new inspection visit by the external auditor establishes that the company is free of salmonella.</p> <p>Repeated detection: Production and deliveries can be resumed if the reference group approves the company after the external auditor has re-approved the company during two inspection visits. The company must have been producing for at least one week after the first visit.</p>
<p>Detection of coliform bacteria</p> <p>EXTERNAL AUDIT</p>	<p>Beginning deviation</p> <p>Company and chairman shall be contacted immediately.</p>	<p>If two successive external audits reveal coliform bacteria >10,000 g, the chairman can inform the company that its status will be changed from approved to conditionally approved. If the company is only conditionally approved at the time, the reference group will consider the action to be taken towards the company. In addition, the secretariat for "Code of Practice" shall be informed of the change.</p> <p>A change of status impacts deliveries, cf. Annex 1.</p> <p>A change from conditionally approved to approved can be effected when a new inspection visit by the external auditor establishes that the hygienic conditions are satisfactory.</p>

4. General documentation and communication

As documentation for the implementation and observance of the requirements laid down in the Code of Practice the following must be complied with:

A confidential technical report including test results must be made and sent to the company in question. The chairman of the reference group and the vice chairman receive a copy of the report. The report must point out potential faults in unambiguous terms, and suggest corrective action.

Based on a review of the company's status, the external auditor's recommendation in the technical report, possible deviations and a discussion in the reference group, the chairman, in consultation with the reference group, decides which companies shall be granted a certificate of approval for the following three months.

In general terms it must appear from the certificate of approval that the company in question is capable of producing poultry compound feed according to the directions.

The certificate of approval must be accessible to the company's purchasers of poultry compound feed.

The validity period (three months) is stated on the certificate of approval ("valid until"), however, subject to a change of status during the validity period referred to.

After the ordinary quarterly reference group meeting, the list of companies that have been granted certificates of approval or conditional certificates of approval is to be sent to the Danish AgriFish Agency, the approved external auditors as well as the Danish Egg Association and the Danish Poultry Meat Association. Besides, the list is published in the monthly journal of Danish Association of Commercial Poultry Producers. Furthermore, a continually updated list is published on the Danish Poultry Council's homepage: www.danskfjerkræe.dk.

5. Establishment of a hygiene control programme

This section describes the basic preconditions for establishment of a company's HACCP programme as part of their self-monitoring scheme. As a minimum the company must specify responsibilities for production, cleaning and transportation of feed from the company. The scheme must be revised every second year as a minimum. The company shall elaborate hygiene control programmes according to HACCP principles for both production and transportation of finished goods.

5.1 General terms

A precondition for the establishment of a hygiene control programme under the company's self-monitoring scheme is that the following general hygiene rules are observed:

The company area must be tidy and clean.

The site of the company must be well drained with slope towards a discharge outlet. The plant area must be covered with concrete, asphalt or other solid material, and must be free from vegetation.

All practical precautions must be taken in order to prevent permanent occurrence or access of insects, birds, rodents or other animals at the company's site.

Feed supplies must be inspected for prevalence of mould, water damage and signs of contamination due to insects, birds, rodents, etc.

Feed must be handled and stored separately from compound feed. During storage the feed must be protected against ingress of moisture and condensation.

To the widest possible extent, precautions must be taken to control and reduce formation of dirt and dust at the production premises. All irrelevant packaging, tools, etc. that are dust traps must be removed after use.

During transport from production plant to supply of the finished feed to the end user measures must be taken to prevent contamination of the finished feed by products that have not been heat-treated, cf. this Code of Practice.

The company's self-monitoring scheme, including the microbiologic surveillance programme, must specify the principles – in relation to the actual risk assessment – for sampling as well as handling of samples until the testing of the samples starts and the subsequent handling of test results.

The company's self-monitoring scheme must as a minimum contain the following:

- A description of the procedures for sampling and identification of samples
- A sampling plan in order to ensure that critical points over the entire heat side are included in the sampling
- Identification of samples must be unambiguous in relation to sampling site and time
- Proper registration of sampling
- Corrective action and general follow-up on faults

The test laboratory must have a quality management system that includes:

- A procedure for receipt of samples, handling of samples and recording of results
- A description of the procedure for handling of method descriptions
- Validation of test results
- Documentation of education and training of personnel

The company's own test laboratory is not audited by the external auditor. However, non-accredited company laboratories are audited minimum once a year by the external auditor. A separate report on this inspection is sent to the chairman of the reference group.

5.2 Scope

The company must make a full description of the production lines and/or transport units covered by the Code of Practice. If not all units are covered, the company must document that units covered - in all links from heat-treatment to delivery of finished feed at end user - are kept separate from units handling feed that is not heat-treated under the Code of Practice.

5.3 Process description

Production flow and handling, from receipt of feed to delivery to the end user, is illustrated in a flow diagram. From the flow diagram or from supplementary specifications the below stated must appear. It should be stressed that the companies must add further details if these are relevant.

5.4 Flow diagrams and layout drawings

All stages in the processing and handling, from receipt of feed to delivery of finished feed to the end user, are illustrated in a flow diagram stating product flow, including return flow.

Specific critical control points (CCP's), cf. Annex, are marked in the flow diagram. Furthermore, a layout drawing is made indicating the position of equipment, transport routes, etc. at the individual premises.

Finally, an account must be given describing how transport of finished feed is conducted, including detailed process description, manuals and instructions for transport of finished feed.

5.5 Applicability of processing plant

The applicability of the processing plant must be evaluated.

- a. Feed intake must be protected from moisture and be constructed in such way that it can easily be cleaned.
- b. When choosing material and design of machinery, equipment and fixtures it must be ensure that all parts are easy to clean efficiently.
- c. After the heat treatment the compound feed must be led as direct as possible to the cooler, and be chilled to storage stability. Line and tower cooler must not be used. Condensation in the cooler must be avoided.
- d. Air used in coolers and pneumatic transport of heat-treated compound feed must be taken from a suitable location, where it is protected against dust from feed materials and non-heat treated compound feed. The contents of other impurities must be low. The compound feed must be chilled to storage stability.
- e. If coating takes place after chilling, the coater must be designed in such way that condensation and coatings are minimised, and cross contamination is avoided (the coater may be placed in a separate room).
- f. Conveyers and elevator bottoms located after the heat treatment in the processing line must be accessible for inspection and cleaning.
- g. Compound feed that has not reached the correct temperature must be led around the cooler for re-heat treatment or destruction.
- h. A complete physical separation of clean and unclean zones at the production plant must be established.

