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FOOD AND AGRICULTURE
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WORLD
HEALTH
ORGANIZATION



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Agenda Item 6

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

Twenty-eighth Session, FAO Headquarters, Rome, Italy
4 – 9 July 2005

LIST OF PROPOSED DRAFT STANDARDS AND RELATED TEXTS SUBMITTED AT STEP 5

PROPOSED DRAFT RECOMMENDED INTERNATIONAL CODE OF PRACTICE FOR THE PROCESSING AND HANDLING OF QUICK FROZEN FOODS

Governments and interested international organizations in observer status with Codex wishing to submit comments regarding the implications which the proposed draft Code or any quality provisions thereof may have for their economic interest should do so in conformity with the *Uniform Procedure for the Elaboration of Codex Standards and Related Texts* (at Step 5) of the Codex Alimentarius Procedural Manual to the Secretary, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy (Fax: +39 (06) 5705 4593; E-mail: codex@fao.org - *preferably* -) **BEFORE 15 JUNE 2005**

BACKGROUND

1. The 27th Session of the Codex Alimentarius Commission (July 2004) agreed to proceed with the revision of the *Recommended International Code of Practice for the Processing and Handling of Quick Frozen Foods* working by correspondence on the quality provisions of the Code until preliminary adoption at Step 5 and finalization as per hygienic/safety provisions by the Committee on Food Hygiene for final adoption at Step 8. In taking this decision, the Commission accepted the offer of the United States of America to coordinate the work by correspondence on the quality provisions of the Code¹. In taking this decision, the Commission acknowledged that a Joint Meeting of the CCFH and/or the relevant commodity committees might be convened to finalize the hygienic provisions as well as those unsolved quality provisions for which it was not possible to reach consensus during the work by correspondence.

2. As a follow-up to that decision, two Circular Letters (CL 2004/39-CAC of November 2004 and CL 2005/13-CAC of March 2005) were distributed to request comments at Step 3 on those sections dealing specifically with quality provisions namely: Section 5 - Cold Chain Control: Quality Aspects or having a mixture of both quality and safety provisions where comments should address only quality provisions related to those namely: Sections 1 - Objective; 2- Definitions; 3- Prerequisite Programme; and 6 - Temperature Management in the Cold Chain².

¹ ALINORM 04/27/41, para. 172.

² Section 4 on safety aspects of the cold chain control as well as those hygienic/safety provisions contained in the remaining Sections (except Section 5) are not being considered at this stage. Hygienic/safety provisions will be considered by the Codex Committee on Food Hygiene when finalizing the Code as recommended by the Codex Alimentarius Commission.

3. In addition, CL 2005/13-CAC indicated that, when formulating comments, Codex Members and Observers should give careful consideration to the work already done within Codex (e.g. Codex Committee on Processed Fruits and Vegetables) and the ongoing work in other Codex Committees that might be relevant to the further development or simplification of the Code (e.g. Codex Committee on Fish and Fishery Products) and that in order to ensure wide agreement on the quality provisions of the Code, before sending the document to the 28th Session of the Codex Alimentarius Commission (July 2005) for preliminary adoption at Step 5 and subsequent transfer of work on finalization of the Code as per hygienic/safety provisions to the Codex Committee on Food Hygiene, Codex Members and Observers were invited to send their comments in time and to provide as much information as possible on those quality provisions as specified in paragraph 2 above, in particular, those quality provisions that require further consideration including discussion of DAP Analysis, Section 5.3 Quick Freezing Process, and other quality provisions still in square brackets. This would make sure that greater range of views are included in the revision of the Code thus ensuring finalization of all quality provisions of the Code which will facilitate its adoption at Step 5 by the next Session of the Commission.

CONSIDERATION OF THE PROPOSED DRAFT RECOMMENDED INTERNATIONAL CODE OF PRACTICE FOR THE PROCESSING AND HANDLING OF QUICK FROZEN FOODS (revision of the quality provisions)

4. The U.S. Secretariat revised the Code in light of the comments received in response to CL 2005/13-CAC and has prepared a revised text for adoption at Step 5 by the 28th Session of the Commission. The amended text is appended to this document as Appendix I. Government and international organization comments submitted at Step 3 in response to CL 2005/13-CAC are compiled in Appendix II in original language.

5. The following summarizes comments submitted in response to CL 2005/13-CAC with the exception of linguistic proposals to improve the French and Spanish texts.

General Comments

6. **Quality and safety aspects:** Concerns were expressed regarding the differentiation between “quality” and “safety” aspects as they had in response to CL 2004/39-CAC. For example, Thailand suggested that several sections e.g. Sections 1, 2, and 6 related to both safety and quality. Under Section 5 Cold Chain Control – Quality Aspects, specifically Section 5.5 Frozen Storage, France suggested that maintaining the temperature should be a CCP rather than a DAP. A number of suggestions were made by the United Kingdom that maintenance and monitoring of the equipment should be a CCP. Euro-Commerce suggested that control of the cold chain, as fundamental in the safety of quick frozen foods, is understated in the Code as presently written and is not considered a Critical Control Point (CCP). Therefore Euro-Commerce suggests a major revision of the Code.

7. The U.S. Secretariat is of the view that these matters might be more appropriately addressed with experts on safety aspects in the Codex Committee on Food Hygiene after adoption at Step 5.

Specific Comments

8. Section 2.2 - Definitions

Quick Freezing Process: No comments were received regarding the square bracketed text so the brackets were removed.

Temperature Abuse: Suggestions were made to delete the square brackets around “so that it may affect essential quality or safety of the food.” This was done.

Tolerances: The definition and bracketed text were supported. Therefore, the definition shall remain and brackets were removed.

Traceability/Product Tracing: Suggestions were made to use the text as adopted by the 27th Session of the Commission³ (July 2004) with the caveat that CCFICS is currently considering a proposal for the application of this definition. Consequently, the text was aligned with the Codex definition for traceability and the brackets were removed.

9. **Section 3.1 - Location:** No comments were made regarding the use of the bracketed term “perishable” so the brackets were removed.

³ ALINORM 04/27/41, paras. 17-20 and Appendix II.

10. **Section 3.6 Recall Procedures and Traceability/Product Tracing:** No objections to the inclusion of traceability/product tracing were received so the square brackets were removed. Several countries expressed concern regarding the term “recall” and felt that there may be some consideration given to using the term “withdrawal”.
11. **Section 5.3 - Quick Freezing Process:** No comments were received concerning the square brackets on this section so the brackets were removed.
12. **Annex 3:** Comments were received on this section, but no comments were received regarding the square bracket text specifically so the brackets were removed.
13. **Removal of other square bracketed texts:** There is little disagreement on removing the square brackets from the remaining bracketed texts so all the remaining brackets were removed.

Other comments

14. While some minor editorial changes were made for clarity, no substantive changes were made to the Code since the previous version. Other few comments regarding some text changes which are more related to hygienic/safety issues may be discussed following adoption at Step 5 by the Codex Alimentarius Commission.

STATUS OF THE REVISION TO THE PROPOSED DRAFT *RECOMMENDED INTERNATIONAL CODE OF PRACTICE FOR THE PROCESSING AND HANDLING OF QUICK FROZEN FOODS*

15. The U.S. Secretariat has revised the above-mentioned Code in light of the comments received in response to CL 2005/13-CAC and has prepared a revised text for consideration by the 28th Session of the Codex Alimentarius Commission for adoption at Step 5.

**PROPOSED DRAFT REVISED RECOMMENDED INTERNATIONAL CODE OF PRACTICE
FOR THE
PROCESSING AND HANDLING OF QUICK FROZEN FOODS**

(AT STEP 5 OF THE ELABORATION PROCEDURE)

INTRODUCTION

This *Code of Practice for Processing and Handling of Quick Frozen Foods* is a revised version of the Recommended International Code of Practice for the Processing and Handling of Quick Frozen Foods (CAC/RCP 8-1976), including Annex I-1978: Method for Checking Product Temperature, and Annex II-1983: Recommended International Code of Practice for the Handling of Quick Frozen Foods during Transport.

This Code of Practice has been modified to incorporate the Hazard Analysis and Critical Control Point (HACCP) approach described in the *Recommended International Code of Practice: General Principles of Food Hygiene* (CAC/RCP 1-1969, Rev. 3 (1997)) and its Annex: *HACCP System and Guidelines for its Application*, which are designated hereinafter as GPFH. A prerequisite programme is described in the Code covering technological guidelines and the essential requirements of hygiene in the production of quick frozen food products, which are safe for human consumption, and otherwise meet the requirements of the appropriate Codex product standards. The Code also contains guidance on the use of HACCP, which is recommended to ensure the hygienic production of quick frozen food products to meet health and safety requirements.

Within this Code a similar systematic approach to HACCP has been applied to ensure essential quality and labelling provisions of the appropriate Codex product standards. Throughout the Code this is referred to as “Defect Action Point (DAP) Analysis.” However, DAP analysis is optional and other techniques which achieve the same objective may be considered.

This Code will assist all those who are engaged in the processing and handling of quick frozen foods or are concerned with their storage, transportation, retailing, export, import and sale in attaining safe and wholesome products which can be sold on national or international markets and meet the requirements of the Codex Standards.

The Code only covers quick frozen foods. Quick frozen foods should have undergone the appropriate quick freezing process, and should be maintained at -18°C or colder at all points in the cold chain. Tolerances to this temperature may apply in accordance with national legislation.

1. OBJECTIVE

The aim of this Code is to provide background information and guidance for the elaboration of quick frozen food production and cold chain management systems that incorporate Good Manufacturing Practices (GMPs) as well as the application of HACCP. In addition, the Code may be used for training of employees of the quick frozen food industry. The national application of this Code requires modifications and amendments, taking into account local conditions and specific consumer requirements.

2. SCOPE AND DEFINITIONS

2.1 SCOPE

This Code of Practice applies to the processing, handling, storage, transportation, and retailing of quick frozen foods.

2.2 DEFINITIONS

The definitions listed below are for the purpose of this Code only:

Blanching	A heat treatment sufficient to inactivate certain enzymes.
Chilling	The process of cooling food to an appropriate temperature, often 5°C or colder, but avoiding any formation of ice crystals.

Cold chain	A term embracing the continuity of successively employed means to maintain the temperature of quick frozen foods from production to retailing.
Cold store	Premises used for the preservation of quick frozen foods under refrigerated/frozen conditions.
Defect	A condition found in a product that fails to meet essential quality and/or labelling provisions of the appropriate Codex product standard.
Defect Action Point (DAP)	A step at which control can be applied and a quality (non-safety) defect can be prevented, eliminated or reduced to an acceptable level, or the risk of mislabelling can be eliminated.
Defrost cycle	An operation intended to eliminate the frost deposit from the surface of a cooling coil.
Dehydration	Loss of moisture from quick frozen food products through sublimation.
FIFO “First in-First out”	The first to arrive is the first taken out.
Freezer	Equipment designed for freezing food products by lowering the temperature quickly.
Ice glazing	The application of a protective layer of ice formed at the surface of a frozen product by spraying it with, or dipping it into, potable water, or potable water with approved additives, as appropriate.
K coefficient	The overall coefficient of heat transfer which represents the insulating capacity of the equipment.
Potable water	Water fit for human consumption. Standards of potability should not be lower than those contained in the latest edition of the <i>Guidelines for Drinking Water Quality</i> of the World Health Organization.
Prerequisite programme	Programme required prior to the application of the HACCP system to ensure that any component of the cold chain is operating according to the Codex <i>Recommended International Code of Practice: General Principles of Food Hygiene</i> , the appropriate Code of Practice and appropriate food safety legislation.
Processing facility	Any premises where quick frozen food products are prepared, processed, frozen, packaged or stored.
Quick freezing process	A process which is carried out in such a way that the range of temperature of maximum ice crystallisation is passed as quickly as possible. The quick freezing process shall not be regarded as complete until and unless the product temperature has reached -18°C or lower at the thermal centre, after thermal stabilisation.
Quick frozen food	Food which has been subjected to a quick freezing process, and maintained at -18°C or lower in the cold chain, subject to permitted temperature tolerances, and labelled as such.
Raw material	Fresh or processed food which may be utilized to produce quick frozen food products intended for human consumption.
Refrigeration system (unit, plant)	Equipment which supplies a source of cold to reduce the temperature of food or maintain food at frozen temperature.
Return air	Air returning to the air cooler.
Temperature abuse	Warming of quick frozen food to a temperature outside any permitted tolerance, so that it may adversely affect essential quality or safety of the food.
Temperature monitoring	The act of conducting a planned sequence of observations or measurements of the temperature of the refrigerated systems and/or quick frozen foods.

