Qualitätssicherung. **Vom Landwirt bis zur Ladentheke.**

Guideline **Preparation/Processing Fruit, Vegetables, Potatoes**

QS. Ihr Prüfsystem für Lebensmittel.

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Contents

1 Fundamentals

You will find basic information on the QS scheme, such as organisation, terms of participation, use of the QS certification mark and sanction procedures in the **Guideline General Regulations.**

1.1 Scope

The following requirements apply to businesses involved in the preparation and processing of fruit, vegetables and potatoes (with the exception of food retail branches). These requirements refer to all processes listed in this guideline that take place at the production location. The trade with prepared/processed goods is also part of the scope of this guideline.

If companies with an approval for the stage Preparation/Processing Fruit, Vegetables, Potatoes also process meat and meat products and these goods are to be marketed as QS goods, they need to be certified as well according to the guideline "Processing Meat and Meat Products". A certification for the processing of meat and meat products is not necessary if raw materials will only be portioned and therefore directly used as ingredients.

The production/preparation of products with increased risk potential such as germ buds and sprouts also falls under the scope of this guideline. The exception to this is germ buds and sprouts which grow in a greenhouse on substrate or mat of fibres and their roots and/or seeds which are not consumed. Companies that produce sprouts and/or seedlings must also be certified according to the QS-GAP guideline.

1.2 Responsibilities

Scheme participants are responsible for:

- Compliance with requirements
- Full and correct documentation
- Self-assessment
- Correct and timely implementation of corrective actions
- Correct use of the QS certification mark and labelling of products

They must comply at all times with the requirements of the QS scheme and always be in a position to demonstrate compliance with said QS requirements. They must ensure that, in addition to the requirements of this guideline and other applicable QS requirements (for example: general regulations, guideline certification, guideline residue monitoring), the legal provisions that apply in the country in which the products were produced as well as the country in which they are marketed by the scheme participant are fulfilled**.**

2 General Requirements

2.1 General Scheme Requirements

2.1.1 General Business Data

A company overview must be prepared containing the following master data:

- Address of main company and all production sites
- Legal form of company
- Legal representative, contact and substitute contact
- Current address
- Telephone and fax number
- E-mail address
- QS identification number (QS-ID)
- Type of company and location number
- Details of production scope
- Details of crisis management (including naming of crisis manager)

The scheme participant is responsible for entering these master data into the QS database and keeping them up to date.

Furthermore, the following information must be included in the company overview:

- Details of existing quality management and auditing systems (e.g. ISO 9001, IFS, BRC)
- Details of commissioned laboratories (current address, telephone and fax number, e-mail address, analysis area)

Existing documentation may be used (e.g. QM or HACCP). The company overview remains on the company premises.

Company overview

2.1.2 Use of the QS Certification Mark

Scheme participants are entitled to use the QS certification mark once they have been permitted to do so within the framework of a QS scheme agreement. The QS certification mark may only be used in accordance with the stipulations in the **Style Guide (Annex 5.3 to the Guideline General Regulations)**.

Scheme participants may only deliver goods with the QS certification mark on the label or on the packaging, if they themselves as well as the recipient/reseller of the goods are indicated in the QS database as QS scheme participants with eligibility of delivery. Goods labelled with the QS certification mark must be labelled in the delivery notes in accordance with requirement 5.2.5. In justified individual cases it may be deviated from this if it can be expected that the reseller will no longer actively advertise and/or market said products as QS produce in its own business transactions and customer contacts. Then, in the accompanying papers the products must not be described as QS.

Goods from producers with a GLOBALG.A.P. option 2 certificate or a GLOBALG.A.P. option 1 mulitsite with QMS certificate can only be labeled with the QS certification mark if the producers are authorized for the usage of the certification mark. Producers who are not authorized for the usage of the certification mark on goods are marked in the QS database.

2.1.3 Incident and Crisis Management

QS has built up a comprehensive crisis management system which provides the scheme participants with active support in the event of an incident or crisis. The scheme participants must immediately inform QS and - if a legal obligation exists - the appropriate authorities about scheme-relevant critical events and public product recalls.

Critical events are scheme-relevant events that represent a hazard to humans, ecology, financial values or the QS scheme in its entirety or that can become a hazard to the above. In particular, the scheme participants must inform QS of:

- All scheme-relevant nonconformities established in the procurement of goods, production or marketing that might pose a risk to food safety
- All criminal investigations or investigations by supervisory authorities, where these investigations are directly or indirectly connected to ensuring food safety
- Media research, critical media reports and public protests that are carried out that directly or indirectly concern questions of food safety

Every scheme participant must keep a paper of incident close at hand in order to pass on all of the required information to specified recipients without delay in the event of an incident. In addition to this, every scheme participant must nominate a responsible person who can also be reached outside regular working hours. The crisis adviser must be entered in the QS database.

A procedure on what to do in the event of an incident or crisis must be defined and introduced and verified at regular intervals, but at least once a year (approximately every 12 months). The following points must be included therein: creation of a crisis team, emergency phone number list, procedure for product recall and receipt, communication plan, customer information.