6. Heat treatment

- a. All compound feed intended for poultry must be heat treated. During the process a minimum temperature of 81°C must be reached momentarily.
- b. The heat treatment process can be controlled as follows:
 - Flour temperature, if it can be documented that a temperature of 81°C has been reached in one point during the heat treatment process.
 - Temperature measured during the heat treatment process where a temperature of minimum 81°C is reached.
- c. The controlling temperature must be measured and recorded continuously (as a minimum once every minute unless an exemption is granted by the reference group). If the flour temperature is used as control, it must be verified through measurements at least every second hour that a temperature of 81°C is reached in one point at least during the heat treatment process. If TAD measurements are applied, measurements must be carried out every fourth minute as a minimum.
- d. A calculated pellet temperature is too uncertain and cannot be accepted.
- e. It must be possible to take a sample for manual measurement of the feed in one point during the heat treatment process to verify that a temperature of 81°C has been reached.
- f. Compound feed that has not reached the required temperature must be led round the cooler for renewed heat treatment or destruction. This must be controlled automatically according to the set control temperature. From the temperature documentation it must appear if the feed has been led direct to cooler or round the cooler.
- g. Temperature sensors must be portable in order to test them against a calibrated thermometer. The companies are liable to present documentation for the control exercised. The applied thermometers shall be calibrated according to the approved self-monitoring scheme. The applied thermometer may not deviate by more than max. 1°C from the calibrated thermometer.
- h. The recorded temperatures must be filed six 6 months as a minimum and must be available to the external auditor and the Danish AgriFish Agency.

7. Additives after heat treatment

All enzymes, minerals or vitamins that are to be added after the heat treatment must be purchased with an accompanying certificate that documents that the article is salmonella-free.

Dosage of feed additives to cooled pellets is a critical point that may cause contamination with salmonella. In particular, that applies to water based additives. If dosage is made after pelleting, daily cleaning of equipment and premises in which dosage of aromatics and other additives takes place will usually be required.

8. Cleaning and disinfection procedures

- a. The companies must prepare a programme for cleaning and disinfection (to the extent that disinfection is required).
- b. The description of the programme must as a minimum include information on method, frequency and cleaning agents used.
- c. Cleaning must remove remains and coatings as they can cause accumulation of bacteria, including salmonella. That, in particular, applies to damp spots, such as spots implying a risk of condensation.
- d. Cleaning should be carried out without use of water, and primarily consist in a mechanical removal of remains and coatings.
- e. Dust is removed by vacuum cleaning. Cleaning by means of compressed air must solely be used in silos.
- f. Disinfection should solely be used on cleaned surfaces. Only broad-spectrum disinfection agents should be used.
- g. Ongoing records on cleaning must be kept.

Annex 6 contains a list of the required minimum frequency of cleaning of the section of the plant, including transport material, located after the heat treatment in the production cycle. The cleaning frequency in other areas of the plant is laid down by the company itself.

9. Risk of cross contamination

Critical points for cross contamination hazards between raw feed products and compound feed must be laid down. Subsequently measures to separate the two areas must be defined.

Rules on personnel traffic between the different sections of the plant must be laid down. In particular, focus must be on how to avoid transmission from non-heat treatment to heat treatment section. Potential dressing procedures prior to entering the cooling section and the finished product storage must be specified in these rules.

Air intake to the cooler must be placed in such way that air pollution hazards from raw feed products in unclean zones are avoided.

10. Revision of self-monitoring scheme

The company must review and revise its self-monitoring scheme every second year as a minimum.

Changes to the scheme must be submitted to the external auditor. Re-approval will be considered during the next audit inspection.

The company is liable to inform the external auditor of any changes of equipment or other things that may have an impact on the identification or control of critical control points, and the company must revise its self-monitoring scheme accordingly.

The reference group must be informed during a review of the audit report at a reference group meeting.

11. Transport

All transportation of bulk poultry feed for commercial poultry production is encompassed by this Code of Practice. As feed can be transported in different ways, this Code of Practice is divided into two sections:

- Transportation carried out by animal feed producers
- Transportation carried out by poultry producers or third parties

Poultry slaughterhouses and egg packing stations are obliged to ensure that all transportation of feed is carried out in compliance with this Code of Practice. Guidance concerning transportation of feed must be included in the companies' self-monitoring schemes. All transport vehicles must be closed units and it must be possible to clean and disinfect them as well as they must be approved as units of pressure.

Audits of the transport area are generally carried out for the individual transport unit as concerns sampling and assessment of results hereof, whereas assessment of the logistic control of the transportation of poultry feed is carried out on the basis of auditing the logistics department of each individual company according to the rules laid down in this Code of Practice.

The reference group may deprive a transport unit of its certificate of approval as a consequence of KO (knock out). This is done based on feedback from the external auditor.

An updated list of approved transport units/companies must be available. This list must include the name of the owner and the vehicle registration number of the means of transportation (lorry and trailer). This list must be available on the same terms as described for the list of feed producers with a certificate of approval in section 4 of this Code of Practice. It is the transport company's responsibility to keep all information in this list updated at any time.

11.1 Transportation carried out by feed producers

- a. As part of its self-monitoring scheme the company must prepare a hygiene control programme for all vehicles used for the transportation of poultry feed; this includes definition of cleaning procedures for all affected means of transport.
- b. The drivers must keep current records of transports, including receipts from persons in charge of all activities performed (transport, cleaning and disinfection)
- c. The log for the current month must be kept at/in the transport unit. Immediately before the end of the month, records from all transport units engaged in the transportation of poultry feed are collected for central filing at the logistics department.
- d. The logistics department must be able to provide, at any time, an account of the records and transports performed during the current month for the abovementioned transport units. Besides, a list must be available of the total number of vehicles that transport poultry feed as well as logs and updates of departure and access of vehicles.
- e. Once a month as a minimum test results for the prevalence of salmonella must be presented for each transport unit. The test results must be filed centrally and must be accessible for the external auditor.
- f. Procedures and manuals for transport must be available, including instructions to the driver.

- g. Transport units used for the transportation of poultry feed must solely transport feed from feed mills that produce feed under this Code of Practice.
- h. If a transport unit has been used for transport of other types of feed, such as raw products for processing of poultry feed or feed not processed under the present Code of Practice, such transport unit can solely change status based on completed cleaning and disinfection, including receipts in the log.
- i. If a transport unit is used for moving compound feed at farms or for the collection of compound feed, whole grain and whole seeds, the transport unit must be cleaned and disinfected; a receipt is to be entered in the log, before the unit can be used for transportation of poultry feed again.
- j. Vehicles with a closed hold must be used for transport of poultry feed.