Temperature Indicator (TI)	A device which on activation exploits a physical or physico-chemical reaction to produce an observable and irreversible change once a predetermined threshold temperature has been reached.
Thermal centre	The point within a piece of food which has the highest temperature at the end of a quick freezing process.
Time-Temperature Indicator (TTI)	A device which indicates the time-temperature history experienced from its point of initial activation.
Tolerances	Short term fluctuations of temperature of the product in the cold chain, within limits permitted in the Code of Practice and which do not affect safety.
Traceability/ Product Tracing	The ability to follow the movement of a food through specified stage(s) of production, processing and distribution.
Transfer point	Point at which the food is transferred between two points in the cold chain, while its temperature is maintained at regulation levels.

3. PREREQUISITE PROGRAMME

Prior to the application of HACCP to any segment of the quick frozen food chain, that segment should be supported by prerequisite programmes based on good hygienic practice (and good manufacturing practice). Prerequisite programmes should be specific within an individual establishment, and should require monitoring and evaluation to ensure their continued effectiveness.

Reference should be made to other relevant Codex Codes of Practice for further information to assist with the design of the prerequisite programmes for a processing facility.

In addition to the GPFH the following specific prerequisite provisions shall apply:

3.1 LOCATION

For quick frozen foods with perishable raw materials, processing facilities should be located as to minimize quality changes prior to freezing.

3.2 FACILITY DESIGN AND CONSTRUCTION

3.2.1 Process Plant Design

The food processing facility should be designed for the rapid processing, freezing and storage of food products. The processing facility should include a product flow that is designed to minimize process delays that could result in reduction in food quality. Many raw materials and food products are highly perishable and should be handled carefully to maintain their quality until the freezing process is initiated

3.2.2 Cold Store Design

The cold store walls, floor, ceiling, and doors should be properly insulated in order to help maintain product temperatures. It is important that the design of the cold store ensures that:

- adequate refrigerating capacity provides and maintains a product temperature of -18°C or colder;
- air is distributed uniformly around the stored foods;
- temperatures are controlled and recorded on a regular basis;
- loss of cold air and introduction of warm and humid air are avoided; and
- leaks of any refrigerant should be prevented.

3.2.3 Equipment Design and Construction

The equipment should be designed and constructed in such a manner that physical damage to the raw materials and product is minimized, e.g. by ensuring there are no sharp inside corners or projections. Freezers should be designed and constructed so that, when properly operated, they meet the requirements of a quick freezing process.

3.3 FACILITIES

In addition to the recommendations of the GPFH, the following provisions shall apply:

3.3.1 Provision of Services

3.3.1.1 Electricity

In the case of power losses, the facility should have a contingency plan to maintain the temperature of the quick frozen foods.

3.3.2 Cleaning Programmes

The recommendations of the relevant sections of the GPFH apply.

3.3.3 Pest Control Systems

The recommendations of the relevant sections of the GPFH apply.

3.4 PERSONAL HYGIENE AND HEALTH

The recommendations of the relevant sections of the GPFH apply.

3.5 TRAINING

Food hygiene training is fundamentally important, and staff should also be aware about the importance of good temperature control and maintaining quality.

3.6 RECALL PROCEDURES AND TRACEABILITY/PRODUCT TRACING

3.6.1 Recall Procedures

Effective documented procedures should be in place to enable rapid recall of any lot of quick frozen foods from the retail establishment.

The recommendations of the relevant sections of the GPFH apply.

3.6.2 Traceability/Product Tracing

Traceability/Product Tracing is essential to an effective recall procedure and is a necessary component of a prerequisite programme because no process is fail-safe.

The traceability/product tracing system should:

- enable withdrawal of products that may pose a risk to consumer health by appropriate recall procedures;
- facilitate the identification of the producing/manufacturing history (one step forward, one step back) of the product to identify the source of the problem and apply corrective measures.

4. COLD CHAIN CONTROL: SAFETY ASPECTS

Each operation in the cold chain, where appropriate, should develop its own HACCP plan. This plan should be developed in accordance with the recommendations of the Annex to the GPFH.

An example on the use of Critical Control Points (CCPs) in production and distribution of a quick frozen product, i.e. quick frozen chicken nuggets, is given in Annex 1 for illustration purposes only.

4.1 RAW MATERIALS

Freezing should not be considered as a lethal treatment for microbiological contamination in foods. However, freezing may result in the death of certain microorganisms and will inhibit the growth of others.

The raw materials used should be safe and wholesome. Reception is often considered as a CCP. For highly perishable products, such as in the example in Annex 1, temperature control at reception may also be considered as a CCP.

Producers of quick frozen food should as far as practicable implement measures to control contaminants, fertilizers, veterinary drugs, pesticide residues, industrial contaminants, etc. in raw materials according to the recommendations of the relevant sections of the GPFH.

4.2 PROCESSING BEFORE FREEZING

Raw materials may be processed in many ways before freezing, e.g. cleaning, sorting, cutting, slicing, conditioning, ageing, filleting, and heating. Whether or not such processes should be regarded as CCPs depends on the actual conditions, especially on how much time the food spends in the critical temperature zone, i.e. between 10°C and 60°C.

If storage of foodstuffs (raw material or intermediates) prior to further processing is necessary, the storage conditions, especially temperature, should be appropriate to the foodstuff concerned.

The heat treatment of many pre-cooked foods, e.g. prepared meals, should be sufficient to ensure inactivation of pathogens of most concern. In such cases, the time-temperature treatment and subsequent cooling may be considered as CCPs, see Annex 1.

If frozen raw materials are used and a thawing process is included, the thawing method should be clearly defined, and the thawing schedule (time and temperature parameters) should be carefully monitored. Selection of the thawing method should take into account the thickness and uniformity of size of the products in particular. Thawing time/temperature and food temperature critical limits should be selected so as to control the development of microorganisms. Thawing time and temperature parameters may be a CCP.

4.2.1 Treatment of Products for Parasites

In products intended for raw consumption or not fully cooked prior to consumption, freezing can be used to control hazards in fish from live helminth (nematode, trematode, cestode) parasites, such as anasakine nematodes and trichinae in pork. Freezing may serve as a control mechanism when developing HACCP plans for marinating, pickling, or other final preparations which do not supply sufficient heat from cooking to inactivate any potentially harmful parasites. The conditions required for effective parasite control using freezing include the final temperature and time of holding in the frozen state. These parameters vary depending on a number of factors which may include the host species, species of parasite, thickness of the product, and arrangement of product in the freezer

4.3 QUICK FREEZING PROCESS

When large lots of food are frozen or where the food consists of large pieces e.g. whole turkeys, it is necessary to provide spaces or channels permitting air circulation between the food or the cartons. If such air channels are not provided, the very mass of the food may be such that in spite of rapid air blast and low air temperatures, the inner parts of the lot chill and freeze slowly. It is important that the thermal centre of the product is chilled as quickly as possible to prevent the outgrowth of pathogenic microorganisms or the production of microbial toxins. Freezing time may be a CCP.

5. COLD CHAIN CONTROL: QUALITY ASPECTS

The Code is intended to cover not only safety aspects of quick frozen foods but also other aspects of production including the essential product quality and labelling provisions as described in product standards developed by the Codex Alimentarius Commission. Therefore, Defect Action Points (DAPs) are included in the Code. In the determination of DAPs, quality parameters are considered at the various steps by applying a systematic approach.

An illustrative example on the use of DAPs in production and distribution of a quick frozen product, i.e. quick frozen chicken nuggets, is given in Annex 2. The approach for DAP analysis is optional and other techniques, which achieve the same objective, may be considered.

5.1 RAW MATERIALS

Freezing cannot improve quality, and it is necessary to use raw materials of optimum quality. Products to be frozen should be selected according to their freezing suitability.

Possible chemical or biochemical changes should be minimized by appropriate temperature control. If frozen raw materials are used and a thawing process is included, the thawing method should be clearly defined, and the thawing schedule (time and temperature parameters) should be carefully monitored. Selection of the thawing method should take into account the thickness and uniformity of size of the products in particular. Thawing time and temperature parameters may be a DAP.

5.1.1 Microbiological Aspects

Initial microbial numbers in products to be frozen should be kept as low as possible as this helps to obtain an appropriate storage life, by reducing problems with, for instance, off-taste, undesirable flavours or colours during frozen storage.

5.1.2 Other Raw Materials Quality Aspects

5.1.2.1 Other Quality Measures

To minimize deterioration, raw materials should be cooled and stored under appropriate conditions (e.g. pre-cooling) or transported and frozen in the shortest time possible.

Procedures should be in place to ensure quality of incoming materials.

Producers should have procedures in place to sort and segregate foods and food ingredients, which are evidently unsuitable for further processing.

5.2 PROCESSING BEFORE FREEZING

Raw materials may be processed in many ways before freezing, e.g. cleaning, sorting, cutting, slicing, conditioning, ageing, scalding, filleting, and heating. Consideration should be given with regard to any of these processes whether or not they should be regarded as DAPs.

Blanching is often used in the production of frozen vegetables and other products to inactivate enzymes that would cause quality problems (taste, colour) during frozen storage. The blanching schedule should be determined to ensure the desired quality outcome, and may be a DAP.

Glazing, to limit dehydration during storage below 18° C should be addressed.

If storage of intermediate ingredients prior to further processing is necessary, the storage conditions, especially temperature, should be appropriate to the foodstuff concerned.

If frozen intermediate materials are used in processing, temperature control and monitoring should be applied as appropriate.

5.3 QUICK FREEZING PROCESS

The quick freezing process should be performed in such a manner as to minimize physical, biochemical and microbiological changes, by taking into account the freezing apparatus and its capacity, nature of the product (conductivity, thickness, form, initial temperature) and volume of production. With most products this is best achieved by ensuring that the product passes quickly through the temperature range of maximum ice crystallization, usually -1°C to -5°C at the thermal centre of the product.

The quick freezing process should not be regarded as complete until and unless the product temperature has reached -18°C or colder at the thermal centre after thermal equilibration. On exit from the freezing apparatus, the product should not be exposed to high humidity and/or warm temperatures, and should be moved to a cold store as quickly as possible. The same applies to products that are retail packed after the quick freezing process.

5.4 PACKAGING AND LABELLING

In general, the packaging should:

- protect the food against microbial and other contamination;
- protect the sensory and other quality characteristics of the food;
- protect the product against dehydration; and
- not add to the food any substance which may influence the quality of the food.

The packaging or re-packing of quick frozen foods should be carried out in such a manner that an increase in temperature of the quick frozen foods does not affect the quality of the product.

Packed quick frozen foods should comply with the requirements of the *Codex General Standard for the Labelling of Prepackaged Food* (CODEX STAN 1-1985, Rev. 1-1991).

5.5 FROZEN STORAGE

Cold stores should be designed and operated so as to maintain a product temperature of -18°C or lower with a minimum of fluctuation, see section 3.2.2. The temperature of the cold store may be a DAP.

Stocks should be rotated to ensure that the products leave the cold store on a "First in-First out" basis (FIFO).

5.6 TRANSPORT AND DISTRIBUTION

The transport of quick frozen foods should be carried out in suitably insulated equipment, which maintains a product temperature of -18°C or lower. The product temperature during transport and distribution may be a DAP.

Vehicle compartments or containers should be pre-cooled prior to loading. Care should be taken not to impair the efficiency, or reduce the refrigeration capacity.

The user of the vehicle or container should ensure:

- adequate supervision of product temperatures at the moment of loading;
- effective tight stowage of the load in the vehicle or the container to protect the cargo against heat entering from outside;
- efficient operation of the refrigerating unit during transit, including the correct thermostat setting;
- an appropriate method of unloading at the points of arrival (particularly the frequency and duration of door openings);
- proper maintenance of the insulated body and the refrigeration system.

A temperature rise of the product during transport to -15°C may be tolerated. However, any product with a temperature higher than -18°C should be cooled to -18°C as soon as possible either during transport or immediately after delivery.

Loading into and unloading from vehicles and loading into and unloading from cold stores should be as fast as practicable and the methods used should minimize product temperature rise.

Distribution of quick frozen foods should be carried out in such a way that any rise in product temperature above -18°C is kept to a minimum, within the limit set by National Legislation, and should not, in any case, exceed -12°C in the warmest pack. After delivery, the product temperature should be cooled to -18°C as soon as possible.

5.7 RETAIL SALE

Quick frozen foods should be offered for sale from refrigerated cabinets designed for the purpose. Cabinets should be capable of maintaining and be so operated as to maintain a product temperature of -18°C . A rise in product temperature may be tolerated for short periods, with any rise above -18°C kept to a minimum, within the limit set by National Legislation, with the temperature of the warmest pack not exceeding -12°C . Temperature in the cabinet may be a DAP.

Display cabinets should be equipped with an appropriate temperature measuring device, see Annex 3, section 1.4.