Paper of incident, incident and crisis management procedure

2.1.4 Document Handling

A procedure that regulates the archiving and recording of documents must be on hand and applied at the company. All relevant records must be kept in detail and without any gaps.

Unless longer retention periods are stipulated by law, documents and records of the internal checks made within the scope of the self-assessment system must be kept for at least two years in line with the duty of diligence and obligation to produce proof to third parties.

2.1.5 Company Premises and Access Regulations

All buildings and operational facilities must be protected against unauthorised access and, where possible, locked. Access regulations must be in place. Work rooms in which food is prepared/processed or stored must not be accessible to unauthorised persons.

All persons who do not belong to the company may only enter work rooms when accompanied by or with the consent of an authorised person and must receive instructions before entering work rooms.

If the vehicles of external businesses, e.g. vegetable transporters or disposal vehicles, enter the work area, the hazards that could result from this must be identified and analysed within the scope of a risk analysis.

2.2 Self-Assessment

2.2.1 [K.O.] Realisation of Self-Assessments

Compliance with QS requirements must be checked. Self-assessments must be conducted on a regular basis; this must be documented using a checklist at least once a year. Existing assessment and documentation systems which guarantee that the QS requirements are fulfilled can also be used.

The internal checks can be documented on the basis of automatic registration processes (e.g. automatic temperature records) as well as by means of manual records (e. g. incoming goods inspection).

External companies with the corresponding qualifications may also be commissioned to conduct the self-assessment.

Self-assessment checklist

2.2.2 Fulfilment of the Initiated Measures in the Event of Deviations

Nonconformities identified during the performance of the self-assessment must be rectified as rapidly as possible. Responsibilities and deadlines are to be defined for this purpose.

2.3 HACCP

2.3.1 [K.O.] HACCP-Concept

To ensure the necessary food safety, the company must establish, utilise and maintain a system to control hazards in compliance with HACCP principles (**Codex Alimentarius**).

The HACCP-concept must contain all relevant processes and hazards (e.g. thawing and tempering of goods, glass breakage at canning etc.). When building up a HACCP-concept, care must be taken to ensure that it can be easily understood by third parties.

2.3.2 HACCP Team

The top management must appoint a HACCP team which is responsible for the implementation and maintenance of the HACCP concept. It must be proven that the HACCP team is sufficiently experienced regarding all areas of the company.

If there are multiple HACCP teams, a coordinator must be appointed who is responsible for the systematic work of the HACCP team.

2.3.3 Product Description

A complete product/article group description must be compiled. This description must comprise the following points:

- Composition of the product/article group
- Physical and chemical structure
- Antimicrobial/Bacteriostatic treatment
- Packaging
- Shelf life
- Storage conditions

The intended purpose of the product/article group must be defined.

2.3.4 Flow Diagrams

A flow diagram which contains a schematic representation of the entire production process must be created.

2.3.5 Hazard Analysis

The HACCP concept is based on identifying hazards which then have to be avoided, eliminated or reduced to an acceptable level.

2.3.6 Critical Control Points (CCPs)

Determination of critical control points (CCPs) on the process stage(s) on which control is necessary in order to avoid or rule out a risk or reduce a risk to an acceptable level, should a risk be present.

2.3.7 Limit Values for CCPs

Definition of limit values for these critical control points on the basis of which a distinction can be made between acceptable and unacceptable values with regard to the avoidance, elimination or reduction of determined risks.

2.3.8 Monitoring and Verification of Limit Values for CCPs

Determination and implementation of efficient methods for the monitoring of critical control points – as well as establishment of verification methods to determine whether the measures named in the HACCP principles function completely and effectively. The verification methods must be applied on a regular basis.

2.3.9 Corrective Actions for CCPs

Determination of corrective actions in the event that monitoring shows that a critical control point is not under control.

2.3.10 Responsibilities

Responsibilities must be clearly defined by means of an organisational chart.

2.3.11 Records

Documents and records appropriate to the type and size of the company must be prepared in order to prove that the measures listed in the HACCP principles are applied.

2.3.12 HACCP Verification

Implementation of the HACCP concept must be reviewed once a year (verification). If changes are made to a product, a production process, a processing method, or a storage or marketing stage that are relevance to the HACCP concept, the company must review the HACCP concept and adjust it as necessary.