11.2 Transportation carried out by poultry producer or third party

- a. The party in charge of transport must establish a hygiene control programme for all means of transport used for the transportation of poultry feed, including detailed cleaning procedures for all means of transport.
- b. The party in charge of transport must keep current records of transports, including documentation of activities performed (transport, cleaning and disinfection).
- c. Records for the current month must be kept at/in the transport unit.
- d. The party in charge of transport must, at any time, be able to give an account of the records and transports performed in current month for above stated transport units.
- e. Test results of salmonella testing must be available for each transport unit. The samples must be taken frequently and as a minimum once a month if the vehicle has been used for transport. The test results must be filed and be presented on request.
- f. Transport units transporting poultry feed must solely transport feed from feed mills that produce feed under this Code of Practice.
- g. If a transport unit has been used for transport of other types of feed, such as raw feed products for processing of poultry feed or feed not processed under the present Code of Practice, such transport unit can solely change status based on completed cleaning and disinfection, and records must be entered in the log.
- h. If a transport unit is used for moving compound feed internally at the farm premises or collection of compound feed and whole grain and seeds, cleaning and disinfection must be made, and records must be entered in the log, before the unit can be used for transport of poultry feed again.
- i. Moving of feed from silos must only be carried out by approved transport units.
- j. Only vehicles with closed hold must be used for the transportation of poultry feed.

11.3 Producer's own transport

The producer's own transport of whole grain and whole seeds from his own crop or from joint farms must be carried out using transport units that have been entirely cleaned before transport. The transport unit must be disinfected if there is a risk that it might have been contaminated, e.g. after transporting animals or animal produce, or other produce that might constitute a particular risk of being salmonella-contaminated.

11.4 Transportation of other products than poultry feed in a transport unit used for the transportation of poultry feed

Because transport units used for the transportation of poultry feed can be and are used for transporting other products, the following section is a guideline showing which other products may be transported and which requirements will have to be met.

Examples of other products than heat-treated poultry feed:

- a. Whole grain or whole seeds, which have **not** been in contact with feed during the entire handling process (transportation, storage and general handling)
- b. Products produced at feed producing companies that have not joined this Code of Practice for the production of poultry feed (in relation to this Code of Practice such companies are referred to as non-approved feed producing companies)
- c. Whole grain or whole seeds, which are exposed to the risk of contact with feed during storage or transportation
- d. Raw feed products
- e. Feed that is taken back from a farm or feed that is moved at a farm, regardless of the feed producing company's original status under this Code of Practice
- f. Products, which are not feed or intended for feeding purposes

If products as described above have been transported, the following rules have to be observed:

- a. If a company wants to use a vehicle for the transportation of poultry feed after this vehicle has been used for the transportation of whole grain and/or whole seeds, which have **not** been in contact with feed during the entire handling process, this transport vehicle must be inspected for cleanliness and, if necessary, cleaned, and the process must be recorded in the log before it is allowed to transport poultry feed again.
- b. Means of transport, which are used for the transportation of other products than feed from approved feed producing companies or for the transport of whole grain or whole seeds as described above, must be cleaned and disinfected before they are allowed to transport feed from approved feed producing companies, and the process must be recorded in the log, before it is allowed to transport poultry feed again.

12. Suitability of receiving conditions

Recipients of heat treated poultry feed shall provide proper hygienic reception facilities to prevent contamination of feed, vehicles and equipment during the unloading process. Co-operators of the production such as slaughterhouses, egg packing stations and trade organisations must ensure that the recipient of the feed observes the below stated requirements as a minimum. The reference group keeps an eye on the ongoing status in the area.

- a. Roads to and from the place of unloading must be passable for vehicular traffic, and the unloading area must be well drained and made of solid material.
- b. Fixed installations must be equipped with a blind cover, and be constructed in a way that condensation is prevented.
- c. All recipients must install their own fixed receiving hose on the relevant silos, as stated in Annex 7. The unloading hose must be stored close to the place of unloading, and after use the hose must be stored in such way that it is protected from rodents, damp and dust. It is recommended to use stainless steel hoses. If no unloading hose is available, the applied unloading hose will be left after delivery, and the costs hereof will be charged to the receiving farm.
- d. The area round the feed silos must be kept tidy, and cannot be used for placement of dead animals, manure or other substances, neither from the chicken houses nor other places. Feed waste and remains shall be removed immediately after each unloading process.
- e. Poultry manure must be placed in such way that the transport vehicle does not come into contact with it on approach and exit from the place of unloading.
- g. A suitable, closed rubbish bin must be placed at the feed silo.

If these requirements are not observed, the reference group have the authority to approach the co-operating parties involved requesting them to correct any faults.

In the case of an outbreak of other – compulsory notifiable as well as not notifiable – diseases in the poultry production reference is made to Annex 11.

13. Blending of feed

13.1 Requirements to home blenders who comminute the feed

Home blenders who comminute the feed are producers who purchase raw feed products, feed additives, etc. and comminute whole grain and whole seeds and blend them.

- a. Solely whole feed and feed additives, etc. from an approved animal feed producer holding a certificate of approval may be used for blending the compound feed. If oleaginous seeds or products hereof are used, they have to be heat-treated according to the requirements in this Code of Practice.
- b. Whole grain and whole seeds of own crop may be used. Whole grain and whole seeds are understood as whole grain and whole seeds grown and threshed in own field and brought direct to own gas-proof silo or other own storage that complies with the feed legislation.

Whole grain or whole seeds threshed at another owner's field, but brought direct to own gas-proof silo or other storage that complies with the feed legislation is also considered as grain of own crop.

- c. The grain must be stored in gas-proof silos or other good and sound storage facility. Storage facilities used for the storage of feed must be secured against birds, rodents and other vermin. Documentation for pest control must be available.
- d. Grain, raw feed products, complementary feeding stuffs, etc. must be stored separately.
- e. The pit must be protected against rain water and groundwater.
- f. Mill and transport systems must be closed and kept dry.
- g. The mill and the premises in which it is placed must be kept tidy and clean.
- h. The grinded grain must not be stored, but must be used immediately after grinding and mixture with complementary feeding stuffs.
- i. In the case of salmonella detection in a poultry stock that is fed with feed produced according to this section, the entire plant has to be inspected by an approved auditor, and a minimum of five samples are to be taken from critical points for testing of the prevalence of salmonella.
- j. The home blender bears the expenses incurred by putting one of the audit companies into action.
- k. No continuous routine inspection/supervision or control of home blenders in this category is made.
- l. The responsibility that above stated requirements are observed lies with the egg packing stations and the poultry slaughterhouses. It is also within their responsibility to summon the external auditor in cases of salmonella detection.