Cabinets should be located so that the open display area is not subject to draughts or abnormal radiant heat (e.g. direct sunlight, strong artificial light or in direct line with heat sources).

Defrost cycles should be programmed in such a way that, as far as possible, defrosting takes place outside peak shopping periods.

The content of the cabinet should never be stocked outside the load line.

Stocks should be rotated to ensure that the products are sold on a "First in-First out" basis (FIFO).

The retail establishment should have an appropriate back-up storage room for quick frozen foods.

5.8 TRANSFER POINTS

Attention should be paid to moving quick frozen foods as rapidly as is reasonably practicable from cold store to vehicle/container, or from vehicle/container to holding store, or from holding store to display cabinets. Often, transfer of responsibility (ownership) occurs at the same time.

- Quick frozen foods should not be left for any significant length of time at ambient temperature and humidity. It is recommended to use a temperature controlled area (dock, loading and unloading platform) for all external handling of quick frozen foods.
- Procedures should be established for dispatching loads and for immediate storage of food upon arrival, in order to minimize exposure to humidity, elevated temperatures or other adverse conditions.
- It should be established that all personnel are following such procedures.
- The temperature of quick frozen food should be checked as it is received or dispatched, and a record of these measurements retained for a period that exceeds the shelf-life of the product.
- Operations (such as casing, order assembly, palletizing, etc.) should be carried out in the cold store or in a suitably temperature controlled area.

6. TEMPERATURE MANAGEMENT IN THE COLD CHAIN

6.1 TEMPERATURE MONITORING

Operators should ensure that appropriate systems are in place to monitor air temperatures during the freezing process and to monitor temperature along the cold chain in order that quick frozen foods are maintained at -18°C or colder. National tolerances may apply.

Records of these measurements should be kept for a period that exceeds the shelf-life of the product.

Technical advice is given in Annex 3.

6.2 TEMPERATURE VIOLATION

When quick frozen foods are inspected a stepwise approach is recommended, see Annex 3.

Loads or parts of loads that are warmer than the temperature required for quick frozen food should be identified and sorted immediately. Delivery, removal and sale of these loads or parts of loads should be suspended. It is the responsibility of the person in possession of the food to ensure that its temperature is brought down immediately, and, more generally, to take any necessary measures for preserving the food.

In such cases, the supplier should be informed immediately by the person in possession of the food that an incident may have occurred. The buyer, if his or her identity is known, should be informed that an incident may have occurred. Even if not responsible for loading the goods, legally the buyer is the receiver of the goods and must therefore be notified of any incident affecting him or her.

**ANNEX 1: ILLUSTRATIVE EXAMPLE ON THE APPLICATION OF CCPs
IN A QUICK FROZEN FOOD INDUSTRY**

Each step should be analyzed in order to decide if it is necessary with a CCP.

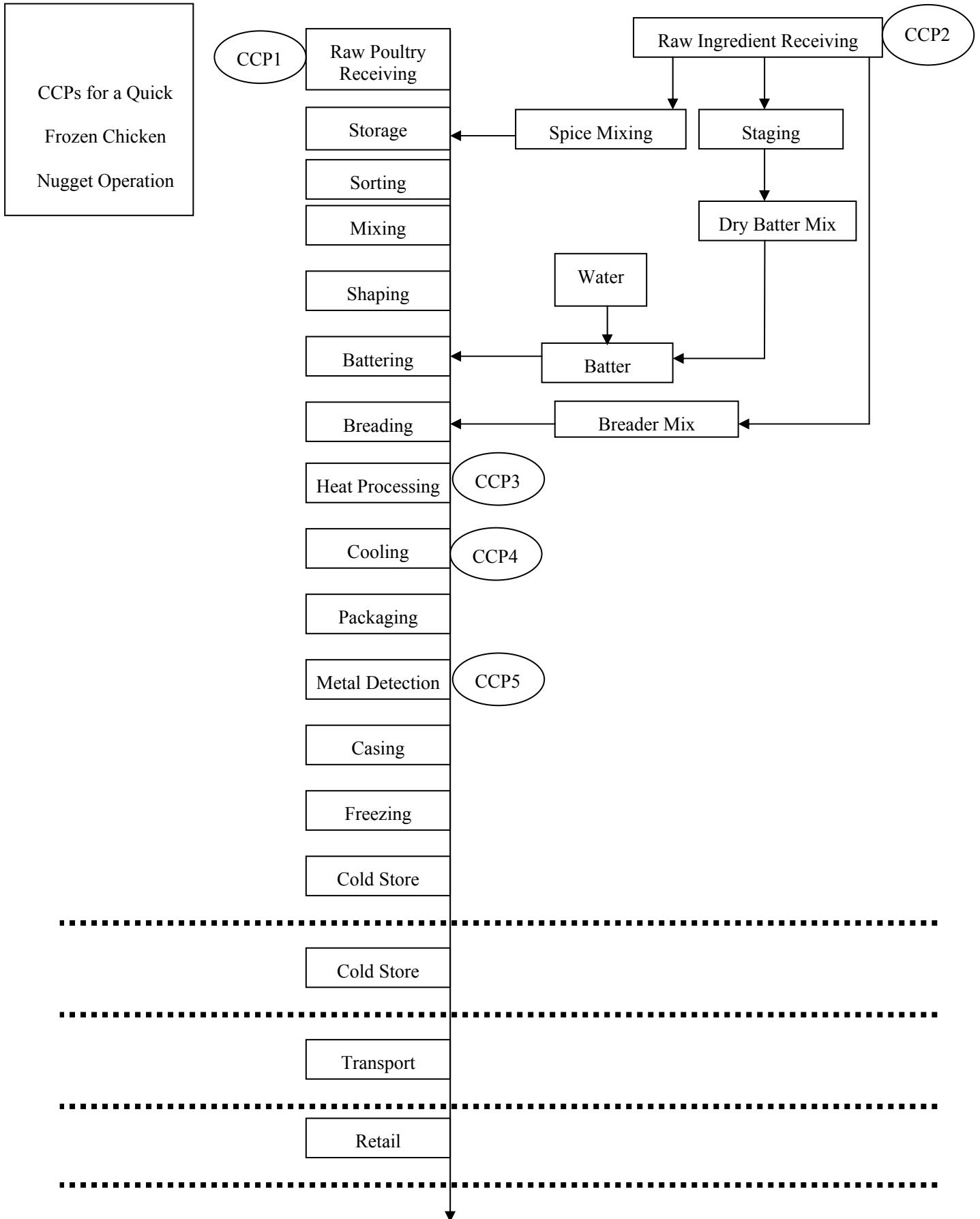


Table 1. CCPs description sheet

CCP Number	Process Step	Hazard Description	CCP Limit (if any)	Monitoring Procedure	Corrective Actions	Records
1 Temperature monitoring	Raw poultry Receiving	Biological – proper receiving temperatures of uncooked poultry.	Trucks must meet maximum specified temperature.	Incoming truck temperatures monitored for each received shipment of poultry. Outrun reports from vendor meet company specifications.	Evaluate product: hold, release or reject. Receiving clerk, supervisor and QA.	Incoming materials inspection form. Receiving clerk.
2 Physical inspection	Receiving of other sensitive ingredients.	Acceptable physical hazard levels including bone level in chicken and foreign material in coating ingredients.	Specified maximum bone level in received chicken. Coatings conform to specifications for foreign materials.	Outrun reports from each vendor show product meets specifications. Must be with each shipment.	Evaluate product: hold, release or reject. Receiving clerk, supervisor and QA.	Incoming materials inspection form. Receiving clerk.
3 Fryer and oven temperatures	Heat processing (fryer/oven).	Biological hazards in cooked chicken.	Chicken must be cooked to a specified minimum core temperature for specified time period.	Temperature record to monitor temperature of oven. Oven and product temperatures checked at specified intervals.	If limits exceeded hold production for biological evaluation: release, reprocess or destroy. Investigate causal factors and correct. Supervisor and QA.	Temperature record must be initialled by operator. Product log to be initialled by QA personnel.
4. Cooling	Cooling to chill temperature.	Biological hazards in finished product.	Product must be cooled to specified temperature within specified time.	Monitoring the cooling system, e.g. temperature record, checking stacking method. Product temperature checked at specified intervals.	If cooled too slowly, hold production for biological evaluation: release, reprocess or destroy. Investigate causal factors and correct. Supervisor and QA.	Temperature record must be initialled by operator. Product log to be initialled by QA personnel.
5 Metal detector	Metal detection.	Physical hazard in finished product.	Detection of metal to specified size and type.	Continuous operation. Line checked at specified intervals using defined standard.	Line stopped until corrected. Product from last line check must be passed through second operating detector. Supervisor and QA.	QA metal detector record. QA personnel.

**ANNEX 2: ILLUSTRATIVE EXAMPLE ON THE APPLICATION OF DAPS
IN A QUICK FROZEN FOOD INDUSTRY**

Each step should be analyzed in order to decide if it is necessary with a DAP.

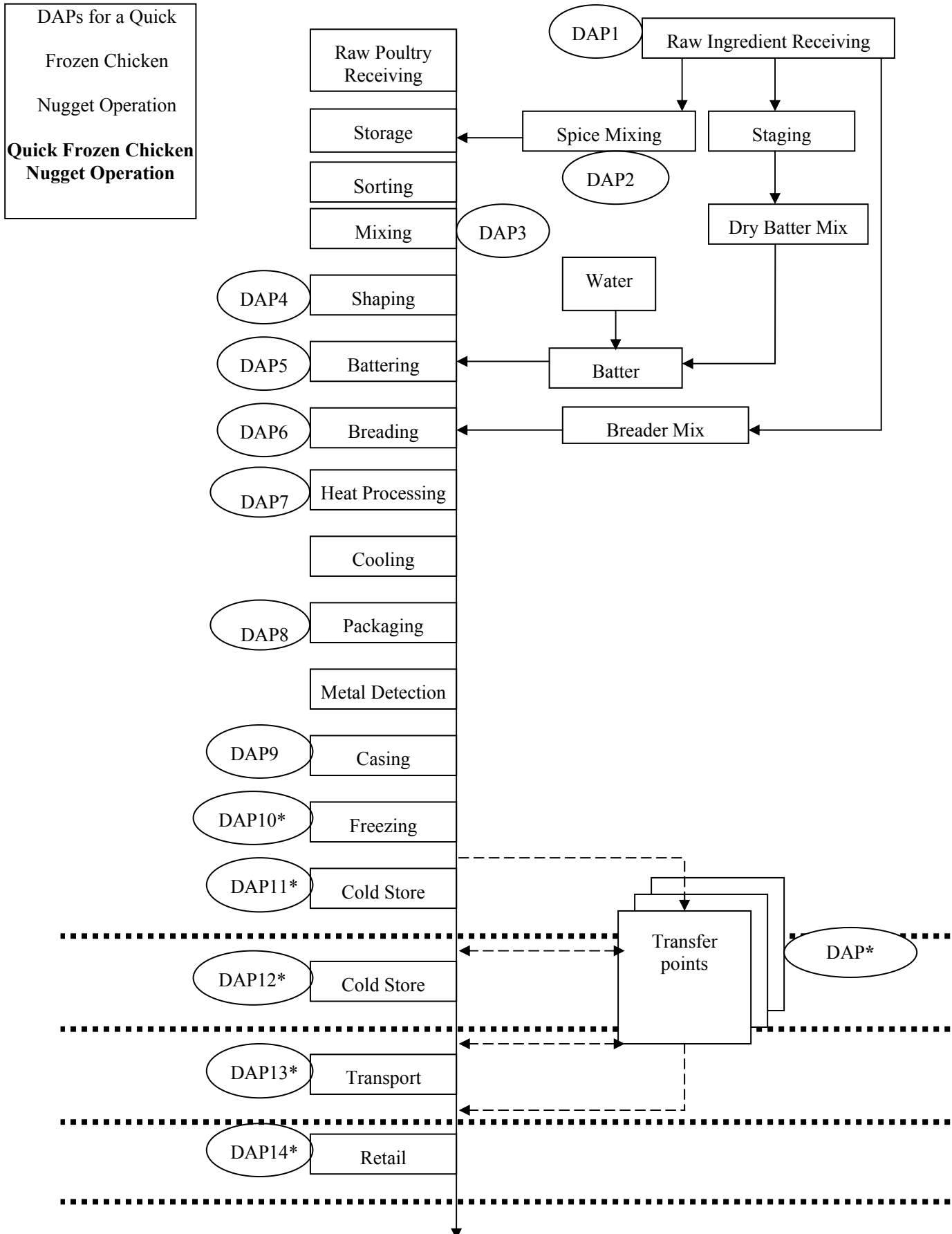


Table 2. DAPs description sheet

DAP Number	Defect Description	DAP Limit (if any)	Monitoring Procedure	Corrective Actions	Records
1 Receiving of sensitive ingredients	Check identity and wholesomeness.	Non-conformance for identity or wholesomeness.	Visual and sensory inspection. Outrun reports from each vendor meets specifications.	Evaluate product: hold, release or reject. Receiving clerk, supervisor and QA.	Incoming materials inspection form. Receiving clerk.
2 Spice mixing	Non-uniform spice mix.	Obvious non-uniform distribution of components.	Visual check for uniform distribution of component spices.	Evaluate product: remix if needed. Line operator and QA.	Production record completed.
3 Mixing	Non-uniform mix of components.	Obvious non-uniform distribution of components.	Visual check for uniform distribution of components.	Evaluate product: remix if needed. Line operator and QA.	Production record completed.
4 Shaping or forming	Non-conformity to specified shape and weight.	Misshapen form. Weight within specified limits.	Visual assessment for shape. Formed product weighed (e.g. 5 samples per 30 min).	Evaluate product: return product for rework. Line operator and QA.	Production record completed.
5 Battering	Incomplete coverage.	Incomplete coverage.	Visual assessment.	Evaluate product: investigate causal factors and correct. Line operator and QA.	Production record completed.
6 Breading	Incomplete coverage.	Incomplete coverage.	Visual assessment.	Evaluate product: investigate causal factors and correct. Line operator and QA.	Production record completed.
7 Heat processing	Overcooked colour and blow-out (loss of coating).	Colour darker than specified. Product greater than specified percentage with non-continuous coating.	Visual assessment against colour standards and detection of blow-out.	Evaluate product: investigate causal factors and correct. Line operator and QA.	Production record completed.
8 Packaging	Product does not conform to label weight.	Product weight less than label weight.	Product weight checked (e.g. 5 samples per 30 min).	Evaluate product: hold, release or reject. Supervisor and QA.	Production record completed.