Self-assessment records, checklists

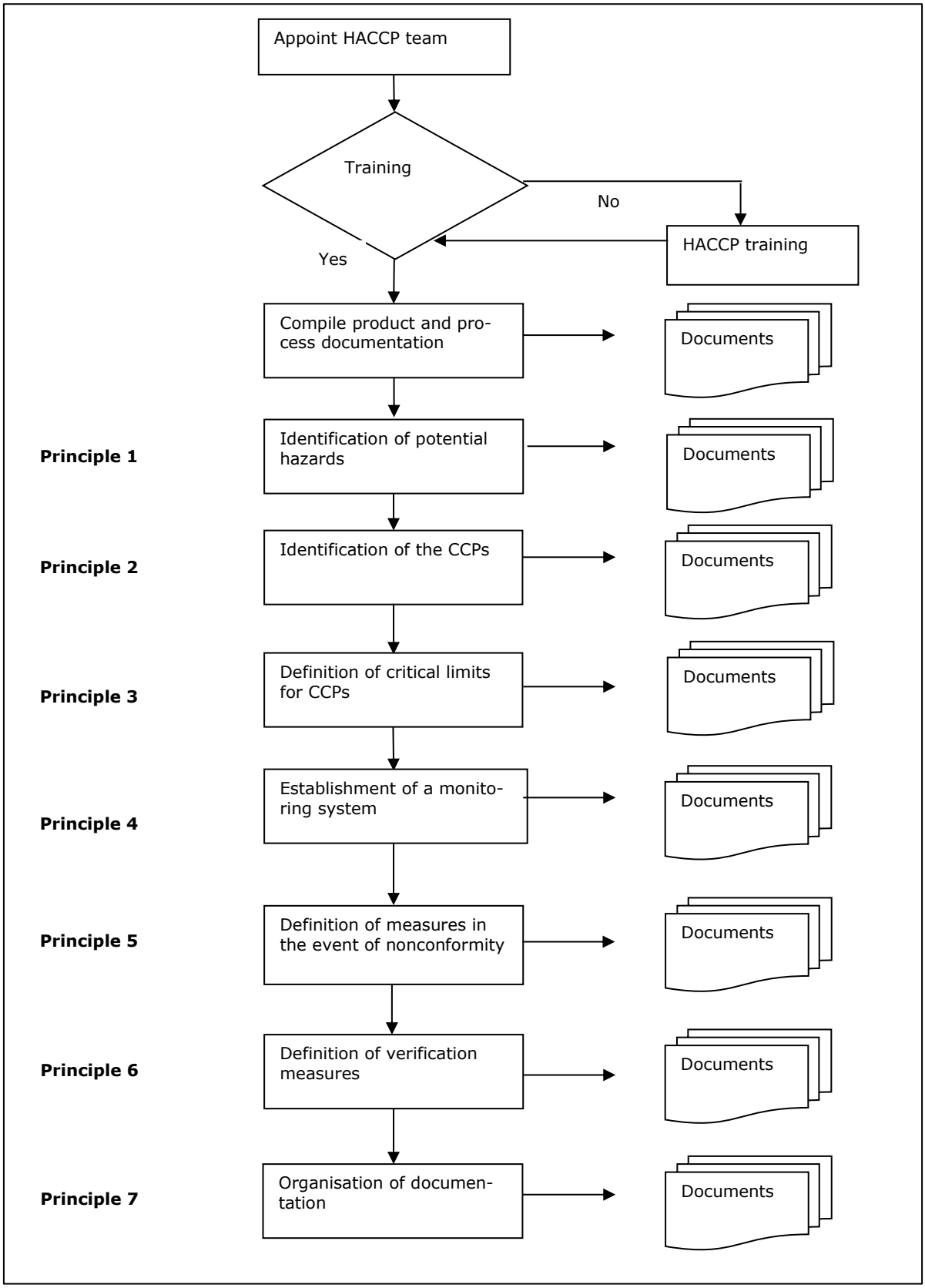

Figure 1: Compilation of an HACCP study

2.4 Good Manufacturing and Hygiene Practice

2.4.1 Water Quality

- Drinking water

must be made available in sufficient quantities and may not pose any risk of contamination. A filling tap plan must be present in the company. Regardless of its origin or aggregate state, water which is used for the production and/or treatment of food and for the cleaning of objects and equipment that come into contact with food must be proven to comply with the following *microbiological parameters*:

- Escherichia coli (E. coli) 0 CFU/100 ml
- Enterococci 0 CFU/100 ml

Compliance with the microbiological parameters must be demonstrated by at least annual analyses. Samples must be taken from the extraction point.

In addition, compliance with the following *chemical parameters* is to be ensured:

- Arsenic 0.01 mg/l
- Cadmium 0.003 mg/l
- Lead 0.01 mg/l

Compliance with *chemical parameters* must be verified at least annually based on own analysis or based on the analysis results of the water supplier.

Sampling must be carried out by a qualified sampler according to a risk-based plan. For the analysis of the water, only laboratories accredited for drinking water analysis may be commissioned.

If the water complies with the specifications of the German **Drinking Water Regulation 2001 (TrinkwV 2001)** in its current version and/or European **Directive 98/83/EC on the quality of water for human consumption**, the above requirements are deemed to have been met.

- Process/Washing water

must be replaced and/or, where necessary, treated at regular intervals based on a risk analysis. The contamination risk must be kept as low as possible.

Filling tap plan, water quality control plan, process water risk analysis

2.4.2 Cleaning and Disinfection

Hygiene checklists/cleaning and disinfection plans must be available for all relevant operational facilities and communicated to staff via notices. The plans must contain the following information:

- Responsibilities
- Areas and equipment that have to be cleaned and/or disinfected (e.g. cutting tools such as knives)
- Utilised products and their regulations for use
- Cleaning intervals
- Obligation to keep records
- Hazard symbols (if required)

Implementation of the requirements on the hygiene checklist/cleaning and disinfection plan must be reviewed on a regular basis (at least once a year). The results must be documented.