13.2 Requirements for companies using whole grain/seeds for commercial stock

- a. It is presumed that they use whole grain or whole seeds free from salmonella. Harvest and special transport as well as storage of whole grain and whole seeds, however, may result in transmission of salmonella.
- b. When whole grain and whole seeds are delivered to the animal feed producer from a raw material pit and via a transport system, residues of other potentially salmonella-carrying raw materials are transported along with the whole grain and whole seeds.
- c. Storage facilities used for the storage of whole grain and whole seeds must protect the goods from birds, rodents and other vermin. Pest control documentation must be available.
- d. Whole grain and whole seeds must be stored separately from other raw materials.
- e. Section 11 of this Code of Practice, dealing with the transportation of compound feed, also applies to the transportation of whole grain and whole seeds.
- f. As an element of the factory's hygiene control programme an approved flow diagram and process description of the transport systems must be available. Descriptions are made of the cleaning of transport systems, and the cleaning carried out is recorded.
- g. The above descriptions shall include all transport systems within the responsibility of the factory (including ships, unloading of ships, transport to and from storages and collection of grain from the farmer).
- h. Whole grain and whole seeds shall be delivered at the factory through a separate inlet and transported directly to the intended silos via a separate conveying system.
- i. Alternatively, the raw material inlet and the conveying system have to be cleaned with whole grain and whole seeds before delivery into the silo. This can be done by running minimum six tons of whole grain or whole seed through the system. This amount is removed immediately before the silo and conveyed to heat treatment. Documentation of this cleaning process must be available, stating also the number of kilos; a visual inspection must be included to prove that all whole grain or whole seeds are free from other raw materials.

13.3 Use of whole grain in the litter in parent herds

- a. Feeding with whole grain in a parent flock is allowed provided that solely grain grown, harvested and threshed in the producer's own field and brought direct to own gas-proof silo or other storage is used.
- b. Grain grown, harvested and threshed in another producer's field and brought direct to own gas-proof silo or other storage can also be used.
- c. The responsibility that the current rules are observed, cf. other plans of action and trade agreements, lies with the hatcheries.

14. Roughage, etc.

Hay, fresh green forage, raw fruit and vegetables as well as silage products considered salmonella-free may be used.

**Production pyramid for broiler chicken and table egg sectors
Broiler chicken sector in Denmark**

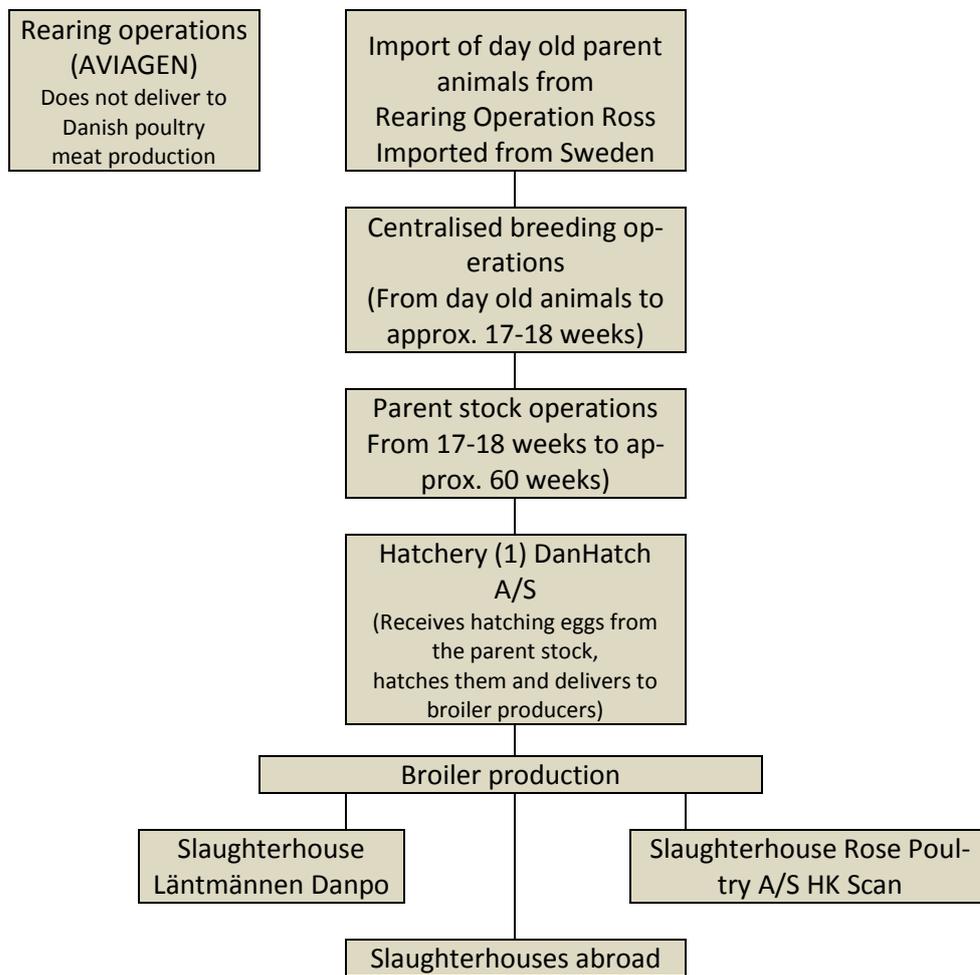
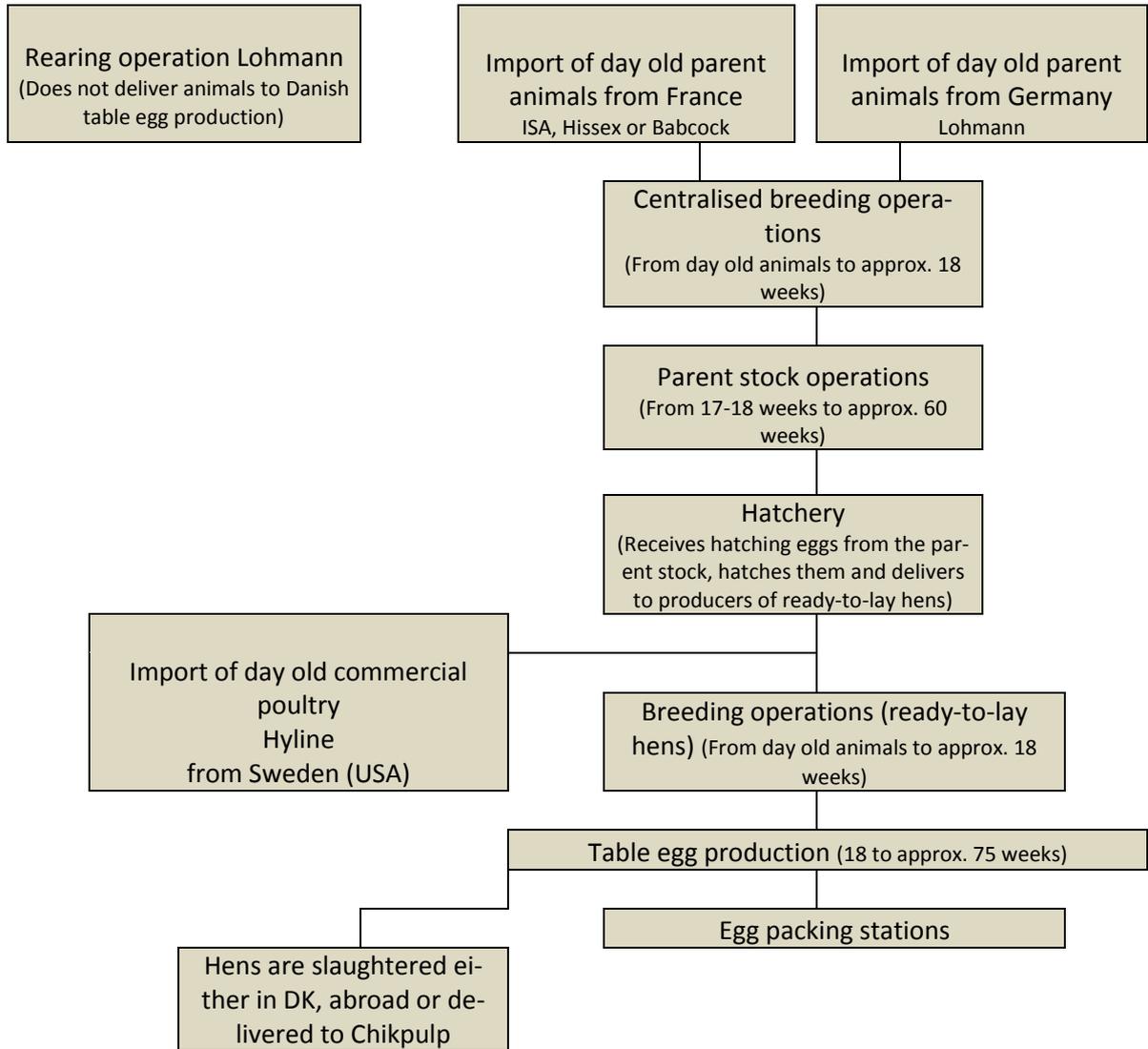