DAP Number	Defect Description	DAP Limit (if any)	Monitoring Procedure	Corrective Actions	Records
9 Casing	Incorrect number of packs per outer. Ineffective carton closure.	Pack number conforms to label. Ineffective pack closure.	Physical check for closure and number of packs per carton.	Evaluate product: hold, release or reject. Supervisor and QA.	Production record completed.
10 Freezing*	Not frozen to -18°C within specified time.	Outside specified time.	Measure product temperature after freezing.	Evaluate product: hold, release or reject. Supervisor and QA.	Production record completed.
11 Cold store at the processing facility*	Excessive quality loss due to high storage temperature.	Product temperature above -18°C .	Temperature record to monitor temperature of cold store.	If limits exceeded hold production for biological evaluation and sensory evaluation: release or destroy. Investigate causal factors and correct. Cold-store supervisor and QA.	Temperature record must be initialled by supervisor.
12 Cold store*	Excessive quality loss due to high storage temperature.	Product temperature above -18°C .	Temperature record to monitor temperature of cold store.	If limits exceeded hold production for biological evaluation and sensory evaluation: release or destroy. Investigate causal factors and correct. Supervisor and QA.	Temperature record must be initialled by supervisor.
13 Transport*	Excessive quality loss due to high storage temperature.	Product temperature above -18°C .	Temperature record to monitor temperature of vehicle/container.	If limits exceeded hold production for biological evaluation and sensory evaluation: release or destroy. Driver and QA.	Temperature record to be initialled by driver.
14 Retail storage*	Excessive quality loss due to high storage temperature.	Product temperature above -18°C .	Temperature monitored at regular intervals.	If limits exceeded hold production for biological evaluation and sensory evaluation: release or destroy. Supervisor.	Temperature record completed by supervisor.

(*) Note: Each transfer point between DAPs 10 to 14 could also be considered as a DAP with similar defect description, DAP limit, monitoring procedure, corrective actions, and record keeping as in each of these DAPs.

ANNEX 3: TEMPERATURE MONITORING AND CONTROL IN THE COLD CHAIN

INTRODUCTION

Temperature monitoring is an integral part of the management of the cold chain. In general operators have a choice of monitoring systems for quick frozen products, which includes measurement of operating air temperatures of the refrigerating systems, or direct/indirect measurement of product temperature or a simulated product temperature

In air temperature monitoring fixed temperature sensors are used to monitor the air temperature in the refrigerated system. Product temperature may be measured directly or indirectly. Direct measurements of product temperature may be undertaken destructively or non-destructively.

Although product temperature measurement can give more confidence that temperature requirements are being complied with, this approach is often not practical during busy production and distribution period.

1. AIR TEMPERATURE MONITORING

Air temperature monitoring permits:

- the use of fixed temperature sensors, which are normally protected from damage during commercial activity;
- problems occurring in the system to be diagnosed;
- process management using data storage on computers, and can be linked to other operating information such as defrost cycles, door openings, energy consumption and even production batch codes;

1.1 AIR TEMPERATURE MONITORING EQUIPMENT

Electronic thermometers consist of a sensor (placed in the cold air), and a read-out or recording system. The sensor can be located far from the read-out or recording system or incorporated in it. A recorder is able to store the data, usually electronically, although chart recorders are still widely used for cold stores and containers.

- Air temperature thermometers should be accurate to within $\pm 2^{\circ}\text{C}$ and have a resolution of $\pm 1^{\circ}\text{C}$. The response time, i.e. the time taken for readings to stabilize, depends on the construction of the equipment and its use. Also if the system is mobile, it should be able to withstand vibrations, shocks or movement. Normally, accuracy of the electronic component of the recorder is less than $\pm 0.3^{\circ}\text{C}$.
- The sensor can consist of a thermocouple (Type K or Type T), thermistor or platinum resistance device. All of these will give a performance, and cover a temperature range adequate for quick frozen foods.
- Systems are checked and calibrated during manufacture. It is important that once installed, periodic checks are carried out to ensure proper functioning. This is normally undertaken by checking against a calibrated thermometer placed in an equilibrated ice bath.

1.2 AIR TEMPERATURE OF COLD STORES

Sensors should be placed in the chamber in the warmest positions, and the recorders can be placed more conveniently outside the cold store or in control offices.

Sensors should be located high up and well away from the cooler fans and well away from the entry and exit doors, to avoid exaggeratedly low temperatures or wide fluctuations.

Small cold stores (less than 500 m^3) may need only one sensor, whereas, those with a volume of less than $30,000\text{ m}^3$ will require two sensors. Stores with a volume from $30,000\text{ m}^3$ to $60,000\text{ m}^3$ will require 4 sensors, and those with a volume above $60,000\text{ m}^3$ will require 6 sensors.

Retail stores with a volume of less than 10 m^3 can be equipped with a visible thermometer only.

1.3 AIR TEMPERATURE MONITORING DURING TRANSPORT

Measurement of the return air temperature to the cooling unit will give a good indication of the load temperature, provided adequate air flow is achieved throughout the length of the vehicle.

In long vehicles (above 6 m), air ducting is recommended to ensure sufficient cold air reaches the rear of the vehicle. Two sensors are recommended to be fitted in the compartment: one measures the return air temperature, and the other is placed two thirds to three quarters the length of the vehicle mounted in the ceiling ducts. The difference between these two temperatures should be an indication of how well the refrigeration is functioning. If the difference is large or variable it may indicate insufficient pre-cooling, incorrect stowage of pallets, or unnecessary delay in closing the doors.

The recorder can be placed in the vehicle cabin or mounted on the outside usually near the refrigeration controls.

1.4 AIR TEMPERATURE MONITORING IN DISPLAY CABINETS

- Display cabinets should be equipped with an accurate thermometer or temperature measuring device that is easily readable.
- In open cabinets, the temperature should be measured in the return air, at the load line level, or at the warmest place.

2. PRODUCT TEMPERATURE MONITORING

2.1 DIRECT TEMPERATURE MEASUREMENT

2.1.1 Specification of Measuring System

The temperature measuring device used to measure product temperature should be of better accuracy than that used for air temperature monitoring. The following specification is recommended for the system, i.e. sensor and read-out:

- the system should have an accuracy of $\pm 0.5^{\circ}\text{C}$ within the measuring range -20°C to $+30^{\circ}\text{C}$;
- the response time should achieve 90% of the difference between initial and final readings within three minutes;
- the display resolution of the read-out should be 0.1°C ;
- the measuring accuracy must not change by more than 0.3°C during operation in the ambient range -20°C to $+30^{\circ}\text{C}$;
- the system should be calibrated or verified at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards;
- the accuracy of the system should be checked at regular intervals;
- the system should be robust and shock proof; and
- the electrical components of the system should be protected against undesirable effects due to condensation of moisture.

2.1.2 Pre-cooling of the Probe

- The probe should be pre-cooled as close to the product temperature as possible before measurement.
- After inserting the probe, the temperature should be read when it has reached a steady value.

2.1.3 Non-destructive Temperature Measurement

Non-destructive testing is rapid and can be done without unduly disturbing the load. However, because the outside temperature of the pack or carton is being measured this may give rise up to 2°C difference between the true product temperature and the reading obtained. Product surface temperature measurement undertaken non-destructively should:

- measure the temperature between cases on a pallet or between packs inside a carton;
- use sufficient pressure to give good thermal contact, and sufficient length of probe inserted to minimize conductivity errors;
- use a probe with a flat surface to give good surface thermal contact, low thermal mass, and high thermal conductivity.

2.1.4 Destructive Temperature Measurement

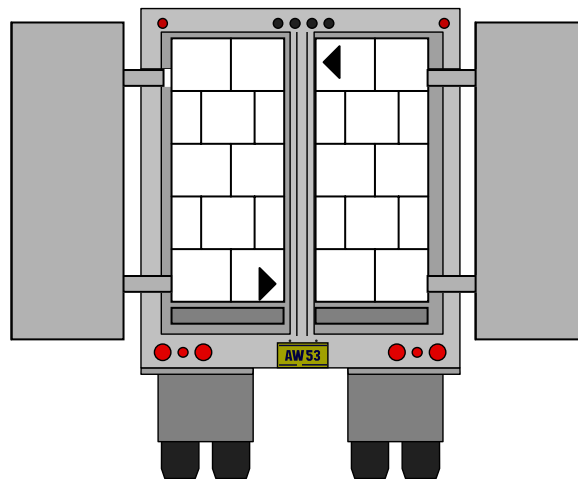
Temperature probes are not designed to penetrate quick frozen foods. Therefore it is necessary to make a hole in the product in which to insert the probe. The hole is made by using a pre-cooled sharp pointed metallic device such as an ice punch, hand drill or an auger. The diameter of the hole should provide a close fit to that of the probe. The depth to which the probe is inserted will depend on the type of product:

- Where product dimensions allow, insert the probe to a minimum depth of 2.5 cm from the surface of the product.
- Where this is not possible because of the size of the product, the probe should be inserted to a minimum depth from the surface of 3 or 4 times the diameter of the probe.
- Where it is not possible or practical to make a hole in certain foods because of their size or composition, e.g. diced vegetables, the internal temperature of the food package should be determined by insertion of a suitable sharp-stemmed probe to the centre of the pack to measure the temperature in contact with the food.
- In order to measure the centre temperature in large products after the quick freeing process it may be necessary to insert the probe to a depth of more than 2.5 cm.

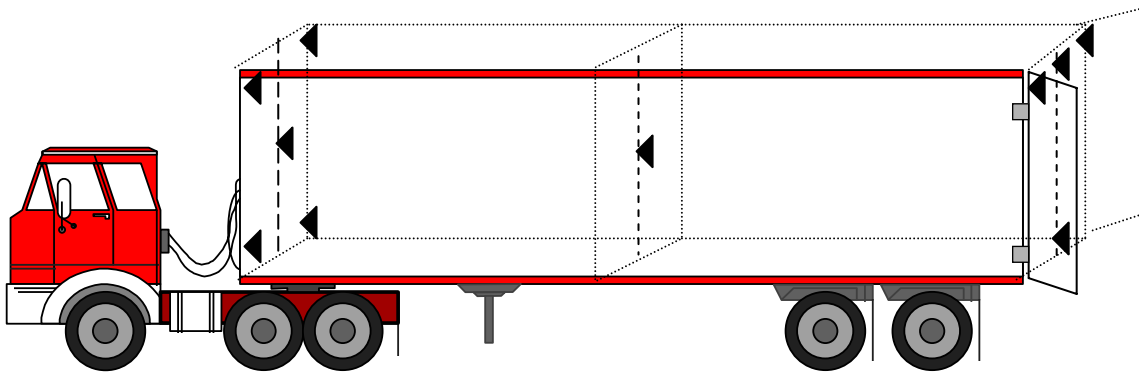
2.2 SAMPLING OF PRODUCTS FOR TEMPERATURE MEASUREMENT

2.2.1 During Transport

- A non-destructive temperature measurement should be taken of the product being loaded into the vehicle and a record entered in the documents.
- A product temperature measurement is required if there appears to be a problem, see Annex 3, section 4. If it is necessary to measure product temperatures during transport whilst the vehicle is loaded, samples should be selected from the top and bottom of the consignment adjacent to the opening edge of each door or pair of doors.
- Similarly, if product temperature measurement is necessary, when the vehicle is unloaded, and the cargo is placed in refrigerated environments, four samples should be selected from amongst the following points:



◀ Sampling positions for a loaded vehicle



◀ Sampling positions for an unloaded vehicle

- top and bottom of the consignment adjacent to the opening edge of the doors;
 - top and far corners of the consignment (as far from the refrigeration unit as possible);
 - centre of the consignment;
 - centre of the front surface of the consignment (as close to the refrigeration unit as possible);
 - top and bottom corners of the front surface of the consignment (as close as possible to the air return inlet).
- When samples are selected a non-destructive temperature measurement should be carried out first. A total tolerance of 2.8°C should be applied (2°C for limitations of methodology and 0.8°C tolerance for the system) before deciding whether a destructive measurement is necessary.