When using disinfectants to disinfect hands, the company must choose products contained in the current disinfectant list of the **Association for Applied Hygiene (VAH)** or other comparable national guidelines. The use of disinfectants to disinfect the facility, installations and equipment must be based on the disinfectant list of the **German Association of Veterinary Medicine (DVG)** or other comparable national guidelines.

Cleaning and disinfection plans, hygiene checklist, implementation review results
Hygiene checklist, disinfectants used in operations

2.4.3 Pest Monitoring and Control

It must be ensured that a high level of cleanliness and hygiene is maintained in all work/storage areas in order to prevent the attraction of pests and vermin. In the operating rooms, precautionary measures must be taken to repel pests that adversely affect food. Appropriate measures for pest monitoring or, if necessary, for pest control must be introduced.

Within the implementation of pest monitoring and control, measures and qualifications of the user must comply with the legal requirements of the country as well as the particular product specifications. Monitoring and bait points need to be controlled at least every month as long as no other control interval is determined on the basis of a risk assessment. In order to guarantee the safety of the food as well as that of the employees, suitable pest control methods and pesticides must be used. This pest control treatment must not jeopardise the safety of the produced or stored products.

A permanent baiting (without infestation) with rodenticides is only permissible in exceptional cases if the implementation takes place strategically via a professional and qualified pest controller who meets the legal requirements of the appropriate country. The exceptional case needs to be proven and documented by an annual risk analysis and risk assessment of the pest controller. Only baits that are approved for this purpose may be used.

The documentation must contain at least the following information:

- Information on used products for pest prevention and control
- Date of treatment as well as the specification of the applied quantities
- Proof that the employees involved in pest control are suitably qualified (expertise required for the respective task)
- Checkpoint plans showing the positioning of monitor- and bait stations (also for temporary checkpoints)
- Records of pests found (findings)
- Measure plans in case of pest infestation

Documentation of pest control, pest control plan, where applicable evidence of qualification, if applicable contract with specialist companies

2.4.4 Handling of Deviating Products

The process for dealing with nonconforming goods, pieces of equipment and packaging materials in the company must be regulated and implemented in line with the defined stipulations. In particular, rules must be in place for dealing with fallen unpackaged products or products which do not meet specifications due to production defects. A responsible employee must decide on the subsequent use of the product (release, post-processing/secondary treatment, blocking, rejection/disposal).

Goods with expired best-before date/use-by date must be stored separately from the other goods. These goods must be handled in line with internal guidelines and, where necessary, disposed of in the proper manner.

Documentation regarding the handling of deviating products

2.4.5 Monitoring of Test Equipment

When checking and monitoring the instruments and devices used as test equipment (e.g. thermometers), the intervals stipulated by the manufacturers must be complied with. If a manufacturer has not made any stipulations in this regard, the test equipment must be calibrated or checked in line with the perceived estimation of the risk but at least once a year (approx. every 12 months).

If a calibration is not possible for certain measuring devices, these measuring devices must be serviced and maintained accordingly. The measuring methods of the various pieces of test equipment must be taken into account. The procedure for calibration or testing must be described for every piece of test equipment.

Calibration results for the test equipment used (incl. deviations, actions taken) must be documented and must be clearly attributable to the individual pieces of equipment. The measuring accuracy, reliability and operational readiness of measuring equipment must be guaranteed. Scales used for monitoring filling weight must be calibrated.

Applicable document is the **Law governing the measuring and calibration system (Calibration Law)**.

Calibration documentation

2.4.6 [K.O.] Risk of Contamination

Contamination must be avoided. This includes biological, chemical and physical hazards as well as nauseating influences. For this purpose, a risk-based management needs to be carried out, in which diverse sources of contamination like food waste need to be taken into account.

The penetration of foreign matter into foods must also be avoided. The hazards and possible entry sources of foreign matter must be identified and assessed on the basis of a risk analysis. Appropriate precautionary measures must be taken and procedures established to minimise this risk.

The responsible employees must be aware of and observe the detection limits and application regulations for the equipment that is used. Regular internal checks must be performed to assess the success of detection. These checks must be documented.

Cross-contamination due to other products must be avoided. In particular, contamination of other products must be avoided in the preparation/processing of products that contain allergenic substances. To this end, appropriate stipulations and work instructions must be in place in the company. The responsible employees must be adequately trained.

Documentation of foreign substance management

2.4.7 Recipes

Recipes are to be compiled for all products made in-house. The recipes must be known to relevant employees and must be readily accessible. The specified ingredients must be in line with the recipe in question.

A procedure must be defined and applied for the release and the verification of the recipes as well as for the communication of process-related points that need to be taken into consideration when there are changes to recipes.

Recipes

2.4.8 Specifications

Detailed specifications must be defined and complied with for all prepared/processed products as well as purchased products.

2.4.9 Access to Preparation and Processing Rooms

Before entering the preparation and processing rooms for the first time, all employees must be instructed with regard to rules of conduct. All visitors must also be suitably instructed before entering the preparation and processing rooms for the first time. Where necessary, visitors must be given suitable protective clothing and headgear. Present company specific access regulations are followed.