Table egg sector in Denmark



DEFINITIONS/VOCABULARY

1. Corrective actions

A corrective action is an action taken if surveillance results prove that critical limits have been exceeded. These actions must include correction of mistakes, handling of product and prevention of repetitions.

2. Deviations

Exceeding fixed critical limits

3. Compound feed, heat-treated

Finished feed

4. Raw feed products

Raw materials

5. Approved self-monitoring scheme

In this Code of Practice an approved hygiene inspection is considered the part of a company's self-monitoring scheme that has been approved by the reference group under this Code of Practice.

6. Critical control points

In the Code of Practice critical control points in the production are considered a place, a working process, a processing phase or a link in the production chain that, when it is controlled, will eliminate or reduce a risk factor to an acceptable level. In this case the risk is the prevalence of salmonella in the compound feed. A critical control point is characterised by recordable parameters.

7. Critical limit

A value/a criterion that separates the acceptable from the unacceptable

8. (To) control

To take all necessary precautions to ensure and maintain compliance with the criteria laid down in the hygiene control programme

9. Controlling measures

Activities required to prevent or eliminate risk factors or reduce their prevalence to an acceptable level

10. Verified sample

Detection of salmonella that has been verified by culturing an isolate and a serotype determination

11. Operator

Legal or physical person who commercially produces, packs, stores, transports or sells (including resells) additives, products, adds proteins or nitrogen, pre-blends, compound feed or raw feed products and who is registered at the authorities under the consolidated act.

k. Production unit

A unit at which feed is produced

l. Transport unit

A unit that transports feed

m. Comminution of feed

Grinding or other way of physically reducing the product

Annex 3

Mapping out risks, assessment of risks and determination of critical control points

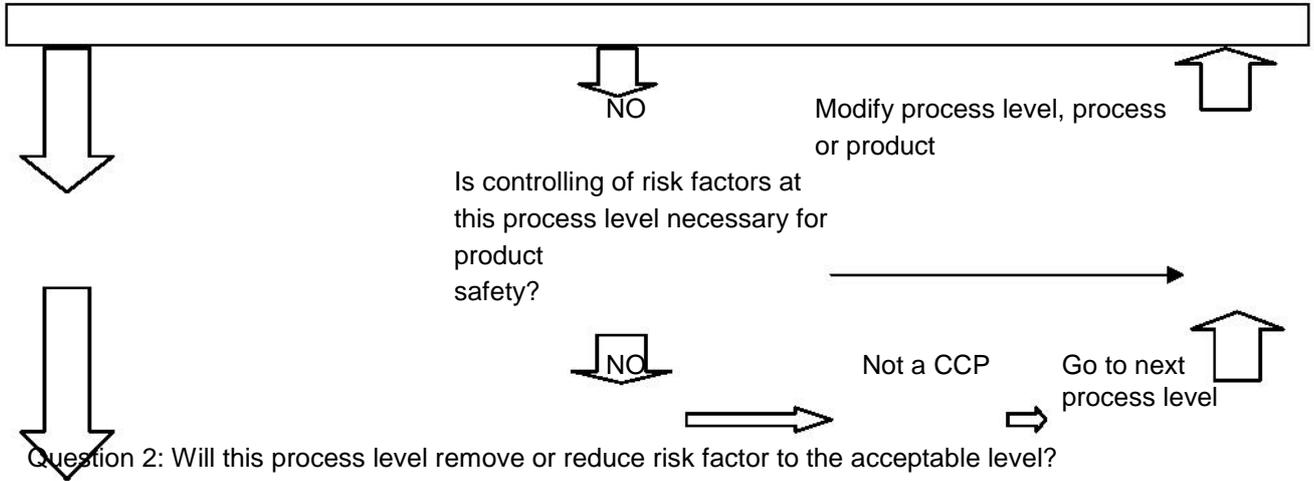
A number of examples are shown in the table as an illustration.