2.2.2 At Retail

- If it is necessary to measure the temperature of quick frozen foods in retail display cabinets, then one sample should be selected from each of three locations representative of the warmest points in the cabinets. The positions will vary with the different types of retail display cabinets used.

3. OPTIONAL AIDS TO TEMPERATURE MONITORING: INDIRECT TEMPERATURE MEASUREMENT

3.1 SIMULATED PRODUCT

When air temperature monitoring is difficult, e.g. during the freezing process it is possible to use a simulated food sample. This is a device that has a similar shape and is made of a material which has similar thermal properties and gives a similar cooling factor to the food being monitored. Materials such as nylon, polystyrene, polyvinyl chloride, perspex and polytetrafluorethylene have similar thermal properties to most foods. Sensors can be embedded permanently into such a device and it can be packed along with the food packages and measured when required. The simulant may also be incorporated into a temperature recording device.

3.2 RECORDERS BETWEEN PACKAGES

Small robust temperature recorders may be placed between packages or in a load, e.g. in cartons, in order to record the temperature over long periods. Such recorders may be programmed and the measurements retrieved by means of a computer.

3.3 NON-CONTACT THERMOMETERS

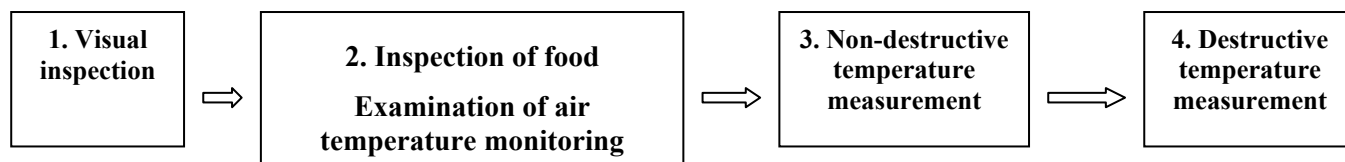
These devices measure the temperature of the food by sensing the infrared radiation emitted by the food. The amount of radiation varies with different materials, which absorb and reflect and transmit radiation differently. Infrared thermometers can be portable and are usually “pistol shaped” sometimes with a laser sighting aid. Target size can be important, since the instrument averages all the radiation in its field of vision. Care must be taken in interpreting results from these devices with quick frozen foods because a package rapidly picks up radiation from its surroundings, there can be a difference between surface temperature and interior temperature. In addition the type of packaging will affect the radiation. Laminated foil packaging in particular can give large errors because it reflects radiation more efficiently than cardboard. There are some newer devices which compensate for this type of error and measure the radiation through a window.

Fixed video camera-type infrared thermometers are also used. These can give thermal images, which permit industrial control of heating or cooling processes to ensure even processing. This is also true of the freezing process. Therefore it is possible to scan large numbers of products and pick out “hot-spots” followed up by more accurate temperature measurements.

3.4 TEMPERATURE INDICATORS (TIs) AND TIME-TEMPERATURE INDICATORS (TTIs)

Many patents have been taken out on mechanisms, which give a colour change, either when a specific temperature has been exceeded (TIs), or when the integrated exposure to a temperature over a period of time has been exceeded. There has been a reluctance to use TIs and TTIs on retail packs for a number of reasons, in particular because they are on the surface of packs not inside the food, and their possible conflict with durability dates. However, TIs and TTIs may be used on the outside of cartons or pallets to detect if temperature abuse has occurred during distribution from cold stores to holding stores at retail, and they can monitor transfer of quick frozen foods where monitoring records may not be available.

4. TEMPERATURE CONTROL - STEPWISE APPROACH



When quick frozen foods are being inspected in the cold chain either before loading or during unloading, a stepwise approach is recommended. When this approach indicates a temperature violation, the procedure in Section 6.2 should be followed.

1. Before loading and during unloading, a visual inspection is recommended in order to verify the condition of the foods.
2. In the first instance, the air temperature monitoring records and other temperature readings noted in the documentation following the foods should be examined. If the loading temperature was correct, and the refrigeration system functioning correctly, and there are no irregularities in the temperature difference between the air leaving the refrigeration unit and the air return, then no further action need be taken.
3. If there is a doubt about any of the above aspects or no records are available then a non-destructive product temperature measurement could be carried out. This should involve a between carton or between pack temperature reading, see Annex 3, Section 2.1.3. If the non-destructive measurement indicates that the food temperature is inside the legal tolerance the inspection may stop at this point.

Only if the non-destructive product measurement is outside the tolerance or legal limit should a destructive temperature measurement be undertaken, see Annex 3, section 2.1.4. This operation must be carried out after placing the cargo in refrigerated environments or after protecting the load in order to avoid reheating the foods. Destructive temperature measurements are time consuming, disruptive to the flow of foods along the chain, and expensive in that the foods tested must be destroyed, or otherwise disposed of.

COMMENTS SUBMITTED IN RESPONSE TO CL 2005/13-CAC

INTRODUCTION

The Annex contains comments submitted in response CL 2005/13-CAC from France, Paraguay, Spain, Thailand, the United Kingdom, EuroCommerce, and the International Dairy Federation (IDF). They are annexed to this document in original language.

France/Francia

Ce nouveau projet amélioré par rapport au projet précédent (2004/39-CAC) par le secrétariat des Etats Unis, que nous remercions, appelle cependant quelques remarques sur les aspects qualité, seuls appelés à commentaires à ce stade (sections 1, 2, 3, 5 et 6 – aspects qualité- et les annexes 2 et 3), dont les plus importantes concernent les paragraphes 5.1, 5.6, 5.7 et l'annexe 2

La qualité des denrées surgelées, au sens large de ce terme (hygiénique, organoleptique..) nécessite le respect de plusieurs conditions :

- la mise en œuvre de matières premières de qualité saine, loyale et marchande,
- la préparation et la surgélation des produits sans retard à l'aide d'un équipement approprié,
- la maîtrise et le maintien de la chaîne du froid, garants de leur sécurité et de leur qualité.

Plusieurs textes adoptés par l'Union européenne reposent sur ces trois exigences : la directive 89/108/Ce concernant les aliments surgelés destinés à l'alimentation humaine, le règlement 37/2005/UE relatif au contrôle des températures dans les moyens de transport et les locaux d'entreposage et de stockage des aliments surgelés destinés à l'alimentation humaine et la directive 92/2/CE fixant les modalités de prélèvement d'échantillons et de la méthode d'analyse communautaire pour le contrôle des températures des aliments surgelés destinés à l'alimentation humaine.

2 – CHAMP D'APPLICATION ET DEFINITION

2.1 Champ d'application :

La liste des différents maillons concernés n'est pas complète. Le projet de code traite aussi d'autres phases telles que la réception et la distribution, qu'il est donc nécessaire de rajouter ici. Ceci rejoint la remarque tout à fait justifiée du Venezuela.

2.2. Définitions :

- **Chaîne du froid** : il serait utile d'ajouter avant le terme « production » : « récolte, abattage », afin que les phases situées en amont soient bien couvertes par la définition ;
- **Entrepôt frigorifique** : le terme « bâtiment » semble peu adapté et pourrait être remplacé par « locaux » ; *l'expression « sous des conditions frigorifiques » en langue française, n'est pas très compréhensible et devrait être remplacée par « sous des conditions de températures appropriées ».*¹
- **Azurage** : *en langue française, la traduction est « glazurage »*

3 – PROGRAMME DE CONDITIONS PREALABLES

3.2.3. Afin de prendre en compte le facteur d'innocuité des matériaux par rapport aux aliments, il conviendrait d'ajouter à la 1^{ère} ligne, après « altérations physiques » : « et chimiques ». Ceci rejoint une remarque du Venezuela.

¹ Les observations en italiques sont des observations de forme concernant le plus souvent des problèmes de traduction en langue française.

3.6 Procédures de rappel des produits et [traçabilité/suivi des produits] :

3.6.1. il convient de distinguer le retrait des produits du marché dont la responsabilité incombe à l'exploitant du secteur alimentaire, dès lors qu'un produit ne répond pas aux prescriptions relatives à la sécurité, et le rappel qui est effectué lorsque le produit a atteint le consommateur, et qui consiste pour le professionnel concerné à informer le consommateur, et lui demander par exemple de ne pas consommer le produit en cause. Ces dispositions figurent dans le règlement 178/2002/CE.

Dans le titre de ce paragraphe le terme « rappel » devrait être remplacé par « retrait » ; à la 1^{ère} ligne le terme « rappeler » devrait être remplacé par « retirer ».

Par ailleurs la question de l'introduction du « rappel » dans ce paragraphe pourrait être soumise à commentaires.

3.6.2. mêmes commentaires que ci-dessus ; le terme « rappel » à la 1^{ère} ligne devrait être remplacé par « retrait ».

5 CONTROLE DE LA CHAINE DU FROID – ASPECTS QUALITE

5.1. Matières premières

Comme cela a été indiqué en introduction, un des facteurs essentiels pour préserver la qualité d'un produit est son traitement dans les délais les plus courts possibles après la récolte, l'abattage, la pêche...Il serait donc utile de remplacer la 1^{ère} phrase du 2^{ème} paragraphe par :

« La préparation des produits à traiter et la surgélation doivent être effectués sans retard et un contrôle des températures de ces produits devrait être réalisé, afin de minimiser d'éventuelles altérations chimiques et biochimiques. »

5.3 Procédés de surgélation :

L'objectif du code est de couvrir les procédés de congélation rapide existants, notamment, congélation rapide par soufflage d'air; par appareil à plaques ou sur lit fluidisé en IQF.

Il conviendrait donc de parler à la 2^{ème} ligne plutôt de « système ou procédé de congélation » que de « congélateur ».

(A noter que le paragraphe 4.3 concernant les procédés de congélation rapide, mais qui ne semble traiter que de la congélation par soufflage d'air devrait être actualisé et élargi aux autres méthodes de congélation rapide existantes).

5.4 Emballage et étiquetage

Au 2^{ème} paragraphe, la 2^{ème} ligne devrait être complétée comme suit : « ...une augmentation de température qui survient, dans les limites des tolérances admises, n'affecte pas de manière défavorable la qualité du produit. » Ces modifications correspondent aux remarques formulées par le Venezuela et le Royaume Uni.

5.5 Entreposage frigorifique :

Ce paragraphe est conforme aux dispositions communautaires relatives aux aliments surgelés qui prévoient le respect d'une température inférieure ou égale à -18 °C. Ce stade est particulièrement stratégique et déterminant pour la qualité des produits, compte tenu des quantités entreposées souvent très importantes, de la durée de leur entreposage et de l'importance de la température de stockage par rapport à la qualité du produit qui sera ensuite transporté et distribué.

Le maintien de la température devrait donc être ici un CCP, car un incident de température, qui peut créer une évolution nuisible du produit (développement de toxines), est particulièrement grave à ce stade. Ceci rejoint les remarques du Venezuela et d'Euro Commerce.

5.6. Transport et distribution :

Comme précédemment, il n'est pas possible de présumer de l'importance et de la gravité d'un incident de température qui peut créer une évolution nuisible du produit.

Il conviendrait donc d'indiquer que le maintien de la température peut être un DAP ou un CCP en fonction de l'importance de la remontée de température.

Au paragraphe 4, le terme « brève » a été supprimé ; il convient de le maintenir, car on ne peut admettre lors du transport des fluctuations de température de longue durée. La 1^{ère} ligne deviendrait donc : « Une brève élévation de la température lors du transport peut être tolérée dans la limite de -15°C. ». Ceci est conforme à la directive communautaire 89/108.