Access rules preparation/processing rooms

2.4.10 Containers for Storage and Transport

Containers in which goods are stored and transported need to be intact, clean and suitable for food production.

2.5 Staff Hygiene

2.5.1 General Rules of Conduct

There must be documented guidelines for staff hygiene. At least the following points must be taken into consideration:

- Washing and disinfecting of hands
- Eating, drinking, smoking, chewing gum
- Dealing with skin injuries (cuts, scrapes)
- Fingernails, jewellery, piercings, watches
- Hair, beards

Smoking is prohibited during working hours and in work rooms, and only allowed in areas and rooms which are designated for this purpose. Clearly visible "no-smoking" signs must be displayed in the rooms.

Sufficient quantities of protective clothing and headgear must be made available to all employees.

Sufficient facilities for hand hygiene must be provided. The facilities for hand hygiene must fulfil at least the following requirements:

- Running cold and hot water
- Liquid soap in dispensers (not in e.g. bottles)
- Disinfectant in dispensers (in preparation and processing areas)
- Notes on the use of disinfectant (in preparation and processing areas)
- Non-touch taps (in preparation and processing areas)
- Suitable hand drying facilities

In addition, appropriate and logically positioned facilities must be available for the storage of clothes.

All persons (employees, service providers etc.) must adhere to the staff hygiene guidelines. There must be a procedure in the company for reviewing the consistent implementation of personnel hygiene rules. The results of the review must be evaluated and, where necessary, action taken to improve the situation. All persons whose work has an influence on the safety of products must have the necessary experience/training.

Rules of conduct

2.5.2 Staff Rooms

Suitable changing rooms must be available for company employees and persons from outside the company. Where necessary, street and protective clothing must be kept separately.

Staff rooms, including break rooms, must be kept clean. Rooms must be cleaned at regular intervals. Cleaning must be documented.

Operational records, cleaning plan for staff rooms/break rooms

2.5.3 Hygiene Sluice

Hands and shoes must be cleaned and disinfected thoroughly before entering the preparation and processing area. On basis of a hazard analysis the cleaning and disinfection of footwear can be dispensed.

The effectiveness of cleaning and disinfection of hands is to be examined randomly risk-based with microbiological tests of the surfaces of employee's hands at least every year (approx. every 12 months).

2.6 Training of Staff

2.6.1 [K.O.] Hygiene Training/Infection Protection Act (IfSG)

Hygiene training must be conducted on the premises once a year (approx. every 12 months) on the basis of **REG (EC) No. 852/2004**. Documented training programmes must be defined in line with product requirements and staff training needs. This training plan contains all rules of conduct (⇒ 2.4.1 General rules of conduct) as well as:

- Training contents
- Training intervals
- Participant group
- Languages
- Instructor

If required by the legislator, employees with activities in preparation and processing rooms must be trained with regard to the provisions of the **Infection Protection Act** (IfSG). This training must be documented. In the QS scheme, the training must be conducted at least once a year (approximately every 12 month).

Before working in the food sector for the first time, staff must also take part in a health instruction session (employees who are in possession of a health certificate fulfil this requirement), if this is required by the legislator. The first time an employee works in this sector, the certificate from the health authorities or an authorised physician may be no older than three months.

Training programme and proof of training, certificate from the health authorities

2.6.2 Information on the QS Scheme

The responsible employees must be informed about the requirements of the QS Scheme Manual once a year. In addition to the basic principles of the QS scheme, this includes above all the specific QS requirements that lie within the scope of responsibility of the employees in question. The information must also cover the use of the QS certification mark. This includes:

- Correct use of the QS certification mark in line with the Style Guide
- Checking use of the mark on incoming goods
- Conduct in the event of nonconformities

2.6.3 General Training

Employees must participate once a year in internal/external training courses that are to be recorded in the company documentation. If relevant for the company, trainings have to be performed inter alia to the following topics:

- Commodities science and labelling
- Quality standards/Marketing standards
- Disease and pest infestation of products
- Transport and packaging
- Work safety

All personnel must be trained at the beginning of their employment and thereafter every year with regard to their tasks. The training sessions must be structured according to level of training and job activity of the persons to be trained in the company. The names of the persons who provided the training, the date of training, the names of participants, the topic and, if applicable, any training material that was used or handed out must be documented.

Training programme and proof of training

2.7 Cold Storage Rooms

2.7.1 Technical/Structural Condition

Cold-storage rooms in which food is handled must be clean and constantly maintained as stipulated in **Regulation (EC) No. 852/2004 Annex II**. They must be laid out, designed, constructed and dimensioned in such a way that appropriate cleaning and/or disinfection is possible, and that contamination is avoided or reduced to a minimum. The following requirements must be met for this purpose:

- Floor coverings and wall surfaces must be kept in flawless condition and must be easy to clean as well as disinfect when necessary.
- Ceilings (or where there are no ceilings, roof interiors) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, mould and the flaking of particles from materials are reduced to a minimum.
- Windows and other openings must be built in such a way that the accumulation of dirt is avoided. If they can be opened to the outside, they must be fitted with insect screens which must be easy to remove for cleaning purposes.
- Doors must be easy to clean and, where necessary, to disinfect. They must therefore have smooth, water-repellent surfaces.
- Surfaces (including equipment surfaces) that come into contact with food must be kept in a flawless condition and must be easy to clean and disinfect if necessary. Accordingly, they must therefore be made of smooth, abrasion-proof, corrosion-proof and non-toxic material.