Level in flow diagram	Risk	Probability	Seriousness/ consequence	Controlling measures	Critical control points				
					1	2	3	4	Yes/no
Xx	Transmission of salmonella from raw feed products to finished feed	High	High	Heat treatment	Y	Y	-	-	Y
Yy	Contamination of feed blends with salmonella	High	High	Change of cloth at the passage between raw feed area and feed blend area	Y	N	Y	N	N

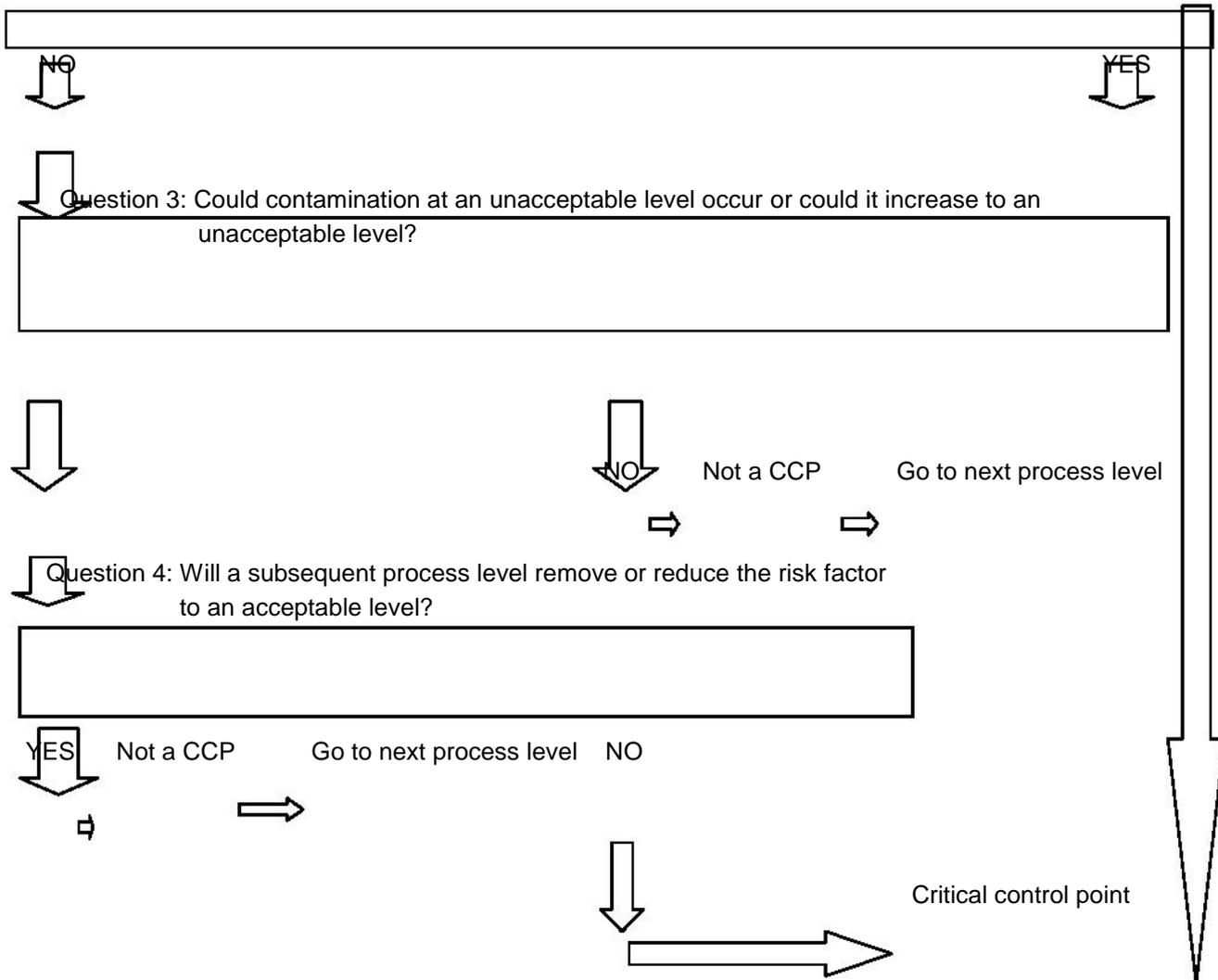
Decision tree

Answer each question in succession for each process level for each identified risk factor following estimation of seriousness and probability:

Question 1: Are controlling measures for risk factors in place?



Question 2: Will this process level remove or reduce risk factor to the acceptable level?



Surveillance of critical control points

Examples from Annex 4 are continued in this table.