Au paragraphe 6, seule la distribution aux détaillants est citée, alors que les produits surgelés sont distribués dans des quantités de plus en plus importantes auprès de collectivités diverses, telles que restaurants, hôpitaux, cantines...Il conviendrait donc d'inclure ce type de distribution en reprenant les termes utilisés dans la norme générale du Codex pour l'étiquetage des denrées alimentaires préemballées, et donc d'ajouter à la 1^{ère} ligne :

« La distribution des denrées surgelées aux détaillants ou à la restauration collective devrait être effectuée... ».

Au paragraphe 6, il est prévu que les élévations de températures doivent être réduites au minimum, dans les limites fixées par la législation nationale, et qu'elles ne peuvent dépasser -12°C dans le paquet le plus chaud.

Le libellé de la tolérance peut conduire à des confusions s'agissant de températures négatives ; aussi il serait préférable de dire : « ... dans les limites fixées par la législation nationale, et ne devraient en aucun cas être plus chaudes (ou plus élevées) que -12°C dans le paquet le plus chaud ». Ceci rejoint une observation du Royaume Uni.

La directive communautaire 89/108/CE prévoit que cette tolérance ne peut conduire à une température plus élevée que - 15°C.

5.7. Vente au détail :

Le 1^{er} paragraphe prévoit que dans les meubles frigorifiques de vente les élévations de températures doivent être réduites au minimum, dans les limites fixées par la législation nationale, et qu'elles ne peuvent dépasser -12°C dans le paquet le plus chaud.

Comme précédemment, le libellé de la tolérance peut conduire à des confusions s'agissant de températures négatives ; aussi il serait préférable de dire : « ... dans les limites fixées par la législation nationale, et ne devraient en aucun cas être plus chaudes (ou plus élevées) que -12°C dans le paquet le plus chaud ». Ceci rejoint une observation du Royaume Uni.

La directive communautaire 89/108/CE prévoit que cette tolérance ne peut conduire à une température plus élevée que - 15°C.

Il est indiqué que la température dans le meuble frigorifique de vente pourrait être un DAP. Lorsqu'un incident de température se produit, il n'est pas possible de présumer de son importance et de sa gravité qui peuvent nuire au produit.

Il conviendrait donc d'indiquer que le maintien de la température peut être un DAP ou un CCP, en fonction de l'importance de la remontée de température.

Au 2^{ème} paragraphe, il serait utile de préciser : « dispositif de mesure approprié » ; ceci est conforme à la remarque du Royaume Uni.

Au 3^{ème} paragraphe, il conviendrait de remplacer « radiateurs » par « source de chaleur », ce qui correspond plus à la réalité (par exemple présence d'un four à proximité du meuble frigorifique).

Au 7^{ème} paragraphe, il conviendrait d'ajouter deux précisions : « Le point de vente devrait être équipé d'une chambre de garde appropriée pour denrées surgelées qui permet le maintien des produits à une température inférieure ou égale à -18°C ». En effet le terme « approprié » recouvre par exemple la nécessité d'avoir une chambre d'un volume suffisant par rapport aux livraisons et par rapport à la nécessité de stocker les denrées en cas de panne..

5.8 interfaces:

Au 3^{ème} alinéa, le terme en français « adopte » devrait être remplacé par « suive » ou « applique », afin d'être conforme à la version en langue anglaise.

Au 4^{ème} alinéa, l'expression en français « vie d'étagère » devrait être remplacée par « durée de vie » (« shelf life » en anglais.).

6 – CHAÎNE DU FROID –GESTION DE LA TEMPÉRATURE

6.1. Au 2^{ème} paragraphe l'expression en français « vie d'étagère » devrait être remplacée par « durée de vie » (« shelf life » en anglais.).

ANNEXE 2:

Les remarques formulées aux paragraphes 5.6 et 5.7 et le contenu du paragraphe 5.8 doivent être prises en compte ici dans le schéma :

- La préparation de commandes, la mise en cartons, la palettisation, sont des interfaces particulièrement sensibles, où des élévations de températures peuvent se produire ; il n'est pas possible de présumer de l'importance et de la gravité d'un incident de température qui peut créer une évolution nuisible du produit.

Il conviendrait donc d'indiquer que le maintien de la température peut être un DAP ou un CCP, en fonction de l'importance de la remontée de température.

- de même, au cours des étapes d'entreposage, de transport, de vente au détail, il conviendrait d'indiquer que le maintien de la température peut être un DAP ou un CCP, en fonction de l'importance de la remontée de température.

- le schéma prévoit un déroulement des opérations : emballage, mise en cartons, surgélation, qui ne correspondent pas à la réalité de l'industrie. La surgélation en cartons est de plus en plus rare ; dans la majorité des cas, ou bien la surgélation est effectuée sur les unités de vente au consommateur (congélation par soufflage d'air), ou bien le produit est surgelé avant conditionnement (surgélation sur plaques, ou bien surgélation sur lit fluidisé ou IQF). Il est nécessaire que ces pratiques utilisées par la majorité des industriels soient prévues dans le schéma, c'est à dire : surgélation avant conditionnement, et surgélation après conditionnement.

ANNEXE 3

Au paragraphe 1.1 2^{ème} alinéa, il convient de dire en langue française de « l'étendue de mesure » (« temperature range » en langue anglaise) et non de « l'éventail de mesure ».

Paraguay

Sin perjuicio de otras observaciones que serán presentadas oportunamente, PARAGUAY solicita sean eliminados definitivamente del texto del Anteproyecto los términos, los conceptos y aspectos vinculados a rastreabilidad/rastreo de productos tanto en la sección de definiciones como en el resto del documento (Secciones 2.2; 3.6), en virtud a que dicho tema se encuentra aún en estudio en el ámbito del CCFICS.

Sin perjuicio de lo expresado precedentemente, en caso que se admitiera insertar la definición de rastreabilidad/rastreo de productos en el capítulo de definiciones esta definición debiera ser consistente con la aprobada en el 27º periodo de sesiones de la Comisión del Codex Alimentarius, sin embargo, recalcamos que insertarlo constituiría un despropósito.

Spain/Espagne/España

SECCIÓN 2.2.- DEFINICIONES.-

Enfriamiento.- En la definición de esta operación se habla de una temperatura a menudo de 5 °C o más baja para evitar la formación de cristales de hielo, pero no se especifica si dicha temperatura se alcanza en el centro térmico de la pieza o en el exterior de la misma. Por lógica parece que debe hacer referencia la centro de la pieza, pero sería conveniente indicarlo.

Cámara de congelación (en lugar de cámara frigorífica).- Debería sustituirse la palabra edificio, por **instalación** , y en condiciones de “congelación” en lugar de refrigeración.

“Primero en llegar –Primero en salir”.- Debería sustituirse por **Rotación de mercancías.**

Glaseado.- Debería sustituirse “aplicación de...” por “**Operación/proceso mediante el que se aplica....**”

Sistema (unidad, planta) de refrigeración.- Si este concepto se define como equipo debería suprimirse la referencia a “planta” indicándose **Sistema / Unidad de refrigeración.**

Indicador térmico.- En la definición se indica que es un dispositivo que al ser activado utiliza una reacción física o físico-química para producir un cambio....”, esta definición debería modificarse del siguiente modo: **“Dispositivo que al ser activado, utiliza una reacción física o físico-química que permite detectar un cambio observable....”**ya que por si mismo el indicador no puede producir cambios, o al menos este no es su objetivo

Tolerancia.- Tolerancias a corto plazo....” Debería indicarse **“Fluctuaciones admisibles....”**

SECCIÓN 3.1.- EMPLAZAMIENTO.- Debería indicarse **Ubicación .-**

Debería sustituirse la expresión :” ...de las plantas de elaboración debe ser tal que la calidad de los productos...” por la expresión **“....de las plantas de elaboración debe ser tal que la calidad y/o seguridad de los productos....”**

3.2.- DISEÑO Y CONSTRUCCIÓN DE LAS INSTALACIONES

3.2.1.- Diseño de la planta de elaboración.- La expresión “...Deberán seguir un esquema de flujo que permita reducir al mínimo aquellas demoras del proceso que podrían determinar una reducción de la calidad de los alimentos...” debería sustituirse por **“...Deberán seguir un esquema de flujo que permita reducir al mínimo aquellas demoras del proceso que podrían determinar una reducción en la calidad y seguridad, así como el cruce de líneas durante el procesado....”**

SECCIÓN 3.6.- PROCEDIMIENTOS DE RETIRO DE PRODUCTOS DEL MERCADO Y RASTREABILIDAD /RASTREO DE PRODUCTOS.

Debería decir:“ **RETIRADA DE PRODUCTOS DEL MERCADO Y TRAZABILIDAD DE PRODUCTOS.**”

Sería conveniente que se matizase que el concepto de trazabilidad no va asociado de forma exclusiva con la retirada de mercancías del mercado en el caso de que se detecten problemas de calidad y/o de inocuidad sino que se trata de un concepto más amplio incluido dentro de los prerrequisitos del sistema APPCC.

Sección 3.6.1.- Procedimientos de retiro debería decir : “**Retirada**“

Seccion 3.6.2.- Rastreabilidad /Rastreo.- debería decir exclusivamente: :“**Trazabilidad**”

En este mismo apartado: “el rastreo/rastreabilidad de productos es esencial para un procedimiento de retiro...” debería decir: **“La trazabilidad de productos es esencial a la hora de proceder a la retirada de productos ...”**

El sistema de rastreabilidad debe permitir mediante procedimientos apropiados el retiro...” debería decir : **“ el sistema de trazabilidad debería permitir mediante procedimientos apropiados la retirada...”**

En el segundo punto de este párrafo se habla de trazabilidad de los productos en un paso anterior y en otro posterior, pero no se menciona en ningún momento la trazabilidad de proceso o trazabilidad interna que sería útil a la hora de poder detectar los orígenes del problema en alguna de las etapas de producción, almacenado o distribución de los productos.

4.2.- ELABORACIÓN PREVIA A LA CONGELACIÓN.- En el cuarto párrafo de esta sección se indica: "...” para seleccionar el método de descongelación se deberá tomar en cuenta, en particular la dureza y uniformidad de tamaño...” , más que hacer referencia a la dureza del producto debería considerarse su consistencia, textura, tamaño y aquellas otras características que puedan influir en dicho proceso.

4.2.1.- Tratamiento de productos para evitar la presencia de parásitos.- Al hacer la descripción de los parásitos a controlar mediante la utilización de la congelación se indica que los parásitos del gen. Anisakis son parásitos del cerdo, debiendo indicarse que son parásitos de **pescado**.

SECCIÓN 5: CONTROL DE LA CADENA DEL FRÍO : ASPECTOS RELACIONADOS CON LA CALIDAD

Debería diferenciarse entre calidad y seguridad, primando la utilización del segundo término sobre el primero

Sección 5.1.1. Aspectos microbiológicos.- Al hacer referencia a este apartado, quizá debería especificarse a que tipo de microorganismos nos estamos refiriendo puesto que en algunos casos puede suceder que la presencia de determinados parásitos no sea un problema de calidad sino de inocuidad de alimentos.

Sección 5.1.2 Otros aspectos relacionados con la calidad de las materias primas

Sección 5.1.2.1.- Contaminación.- en esta sección se hace mención al control de contaminantes, fertilizantes, medicamentos veterinarios, residuos de plaguicidas, contaminantes industriales... que están vinculados al concepto de seguridad de los alimentos, más que al simple concepto de calidad de los mismos. En consecuencia, se propone que dicho apartado se clarifique indicándose de forma concreta aspectos de calidad o se suprima la referencia a control de contaminantes que pueden repercutir en la seguridad/inocuidad del alimento.

SECCIÓN 5.2.: ELABORACIÓN PREVIA A LA CONGELACIÓN

En el último apartado se indica:” Si en la elaboración se utilizan materiales intermedios congelados, se deberán aplicar las medidas apropiadas de control y vigilancia de la temperatura...” En el caso en el que se trate de productos elaborados en la propia empresa, si se trata de productos intermedios recibidos desde otro proveedor deberá efectuarse el control a la recepción no solo de la temperatura sino de aquellos otros parámetros que se contemplen en el APPCC del establecimiento receptor de los mismos.

5.3.- PROCESO DE CONGELACIÓN RÁPIDA

Donde dice:”... naturaleza del producto (conductividad, dureza, forma, temperatura inicial) y volumen de producción...” Debería indicarse:”... **naturaleza del producto (conductividad, dureza, forma, temperatura inicial, ...) y volumen de producción....**”

5.5.- ALMACENAMIENTO EN CONGELADOR

En el primer párrafo de este apartado se indica que la temperatura de la cámara frigorífica puede constituir un PCD, sin embargo en algunas ocasiones este PCD podría transformarse en un PCC

5.6.- TRANSPORTE Y DISTRIBUCIÓN.- En el primer párrafo se dice:”... se utilizaran equipos con un aislamiento adecuado...” debería decir: “...**se utilizarán medios de transporte dotados de un aislamiento adecuado...**”

En el apartado cuarto se indica: Sin embargo cualquier producto que presente una temperatura superior a 18°C, ésta deberá reducirse a -18°C tan pronto como sea posible...”. En este ascenso de temperatura debería indicarse que el mismo no debería ser superior a las tolerancias establecidas ya que temperaturas por encima de estas podrían afectar al producto.