Cold-storage rooms and refrigeration facilities must be kept in an appropriate condition and must be maintained in accordance with written instructions. Maintenance work must be carried out in a hygienic and controlled manner and must not jeopardise the safety of food. All material that is used for maintenance and repair work must be suitable for the purpose.

The maintenance program must always contain the following elements:

- Transport systems (where present)
- Responsible employees (own employees or outside contractors)
- Frequency

It must be proven, based on records of maintenance activities, that the above requirements are met.

Documentation of maintenance

2.7.2 Room, Equipment and Plant Hygiene

The cold-storage rooms must be in a clean and hygienic condition.

Mould accumulation must be prevented in the cold-storage rooms and steps taken to remove mould if necessary. Care should also be taken to ensure that icing is reduced to a minimum. The cooling units must be serviced on a regular basis and kept in a hygienically flawless condition.

The accumulation of water in unused spaces must be avoided and there may be no large corrosion areas on systems and machines. The transport containers and vehicles must be kept hygienically clean. Areas for storing pallets and barrels must be cleaned on a regular basis.

The rooms are to be cleaned on a regular basis in line with a cleaning plan; this applies in particular to the floor covering. The frequency of cleaning is to be based on the work rhythm/restocking in the work rooms/storage rooms.

Cleaning plans, disinfection plans, hygiene checklist, implementation review results

2.7.3 Ground Clearance

Products may not have any direct contact with the ground. Containers for storing products must not be placed directly on the ground. They must always be stored on pallets or mobile base with wheels.

Primary products may be stored directly on the ground or on the appropriate devices if the floors or material on which they are stored are in a clean and flawlessly hygienic condition.

2.7.4 Storage Management

A plausible and understandable storage management system must be in place on the basis of which it can be quickly and clearly identified which products were placed into storage when. Each stored or temporarily kept product or packaging unit needs to be clearly identifiable. The storage conditions may not have any negative effects on the product properties (packaged or unpackaged). A procedure outlining the measures and steps to be taken in the event of a breakdown or failure of the system must be established and the responsible personnel must be aware of these measures.

Storage in batches must be guaranteed. The batches are to be labelled. The storage company is responsible for defining what constitutes a "batch". Different varieties must not be mixed.

The following information must be traceably documented:

- Date of delivery
- Store/Box/Crate designation
- Delivering party
- Variety
- Quantity

Documentation of storage

2.7.5 [K.O.] Temperature Recording and Monitoring

Temperature recording and monitoring must be such that the requirements for the product temperature (⇒ 5.1.8 Product temperature) are met.

The temperatures of all cooling equipment must be registered and documented. Furthermore, a procedure to be followed in the case of a technical fault must be laid down and known to the employees.

Potatoes

Separate records on climate management and climate development in the warehouse are necessary for potatoes. They must include:

- Information on the changes in the temperature of the outside air
- Indoor air temperatures
- Temperatures of tubers
- Ventilation hours
- Mode of operation of the ventilation equipment

Temperature records, climate records, temperature checklist

2.7.6 Prerequisites for Maintaining Quality

Specific climatic conditions, such as temperature, humidity and other guidelines in accordance with the specifications for stored products, must be complied with in the rooms or facilities where products or pieces of equipment are stored (in particular the rapid drying of moist tubers, wound healing etc. in the case of potatoes). To avoid the occurrence of condensate, the changes in temperature need to be taken into account.

During storage, the state of the goods and the defined storage conditions must be regularly monitored and documented.

Potatoes

When cold air is used in the storage of potatoes, the variety-specific differences in the formation of reducing sugars must be taken into account.

Documentation on the quality of the goods and the storage conditions

2.8 Deep Frozen Storage Rooms

2.8.1 Technical/Structural Condition

Freezer rooms in which food is handled must be clean and constantly maintained as stipulated in **Regulation (EC) No. 852/2004 Annex II**. They must be laid out, designed, constructed and dimensioned in such a way that appropriate cleaning and/or disinfection is possible, and that contamination is avoided or reduced to a minimum. The following requirements must be met for this purpose:

- Floor coverings and wall surfaces must be kept in flawless condition and must be easy to clean as well as disinfect when necessary.
- Ceilings (or where there are no ceilings, roof interiors) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, mould and the flaking of particles from materials are reduced to a minimum.
- Windows and other openings must be built in such a way that the accumulation of dirt is avoided. If they can be opened to the outside, they must be fitted with insect screens which must be easy to remove for cleaning purposes.
- Doors must be easy to clean and, where necessary, to disinfect. They must therefore have smooth, water-repellent surfaces.
- Surfaces (including equipment surfaces) that come into contact with food must be kept in a flawless condition and must be easy to clean and disinfect if necessary. Accordingly, they must therefore be made of smooth, abrasion-proof, corrosion-proof and non-toxic material.