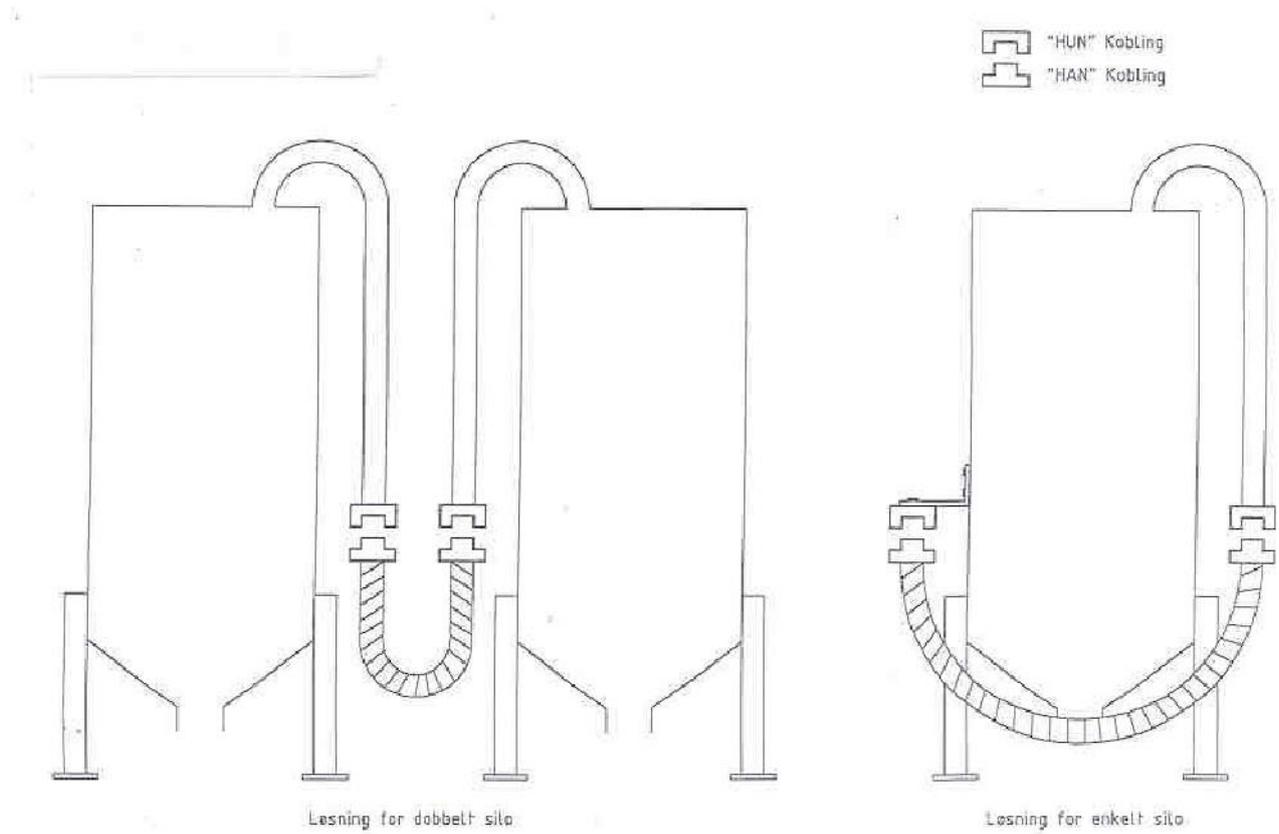
Level in flow chart	Critical control point	Critical limit	Monitoring	Registration	Corrective actions
Xx	Heat treatment	Minimum 81 °C	Measured with calibrated sensor, frequently or minimum every second hour	Measured temperatures and time of measurement	Feed that has not reached 81 °C is led back to the blender via the return device
Yy	Physical separation of raw feed products and feed blends	Compulsory change of cloths	Receipt for change of cloths	Receipt for change of cloths	Remark in the case of failure to change cloths/receipt Better education of staff

Survey of control and cleaning programme in the section of the plant that is located after the heat treatment section

Below is a survey of the frequency required as a minimum:

<u>Cascade blender:</u>	Cleaning at the end of operations (daily or weekly)
<u>Pellet press:</u>	Daily cleaning and potential disinfection of shield and pipe to cooler
<u>Return device:</u>	Weekly cleaning and potential disinfection of moist surfaces
<u>Coolers:</u>	Daily cleaning and potential disinfection of moist surfaces Less frequent cleaning and disinfection may be adequate, provided that the coolers are free from coating during daily inspection
<u>Granulator and screener:</u>	Cleaning once a week
<u>Fat coating and adding of additives:</u>	Daily cleaning
<u>Transport systems:</u>	Inspection and cleaning minimum once a week (end of conveyor, bottom of elevator, etc.)
<u>Filters:</u>	Filters from various collecting systems must be cleaned and/or changed regularly.
<u>Finished blend containers:</u>	Inspection and cleaning as required in connection with each emptying process

Sketch of hose position at feed silos:



Solution for double silo

Solution for single silo

Translation: "hun" kobling = "female" coupling
"han" kobling = "male" coupling

Approval of external auditor

When the reference group approves external auditing companies that conduct external audits, the reference group must ensure that the following minimum requirements are met:

Written procedures must be available for:

1. Performance of hygiene control
2. Taking of samples
3. Preparation of control reports
4. Feedback to companies, including a reaction if the company fails to observe this Code of Practice
5. Follow-up on previous deviations and reflective action

The external auditor must be based on an organisation/structure with responsibilities and authorities that ensure that the control is conducted. This involves, for instance, education and training of personnel that conducts the hygiene inspection. Inspectors who conduct process controls must as a minimum have the following verifiable qualifications:

1. Knowledge of current feed legislation and feed hygiene directive
2. Insight into process technology at feed producing factories
3. Knowledge about identification and determination of critical control points related to feed hygiene
4. Relevant microbiological know-how
5. Verifiable know-how about HACCP
6. Verifiable knowledge about auditing
7. Impartiality in relation to the factories they inspect

The laboratory that conducts the tests must be accredited according to ISO 17025 and time limits must be specified for the time between sampling and testing, depending on the test parameters (max. 24 hours).

The Danish AgriFish Agency is in charge of the third party auditing of the auditing companies. The reference group continuously assesses the work performed by the external auditors by reviewing the reports at the reference group meetings.

Actions

In the case of deviations found the following **actions** are possible:

1. KO: Knock out
2. Major deviation
3. Minor deviation

Status G: Certificate of approval

Status Bg: Conditional certificate of approval

Reaction implies change of delivery status, depending on the character of the deviation the change may be from Status G to Status Bg or from Status Bg to withdrawal from the Code of Practice. If the deviation is assessed as a KO, the company/transport unit will immediately be deprived of both status G and status Bg, thus it will no longer be part of the scheme. The chairman will inform the company accordingly.