5.7.- VENTA AL POR MENOR.-

En el primer apartado donde dice: ...” la temperatura del armario frigorífico puede constituir un PCD”, debería tenerse en cuenta que en determinados casos este PCD podría convertirse en un PCC.

5.8.- PUNTOS DE TRASBORDO

En este apartado al especificar que los registros relativos a las temperaturas de los alimentos que se reciben o que se despachan por un periodo que exceda la vida útil, debería tenerse en cuenta que hay productos que pueden ser objeto de tratamientos sucesivos que alarguen su vida útil.

6.- GESTIÓN DE LA TEMPERATURA EN LA CADENA DEL FRÍO

6.1.- Vigilancia de la temperatura.- La indicación “podrán aplicarse tolerancias nacionales” resulta inespecífica puesto que en función de lo establecido en cada país las actuaciones serían diferentes por ello se propone la siguiente redacción: “... A efectos de que los productos congelados rápidamente se mantengan a una temperatura de -18°C o más fría considerando las tolerancias admitidas.”

ANEXO 1.- APLICACIÓN APPCC EN LA INDUSTRIA DE ALIMENTOS CONGELADOS RÁPIDAMENTE.

Con carácter general este diagrama de flujo establece los PCC para la temperatura, sin embargo la etapa correspondiente al detector de metales aparece como un PCC, donde a priori la temperatura no es el peligro de esta fase sino la detección de metales tal y como se indica en el cuadro adjunto.

Además los controles de temperaturas en etapas posteriores tales como la congelación, almacenamiento en cámara frigorífica, el transporte y la venta al por menor no se consideran PCC sino PCD, según el segundo diagrama de flujo. Debería contemplarse la posibilidad de que sean, en un momento determinado PCC ya que cuando se superen las temperatura permitidas (incluyendo sus tolerancias) y en función de su duración, umbral de incremento, ..., pueden afectar la inocuidad del producto.

ANEXO 3: VIGILANCIA Y CONTROL DE LA TEMPERATURA EN LA CADENA DE FRÍO

1.- CONTROL DE LA TEMPERATURA DEL AIRE.-Se propone la siguiente redacción para el primer párrafo: “Para llevar a cabo el control de la temperatura se utilizarán sensores térmicos..., durante la actividad comercial.

Con ello se permite:

- diagnosticar los problemas que se producen en el sistema y ,
- administrar el proceso almacenando datos e interrelacionarlos con datos obtenidos en las distintas etapas operativas, por ejemplo.....”

1.2.- CONTROL DE LA TEMPERATURA DEL AIRE EN LA CÁMARA FRIGORÍFICA.-

Debería indicarse en el párrafo primero que el número de sensores dependerá de la capacidad expresada en m³ de las cámaras de congelación, por ejemplo: las cámaras frigoríficas pequeñas..... las de más de 60.000.

Thailand/Thaïlande/Tailandia

First of all, we would like to thank the US Secretariat for the revision of this Proposed Draft Code. We acknowledge the substantial improvement of this Code especially in section 5. We, however, are of the opinion that other section e.g., Section 1,2 or 6 are relating to both safety and quality and should be taken into account at this step as much as possible. We would like to reconfirm the following comments for further development.

General Comments

The concept of Defect Action Point (DAP), even though explained in the introduction of this Code, is still difficult to understand. The application of DAP analysis using HACCP guideline is questionable and can lead to arguments. The concept of “Quality”, not like “Safety”, can be different from country to country and from one tracing partner to another. The use of DAP analysis will also be burdensome for the producing countries especially in developing countries. At this moment, we would like to reconfirm our position of not supporting the inclusion of DAP and DAP analysis in this Code unless there are very clear guideline and criteria on the use of DAP and DAP analysis. In our opinion, the provisions in sections: quality aspects are sufficient for managing all quality aspects of quick frozen foods. If an agreement can not be reached on the inclusion of DAP and DAP analysis at this step, all provision of DAP should be put in square brackets to ensure further consideration by CAC and / or CCFH.

Specific Comments

Introduction

We confirm our proposal to delete the text “in accordance with national legislation” from the last sentence of the last paragraph to be consistent with the definition of “Tolerances”.

2.2 Definitions

“Cold Store”

The term “A building” is needed to clarify whether other styles of facilities, e.g. a refrigerated container, are included. We suggest the text to be modified to “A building **or facility e.g. , refrigerated container**”.

“Defect Action Points (DAP)”

We propose to add “an essential” before “quality”.

“Temperature abuse”

The square brackets should be removed and the text retained.

“[Tolerance]”

We support the bracketed text and propose to remove the square brackets.

“[Traceability/Product Tracing]”

The definition of “Traceability/Product Tracing” as adopted by CAC should be referred to.

4.1 Raw Materials

We propose to delete the word “wholesome” from the 1st sentence of the 2nd paragraph. The safe raw materials are more important as there are processing steps before freezing, e.g. ,cleaning and sorting, and it may not always be possible to receive only wholesome raw materials. This comments concern quality although it is in section 4

5.1 Processing before Freezing

We request to delete the provision of DAP in section 5.2, 5.5, 5.6, 5.7 and especially Annex 2. (See our general comments).

5.2 Quick Freezing Process

We confirm our proposal to delete the phrase “high humidity and /or” from the 2nd sentence of the 2nd paragraph; because high humidity is not critical to quality of frozen foods as compared to warm temperature. It is also difficult for industries to control humidity in processing area especially in tropical countries.

5.8 Transfer Points

We confirm our proposal to delete the words “and humidity” from the 1st dot and “humidity” from the 2nd dot because high humidity causes less effect on quality of frozen foods than high temperature does, especially when frozen foods are in package/container.

6.1 Temperature Monitoring

The last sentence of the 1st paragraph “National tolerances may apply” could create unjustified barriers to trade. We, therefore, would like to propose to delete this sentence.

Annex 1: Table 1

The presentation of a HACCP plan example should be in compliance with the Codex guideline on HACCP in CAC/RCP-1-1969, Rev.4 (2003). For example control measure of each CCP and verification should be presented. It is also suggested that the examples deal with all 7 principles of HACCP. More information such as hazard analysis, CCP determination should be added to provide better understanding for the users. More examples of HACCP should also be added, if possible, to cover different groups of quick frozen foods, e.g., fishery products, fruits and vegetables. These comments may have to be discussed at step 7 in CCFH.

Annex 2 : Illustrative Example on The Application of DAPS in a Quick Frozen Food Industry

The examples on DAP analysis in Annex 2 are difficult to understand and can cause disagreements by the users of this code. We strongly recommend deletion of the Annex 2 unless there are very clear guideline and criteria on DAP analysis. (see our general comments)

United Kingdom/Royaume-Uni/Reino Unido

General Comments

- The UK is aware that there have been concerns regarding the application of a HACCP type approach using Defect Action Points (DAPs) for the control of quality defects. Whilst the UK is in support of this type of approach we note that the Code clarifies that the application of DAP analysis is optional and other techniques which achieve the same objective may be applied. Therefore, we consider that objections to the use of DAP analysis should not prevent adoption of the Code and agree with the U.S. decision to keep DAP's in the Code.
- The UK can also agree with the U.S. comments that there should be some discussion of distinctions between quality and safety aspects regarding which steps are considered DAP's and which are considered CCP's (see also specific comments on sections 5.5, 5.6, and 5.7).
- We consider that the use of the terms ‘warmer than - x° C’ or ‘colder than - x° C’ should be used in place of ‘higher/above - x° C’ or ‘lower than/below - x° C’ when referring to negative temperatures as this is less open to mis-interpretation and will avoid confusion. This has been done in some sections of the text e.g. section 5.3 paragraph 2 but not in others e.g. section 5.5 paragraph 1, section 5.6 paragraphs 4 & 6, section 5.7 paragraph 1. All relevant sections should be amended to take this into account.

Specific comments (new text in italicised bold)

2.1 Scope

- the term ‘transportation’ should be replaced with the term ‘*distribution*’ as this encompasses both the reception and transport of products.

2.2 Definitions

- definition of ‘Cold store’: the term ‘building’ does not seem appropriate and we suggest it should read ‘...*premises* used for the preservation of ...’. Also, we suggest the second part of the sentence is qualified as follows: ‘...quick frozen foods under refrigerated/*frozen* conditions.’

- definition of ‘Temperature abuse’: for further clarification the word ‘adversely’ should be added so the sentence reads ‘...so that it may *adversely* affect essential quality or safety of the food.’ (See also 5.4 bullet pt.2).
- we understand that a draft definition of ‘traceability/product tracing’ is currently being developed by the Codex Committee on General Principles (CCGP), we suggest that discussions from this committee should be factored in when developing a definition for the terms ‘traceability/product tracing.’

We understand that the following definition of traceability/product tracing, proposed by the Codex Committee on General Principles, was agreed at the 27th CAC, July 2004:

Traceability/Product tracing: the ability to follow the movement of a food through specified stage(s) of production, processing and distribution. (see Appendix II p.80 of Alinorm 03/41).

We also understand from the Alinorm that CCFICS are currently considering a proposal for the application of this definition (para 20, page 3, Alinorm 03/41).

3.2.3 Equipment Design and Construction

- the first sentence should be re-worded to include the point that equipment used should not chemically alter the raw product. We suggest this sentence is reworded to say ‘...and constructed **and made of materials, such that physical damage and contamination** to the raw materials...’

3.6 Recall Procedures and Traceability/Product Tracing

- there may need to be some consideration of whether the word ‘Recall’ or ‘Withdrawal’ should be used in this section or whether both circumstances should be covered. We suggest that the term [*and withdrawal*] be inserted in square brackets after the word ‘recall’ in the first sentences of 3.6.1 and 3.6.2 and in the title of 3.6.1 for further consideration by respective Codex committees.

4.1 Raw Materials

- paragraph 2: the word ‘Receiving’ should be replaced by the word ‘*Reception*’,

5.1 Raw Materials

- paragraph 2; we suggest the following text is inserted before the first sentence ‘*Raw materials should be handled/processed as quickly as possible to minimise any deterioration in quality.* If frozen...’

5.2 Processing Before Freezing

- paragraph 4: add or similar text should be to the end of the sentence, ‘**and take into account their future use of further processing, as necessary**’.

5.3 Quick-Freezing Process

- paragraph 1; the text should be amended to read ‘...changes, *by ensuring the appropriateness of the freezing equipment in terms of* its capacity...’

5.4 Packaging and Labelling

- we suggest the third bullet point be moved up to be the first in the list as this is a more fundamental and important purpose of packaging.
- if packaging is damaged this may lead to contamination, affecting the safety of the product, we therefore suggest that the following sentence should be added at the start of the second paragraph: ‘*The integrity of the packaging may be considered a CCP*’.

- paragraph 2; the sentence should read '...temperature of the quick frozen foods ***which occurs, within the limits of the permitted tolerances, does not adversely*** affect the quality of the product.'
- paragraph 3: the reference to GSLPF should read 'Codex General Standard for the Labelling of Prepackaged Foods...'

5.5 Frozen Storage

- see also general comment above, regarding consideration of what steps should be DAP's or CCP's. We considered that small fluctuations in temperature during storage/transport etc. would not be considered CCP's as these would not significantly affect the safety or the product. However, if the refrigeration equipment breaks down and the temperature became significantly warmer this would be considered a CCPs this may affect the safety of the product. We suggest replacing the final sentence of paragraph 1 with the following text; suggest replacing the final sentence of paragraph 1 with the following text; '**Maintenance and monitoring of the refrigeration equipment in the cold store to ensure that it is functioning correctly should be considered a CCP.**' or words to that effect.

5.6 Transport and Distribution

- paragraph 1, comments as above apply. The final sentence should be re-worded to say; '**Maintenance and monitoring of the refrigeration equipment during transport and distribution to ensure that it is functioning correctly should be considered a CCP.**'
- paragraph 2: the words '***of the freezing process***' should be added following the work 'efficiency'.
- paragraph 4: this section is unclear as currently drafted. Does it mean that a temperature of -15°C can be briefly tolerated but that any temperature warmer than -18° C must be immediately colled, or should the first - 18° in this paragraph actually be - 15° C? This paragraph should clarify that only a brief rise in temperature to - 15° should be tolerated.
- paragraph 6 and section 5.7, paragraph 1: the words '***natural legislation***' should be all in lower case.