Work rooms and systems must be kept in an appropriate condition and must be maintained in accordance with written instructions. Maintenance work must be carried out in a hygienic and controlled manner and must not jeopardise the safety of food. All material that is used for maintenance and repair work must be suitable for the purpose.

The maintenance plan must contain the following elements in all instances:

- Transport systems (where present)
- Responsible employees (own employees or outside contractors)
- Frequency

It must be proven, based on records of maintenance activities, that the above requirements are met.

Documentation of maintenance

2.8.2 Room, Equipment and Plant Hygiene

The freezer rooms must be in a clean and hygienic condition.

Care should also be taken to ensure that icing is reduced to a minimum. The cooling units must be serviced on a regular basis and kept in a hygienically flawless condition.

Neither may there be any large corrosion areas on systems and machines. The transport containers and vehicles must be kept in a hygienically flawless condition. Areas for storing pallets and barrels must be cleaned on a regular basis.

Rooms for deep-frozen goods are to be cleaned on a regular basis in line with a cleaning plan; this applies in particular to the floor covering. The frequency of cleaning is to be based on the restocking frequency in freezer rooms.

Cleaning plans, disinfection plans, hygiene checklist, implementation review results

2.8.3 Ground Clearance

Products may not have any direct contact with the ground. Containers for storing products must not be placed directly on the ground. They must always be stored on pallets or mobile base with wheels.

2.8.4 Storage Management

A plausible and understandable storage management system must be in place on the basis of which it can be quickly and clearly identified which products were placed into storage when. Each stored or temporarily kept product or packaging unit needs to be clearly identifiable. The storage conditions may not have any negative effects on the product properties (packaged or unpackaged). A procedure outlining the measures and steps to be taken in the event of a breakdown or failure of the system must be established and the responsible personnel must be aware of these measures.

Storage in batches must be guaranteed. The batches are to be labelled. The storage company is responsible for defining what constitutes a "batch". Different varieties must not be mixed.

When deep-frozen products are delivered, the following information must be traceably documented based on company records:

- Date of delivery
- Store/Box/Crate designation
- Delivering party
- Variety
- Quantity

Documentation on storage

2.8.5 [K.O.] Temperature Recording and Monitoring

Temperature recording and monitoring must be such that the requirements for the product temperature (⇒ 5.1.8 Product temperature) are met.

The temperature of all cooling equipment must be registered and documented. Furthermore, a procedure to be followed in the case of a technical fault must be laid down and known to the employees.

Temperature records, climate records, temperature checklist

2.9 Storage

2.9.1 Technical/Structural Condition

Storage rooms in which food is handled must be clean and constantly maintained as stipulated in **Regulation (EC) No. 852/2004 Annex II**. They must be laid out, designed, constructed and dimensioned in such a way that appropriate cleaning and/or disinfection is possible, and that contamination is avoided or reduced to a minimum. The following requirements must be met for this purpose:

- Floor coverings and wall surfaces must be kept in flawless condition and must be easy to clean as well as disinfect when necessary.
- Ceilings (or where there are no ceilings, roof interiors) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, mould and the flaking of particles from materials are reduced to a minimum.
- Windows and other openings must be built in such a way that the accumulation of dirt is avoided. If they can be opened to the outside, they must be fitted with insect screens which must be easy to remove for cleaning purposes.
- Doors must be easy to clean and, where necessary, to disinfect. They must therefore have smooth, water-repellent surfaces.
- Surfaces (including equipment surfaces) that come into contact with food must be kept in a flawless condition and must be easy to clean and disinfect if necessary. They must therefore be made of smooth, abrasion-proof, corrosion-proof and non-toxic material.

Work rooms and systems must be kept in an appropriate condition and must be maintained in accordance with written instructions. Maintenance work must be carried out in a hygienic and controlled manner and must not jeopardise the safety of food. All material that is used for maintenance and repair work must be suitable for the purpose.

The maintenance programme must always comprise the following elements:

- Transport systems (where present)
- Responsible employees (own employees or outside contractors)
- Frequency

It must be proven, based on records of maintenance activities, that the above requirements are met.

Documentation of maintenance

2.9.2 Room, Equipment and Plant Hygiene

All rooms, systems and machines must be in a clean and hygienic condition. The accumulation of water in unused spaces must be avoided and there may be no large corrosion areas on systems and machines. The transport containers and vehicles must be kept hygienically clean. Areas for storing pallets and barrels must be cleaned on a regular basis.

Storage, treatment and work rooms are to be cleaned on a regular basis in line with the cleaning plan; this applies in particular to the floor covering. The frequency of cleaning is to be based on the work rhythm/restocking in the work rooms/storage rooms.

Cleaning plans, disinfection plans, hygiene checklist, implementation review results

2.9.3 Ground Clearance

Products may not have any direct contact with the ground. Containers in which products are stored may not be placed directly on the ground. They must always be kept on pallets or mobile base with wheels.