Criterion	During inspection	Acceptance criterion	Action	Reaction
Scrape samples from production equipment	Scrape samples are taken from critical points in the production equipment. Minimum 5 samples are taken per line. The samples are tested for salmonella according to current regulations.	Salmonella not detected in the scrape samples. The test is positive when verified as positive during culturing.	KO	Immediately upon detection The external auditor contacts the company and the chairman of the reference group.
		Coliform bacteria: ≤ 10,000 per g detected in one or more scrape samples during 2 successive inspections	Major deviation	Immediate change of status after second detection may come up. The external auditor contacts the company and the chairman of the reference group. However, the status can only be changed from G to Bg. If the company holds a Status Bg, the reference group considers actions towards the company.
		Total viable count: Directional limit < 1,000,000 per gram Used for interpretation of other microbiological results compared with the visual evaluation of cleaning standard in the company and/or transport unit	Minor deviation	After repeated requests to improve cleaning standards and/or concurrent gross negligence of other minor deviations
Heat treatment	Control of pellet temperature	Min. 81 °C	KO	If the heat treatment requirements have not been observed the chairman of the reference group must be notified immediately. Concurrently the company is requested to come up with an explanation and present an action plan for corrective action.
	Random check of repelleting/return device/bypass	Repelleting at a pellet temperature below 81 °C		
	Random check of data recordings	Documentation that the heat treatment requirements have been observed		
	Control of calibrating status for controlling temperature and plant thermometer(s)	Observed calibration frequency and proper correction of controlling temperature sensor		

Cleaning standard	Visual evaluation during hygiene inspection	Clean and tidy	Minor deviation	In the case of repeated requests and/or concurrent detection of one major deviation or several minor deviations
	Registration	Observed	Minor deviation	In the case of repeated requests and/or concurrent detection of one major deviation or several minor deviations
Cross contamination	Conduct to avoid cross contamination	Observed	Major deviation	In the case of repeated requests and/or concurrent detection of other major deviations and/or several minor deviations
Self-monitoring	Microbiological self-monitoring control data	Frequency and number observed	Major deviation	In the case of repeated requests and/or concurrent detection of other major deviations and/or several minor deviations
	Follow-up on deviations according to the company's own acceptance limits	Documentation of action taken is available	Major deviation	In the case of repeated requests and/or concurrent detection of other major deviations and/or several minor deviations
Transport unit used for the transportation of finished feed	Scrape samples from critical points in the containers Samples from transport vehicles are taken in addition to the 5 taken from the line	Salmonella not found in the scrape samples	KO	Immediately on the unit in case of detection during self-monitoring or by external auditor Chairman of the reference group is to be contacted.
Logistics in connection with transportation of finished feed	Control of logs	Requirements for transport for non-HACCP approved companies and/or transport of raw feed products has been observed.	KO	Immediate contact to the owner of the unit after detections by the external auditor
	Control of recordings for cleaning and disinfection of transport vehicles	Cleaning and disinfection frequency has been observed.	Minor deviation	After repeated requests

HACCP (Hazard Analysis Critical Control Points)

The company's self-monitoring scheme must include a hygiene control programme based on HACCP principles. The responsibility for carrying out risk assessment, determination of critical control points and limits, surveillance programme and determination and implementation of corrective actions has to be specified.

1. Risk assessment

A list must be made showing the potential risk factors that may induce a prevalence of salmonella in the compound feed during each phase of the production process. For each point the probability that something goes wrong at the individual point must be assessed as well as the seriousness hereof. The table in Annex 5 is intended as a help in this assessment.

2. Determination of critical control points

The critical control points shall be identified on the basis of the process description in section 4 and the risk assessment described above. For this purpose the decision tree outlined in Annex 5 can be used. By reviewing all identified risk factors according to the procedure in the decision tree, the risk factors that are considered critical control points can be identified. These can be noted in the table in Annex 4.

A critical limit has to be set for each critical control point. This limit must be observed in order to ensure that the point is controlled. Exceeding the limit means that the point is out of control, and corrective actions have to be carried out. The table in Annex 5 can be used to make notes about this.

When specifying the control points reference must be made to the points in the flow diagram.

3. Surveillance of critical control points

For each critical control point it must be evaluated how to monitor that the specified limit is observed.

4. Corrective action

When the surveillance shows that the critical limit for a control point is exceeded, it must be evaluated which corrective action should be taken. The table in Annex 9 can assist in this evaluation.

The responsibility for the implementation of corrective actions must be specified and should also be documented in the table in Annex 9. Actions carried out must be recorded.

Special circumstances in the case of outbreak of non-notifiable, virulent diseases

The following rules must be observed when driving around properties hit by an outbreak of virulent poultry diseases (flocks under suspicion as well as virulent flocks):

1. Prior to entering the customers unloading site, wheels and undercarriage must be sprayed with a disinfectant.
2. Use disposable gloves and disposable footwear during the entire delivery process. A rubbish bin must be available!

The customers own hoses **must** be used. If the customer has no hoses available, the hoses from the vehicle can be used! **These hoses are to be left with the customer**; the transport/logistic department charges the hoses to the customer!

3. Hose couplings must be sprayed with a disinfectant before they are connected.
4. After the unloading process hose couplings and air inlets must be disinfected and sprayed with disinfectant – into the hose, where the feed comes out.
5. Undercarriage, wheel wells and wheels are to be disinfected before the vehicle leaves the property, i.e. all parts that have been in contact with the ground have to be disinfected.
6. Disposable gloves and footwear are dumped in a rubbish bin if a bin is available in the immediate vicinity of the site where the feed transport vehicle stops during unloading. If no rubbish bin is available at the unloading site, disposable gloves and disposable footwear is left on the spot where the vehicle stops during unloading. It will then be up to the poultry producer to remove them.
7. When the vehicle returns to the factory, the undercarriage is to be rinsed at the washing site.
8. The feed vehicle must NOT deliver poultry feed to any other stock after it has delivered feed to a virulent stock or a stock under suspicion of being virulent. After having delivered feed to a virulently or potentially virulent stock of poultry, the vehicle **must** be used for the delivery of feed to a stock of pigs before is allowed to deliver poultry feed again.

In the case of an outbreak of a notifiable disease the regulations laid down by the authorities have to be observed.

**To: The Danish Poultry Council, Agriculture & Food
Secretariat for “Code of Practice and General Operating Standards for Poultry
Feed Processing and Transportation”
Att.: Mie Nielsen Blom
Axelborg, Axeltorv 3
DK-1609 Copenhagen V**

Company Accession Declaration

The below mentioned company accepts the present Code of Practice as established by the industry agreement on this, with commencement from the 1st of January 2009 for the named production site.

Company type (tick off):

Poultry Slaughterhouse: _____
Egg Packing Station: _____
Rearing Operation: _____
Breeding Operation: _____
Parent Stock Operation: _____
Hatchery: _____
Animal Feed Producer: _____
Transport Company: _____
Manufacturer of dust bathing material: _____

Additional Company Details:

Company Name

Signature, CEO

CVR nr. / Registration number of the company

Date and Place