5.7 Retail Sale

- paragraph 1: see comment under section 5.5. The final sentence should be reworked to read '***Maintenance and monitoring of the refrigeration equipment in the cabinet to ensure that it is functioning correctly should be considered a CCP.***'
- paragraph 2: for further clarification the word 'appropriate' should be added so the sentence reads '***Display cabinets should be equipped with an appropriate temperature measuring devise...***'
- paragraph 4: the words '***or peak storage periods***' should be added at the end of the sentence.
- Paragraph 7: this sentence should read 'The retail establishment should have ***an appropriate*** back-up storage room for quick frozen foods.'

Annex 1 & Annex 2

- Any revisions that are made to the text in relation to steps that are considered DAP's and CCP's (see comments on sections 5.5, 5.6 & 5.7) should be reflected in the diagrams in Annex 1 & 2.
- Annex 2, illustrative examples on the application of DAPS: Freezing of products both before and after packaging in common practice and therefore the flow-diagram should be amended to add freezing as a step both before and after packaging.

EURO- Commerce

Le nouveau projet, amélioré dans sa forme, appelle sur le fond les mêmes critiques que celles formulées sur la précédente version datée de novembre 2004 concernant la chaîne du froid et la présence de tolérances non compatibles avec un objectif de qualité.

Les précédentes observations à l'exception de quelques § restent en conséquence encore valables.

L'historique des travaux précise que les questions relatives à la sécurité seront examinées dans le cadre du Comité sur l'hygiène des denrées alimentaires (CCFH). EuroCommerce regrette qu'il n'en soit pas tenu compte dès à présent dans le cadre des travaux du comité chargé de la rédaction de ce code des usages. Il n'y a pas d'autre facteur que le froid pour conserver les surgelés tout au long de leur vie ; aussi, il est difficilement concevable que la question du maintien de leur température ne puisse être pleinement traitée dans le cadre de ce projet et dès à présent.

EuroCommerce observe que des CCP apparaissent concernant le respect de la température dans les § relatifs à la préparation et la surgélation. Il serait cohérent et nécessaire que le code des usages ait le même degré d'exigence au regard de la température des produits pour l'entreposage, le transport et la distribution.

Les moyens permettant de respecter la chaîne du froid sont désormais à la portée de tous les opérateurs du monde entier. Aussi, les tolérances se doivent d'être limitées dans leur durée et leur ampleur. Au stade de la distribution finale, il est acceptable qu'elles soient laissées à l'appréciation des autorités locales.

Le plan de ce projet révisé n'a pas été modifié comme l'un des observateurs l'a suggéré, notamment pour la cohérence des § 4, 5 et 6. Le fait qu'un seul commentaire ait évoqué cette nécessité, comme le souligne le secrétariat, ne lui enlève pas sa pertinence. Le projet finalisé ne fera pas l'économie de cette reconsidération.

Ainsi, si l'on admet que les répétitions sont le signe de la nécessité de revoir le plan, voici deux exemples de redites :

- ➔ le texte du premier alinéa du § 4.2 figure aussi à la fin du §5.1
- ➔ Les textes des derniers alinéas des §4.2 et 5.2 sont les mêmes.

Concernant le plan, il convient à nouveau de souligner qu'il importerait de traiter dans deux § distincts du transport et de la distribution.

- ➔ Les surgelés au cours de leur vie sont plusieurs fois transportés par mer, fer ou sur route, avec une interface à chaque étape.
- ➔ La distribution est la phase finale exercée en amont du dernier maillon de la restauration ou du commerce de détail. Elle combine des activités de stockage (entreposage) de manipulation (éclatement des lots) et de transport (livraison finale). Elle ne saurait être assimilée au seul transport. Par ailleurs, sauf exception à ce stade, il ne s'agit que de transport terrestre. La distribution finale doit être traitée après le transport et avant la vente au détail et les interfaces.

Rappels & commentaires détaillés :

§2.2. Définitions

- En français, glazurage et non pas azurage
- procédé de surgélation : le délai doit être réduit au maximum du possible selon les produits ; les crochets sont à enlever pour que la formule soit « le plus rapidement possible »
- Denrée surgelée : il n'y a pas lieu d'insérer une tolérance dans le cadre d'une définition. La parenthèse doit être supprimée.
- Tolérances : elles ne doivent affecter ni la sécurité, ni la qualité

- Point de transfert : ils se situent entre « deux enceintes de froid » et non pas « deux points de la chaîne du froid ». Le transfert étant en lui-même une étape de la chaîne.
- Autre observation relative au vocabulaire : « shelf life » se traduit en français par « durée de vie » et non pas par « vie d'étagère ».

4.3. Procédés de congélation

- Il s'agit ici du code des usages pour la transformation et la manipulation des surgelés.
- La recommandation qui figure dans cet alinéa se réfère à une méthode de congélation en voie de disparition (ou qui devrait l'être). Il ne s'agit pas de surgélation.
- Ainsi, et ce n'est pas une moindre des lacunes de ce projet est qu'aucun § ne traite de la surgélation, ce qui n'est pas acceptable. Le code des usages ne peut être validé tant qu'il ne traite pas effectivement des procédés de surgélation tels que par exemple la surgélation sur lits fluidisés en IQF.
- Il convient d'associer à cette critique, celle déjà plusieurs fois exprimée relative à l'exemple schématisé de la surgélation de beignets de poulet figurant en annexe 1 et 2, qui place la surgélation après la mise en carton et non avant le conditionnement, comme cela se pratique en surgélation pour obtenir un bon résultat. Selon cet exemple, les beignets sont congelés et non surgelés, ce qui est cohérent avec le §4.3 mais non pas avec l'objectif du code.

5.5. Entreposage frigorifique

5.6 Transport et distribution

5.7. Vente au détail

- A toutes ces étapes, il conviendra de retenir que le respect de la température est à la fois un CCP et un DAP. Il n'est pas possible de présumer de l'importance et de la gravité d'un incident de température qui peut créer une évolution nuisible du produit (développement de toxines), aussi le maintien de la température doit être un CCP.
- Concernant le transport au § 5.6 :
 - o parmi les recommandations, il importe de souligner que les denrées doivent être présentées au chargement à une température inférieure à -18°C.
 - o Le mot « brève » pourtant essentiel ici a été retiré de l'alinéa relatif à la tolérance de température et doit être remis à sa place : « Une brève élévation de la température du produits... ». Il ne résulte pas des observations reçues que ce retrait soit justifié.
 - o L'alinéa relatif aux chargements et déchargements aurait sa place dans le § Interfaces.
 - o au dernier alinéa sur la distribution finale (qui doit faire l'objet d'un § en soi) :
 - les détaillants ne sont pas les seuls destinataires : il faut tenir compte de la restauration et des autres clients utilisateurs de surgelés
 - le conditionnel du verbe n'est pas satisfaisant : mettre « doit » à la place de « devrait ».
 - tolérances de température : il est acceptable de s'en remettre aux limites fixées par les législations nationales, mais la référence au seuil de -12°C doit être enlevée. Si un seuil doit être mentionné, c'est celui de -15°C.
- Concernant la vente au détail au § 5.7 :
 - o La tolérance jusqu'à -12°C doit être retirée.

- La vente au détail est toutefois le seul endroit où il est envisageable de permettre de laisser demeurer ce seuil maximal dans le code des usages en raison du niveau de performance souvent insuffisant des meubles de vente ouverts. Ce seuil ne saurait être toléré pour une étape antérieure dans le code.

5.8. Interfaces

- La description faite par la 1^{ère} phrase de l'alinéa introductif ne correspond pas à la réalité des cas où le produit peut être manipulé hors enceinte de froid : nombreuses étapes de transfert entre véhicules de transport et entrepôts en amont, éventuelles manipulations pour conditionnement.
- Les moments hors froid se répètent de nombreuses fois au cours de la vie du produit. Leur maîtrise est essentielle pour maintenir la chaîne du froid et la qualité finale du produit. Elle mérite un développement plus conséquent dans le code des usages qui devrait formuler des recommandations concrètes quant aux procédures et mesures à prendre pour maîtriser la température des produits lors de ces ruptures de charge.
- Ainsi, il convient de conseiller d'évaluer, en fonction des opérations à effectuer, des moyens utilisés et de la température ambiante, la durée maximale dans laquelle une opération doit être effectuée pour ne pas entamer le capital température des produits.
 - Les instructions d'organisation du travail doivent être données en conséquence
 - des moyens appropriés doivent être pris pour réduire le temps d'opération dans le laps de temps défini.
- Le risque de rupture de la chaîne du froid est à son maximum aux interfaces. A chacune des étapes suivantes un DAP et un CCP doivent être identifiés :
 - à la réception et au déchargement (pendant les contrôles de conformité, etc.)
 - lors de la mise en chambre froide (attente d'attribution de place, etc.)
 - au sein d'un même établissement de stockage, lors du déplacement entre deux enceintes de froid si elles sont séparées : transfert de lots d'une chambre de stockage de masse à une chambre de préparation de commandes par exemple
 - lors d'opérations de regroupage, palettisation effectuées hors froid ...
 - lors de l'expédition et du chargement.
- Les remontées en température sont des non conformités qui remettent en question la nature et la définition du produit surgelé et doivent être traitées comme telles.
- Le code des usages ne peut recommander d'abaisser la température au cours du transport : les moyens de transport ne sont conçus que pour maintenir la température, ils ne disposent pas d'une production de froid suffisante pour refroidir les produits.

6.2 Non-conformité des températures

- Le code des usages dans sa forme actuelle se préoccupe plus des tolérances que des bonnes pratiques. Il devrait au contraire attirer l'attention sur l'importance du capital température des produits et sur les moyens de le préserver.
- Il doit recommander de maintenir les produits à une température stable et basse en deçà du seuil de -18°C, afin de leur donner une réserve ou volant de froid leur permettant de ne pas être affectés par les manutentions aux moments des interfaces. C'est une bonne pratique élémentaire pour tout professionnel du surgelé. Cette pratique mérite d'autant plus d'être recommandée que :

- elle est économe en énergie. En effet, il faut moins d'énergie pour maintenir ainsi les produits que celle qui est dépensée, après une remontée de deux ou trois degrés, pour ré-abaisser leur température. Surtout si les produits sont au stade final de leur distribution et sont protégés par leurs conditionnements, conçus pour les protéger des ruptures de froid : ils freinent considérablement le processus de refroidissement.
- elle est nécessaire au maintien de la qualité des produits.
- Comme déjà indiqué, la norme ne peut tolérer a priori et sans garde-fou qu'un produit surgelé qui a subi une rupture de la chaîne du froid puisse tout simplement être à nouveau refroidi et remis dans le circuit commercial. Le froid est le seul facteur de conservation de ces aliments. Son absence remet en question la qualification du produit.
- En principe, les produits qui ont subi une rupture de la chaîne du froid doivent être déclassés aux frais du détenteur. Toute autre solution revient à ruiner les efforts des professionnels qui ont mis en place les moyens d'une chaîne du froid sûre.

Tableau 2. Feuillet de description des DAP

- Les propositions de traitement des non conformités dans l'annexe 2 pour les DAP 10 à 14 (de la production à la vente au détail), lesquels sont aussi des CCP, sont inadaptées.
- Le fait que la température d'un produit surgelé ne soit plus conforme est une non-conformité en elle-même qui doit être établie quel que soit le résultat des analyses biologiques. L'évaluation biologique ne doit servir qu'à contribuer à définir le devenir des produits qui ne sauraient être maintenus dans leur circuit de commercialisation initial.
- Aux stades de l'entreposage, du transport et de la vente au détail, il ne s'agit plus « d'arrêter la production »

Annexe 3 §4 Contrôle de la température

Une suspicion légitime de rupture de la chaîne du froid doit pouvoir justifier un contrôle destructif y compris après un contrôle non destructif donnant un résultat conforme (alinéa 4). L'expérience montre que la température entre deux cartons d'un chargement peut être conforme alors que la température des produits contenus par ces derniers ne l'est pas.

International Dairy Federation (IDF)

IDF is of the view that the Recommended International Code of Practice for the Processing and Handling of Quick Frozen Foods is not relevant for quick frozen dairy products as the hygienic aspects of these products are already adequately covered by the recently adopted Codex Code of Hygienic Practice for Milk and Milk Products (CAC/RCP 57-2004).

In fact, the approach taken by the Codex Code of Hygienic Practice for Milk and Milk Products with regard to the planning of the control of identified hazards and to ensuring suitability is quite different from the approach followed by the current draft Code on Quick Frozen Foods. Not exempting frozen dairy products from the scope of the latter will lead to confusion in international trade.