Primary products may be stored directly on the ground or on the appropriate devices if the floors or material on which they are stored are in a clean and flawlessly hygienic condition.

2.9.4 Storage Management

A plausible and understandable storage management system must be in place on the basis of which it can be quickly and clearly identified which products were placed into storage when. Each stored or temporarily kept product or packaging unit needs to be clearly identifiable. The storage conditions may not have any negative effects on the product properties (packaged or unpackaged). A procedure outlining the measures and steps to be taken in the event of a breakdown or failure of the system must be established and the responsible personnel must be aware of these measures. In addition, stipulations must be defined for handling blocked or non-compliant goods.

Storage in batches must be guaranteed. The batches are to be labelled. The storage company is responsible for defining what constitutes a "batch". Different varieties must not be mixed.

The following information must be traceably documented based on company records:

- Date of delivery
- Store/Box/Crate designation
- Delivering party
- Variety
- Quantity

Documentation on storage

2.9.5 Prerequisites for Maintaining Quality

Specific climatic conditions, such as temperature, humidity and other guidelines in accordance with the specifications for stored products, must be complied with in the rooms or systems in which products or pieces of equipment are stored (in particular the rapid drying of moist tubers, wound healing etc. in the case of potatoes). To avoid the occurrence of condensate, the changes in temperature need to be taken into account.

During storage, the state of the goods and the defined storage conditions must be regularly monitored and documented.

Potatoes

When cold air is used in the storage of potatoes, the variety-specific differences in the formation of reducing sugars must be taken into account.

Documentation on the quality of the goods and the storage conditions

3 Requirements for Preparation and Processing

3.1 General Process Requirements

3.1.1 Best-before Date/Use-by Date

When assigning a best-before date (BBD)/use-by date, it must be guaranteed that the product possesses the properties that are typical for the product at the end of the best-before date/use-by date.

Validated microbiological data must be available for assignment of the declared best-before date/use-by date. Parallel to this, a sensory assessment of the products must be performed.

A process must be implemented that provides for regular inspection of the best-before date/use-by date.

Soup greens/Soup vegetables

Based on an appropriate risk analysis, the validated microbiological data for assignment of the declared best-before date/use-by date may be dispensed for soup greens/soup vegetables.

Procedure for checking the best-before date/use-by date

3.1.2 [K.O.] Microbiological Testing in the Operational Facility

In order to guarantee an appropriate standard of hygiene, cleaning and if necessary, disinfection measures must be carried out in the company.

- Requirements in case of an exclusive cleaning/flushing of the operational facility

  If an exclusive cleaning/flushing of the plant is carried out, an optical cleaning control must take place. The result must be documented.

- Requirements in case of a disinfection of the operational facility

  If a disinfection of the plant is carried out, microbiological testing on surfaces has to be carried out regularly in the preparation and processing rooms in order to monitor disinfection measures. If the results are unsatisfactory, measures have to be taken in order to reduce surface germ counts (e.g. training/instruction, testing of disinfectors and agents, maintenance of disinfectors, monitoring of the disinfection process). The responsible cleaning staff must be informed of striking tests as quickly as possible.

  Sampling has to take place at all relevant food contact points (e.g. equipment, systems, conveyor belts, knives, palms of hands) and on other surfaces (e.g. tables, door handles, switches, containers, boxes). These sampling points must be determined on the basis of a risk analysis and documented in a sampling plan. The defined sampling points are to be sampled individually on an alternating basis.

  The sampling plan must ensure that all defined spots in the company are sampled over a specified period. In order to check the effectiveness of disinfection activities, samples have to be taken during production months at least monthly.

  In addition to these minimum requirements, the sampling frequency is to be chosen using a risk-based approach and adapted to (where applicable increased to take account of):

  - Size of company
  - Existing systems (places where washed products are handled)
  - Microbiological sensitivity of the produced goods
  - Results of previous tests

  If required by the legislator, samples for the processing areas and the equipment have to be tested for *Listeria monocytogenes* within the sampling plan. Sampling and analysing must be performed by qualified personnel using suitable methods. If residual effects of disinfections are expected, drawing equipment (contact samples) with disinhibitors has to be used.

Sampling plans for the operational facility, evaluations, results, documentation of measures

3.1.3 [K.O.] Microbiological Monitoring of the Products

Sampling plans must be drawn up for the microbiological tests. In-house self-assessment processes must ensure compliance with the sampling plans and documentation of microbiological status. Proof of the microbiological quality of the products must be provided.

The microbiological analyses of the products have to be performed based on the risk analysis. At least, legal requirements regarding the microbiological criteria for foods have to be met according to regulation **(EC) No. 2073/2005**. The currently valid version of the standard applies.

In addition, it must be ensured that products comply with the microbiological criteria during their shelf life and that specific sensory characteristics are presented. With regard to the sampling for this analysis, one of the following alternatives is to be selected:

Alternative 1: the products (each component individually or each basic mixture based on the different mixing ratios) are to be tested for the parameters at least once a quarter during the production months.

Alternative 2: risk-based product groups must be formed. The product groups are to be tested for the parameters at least once a quarter during the production months.

The frequency of sampling of products is also to be decided on the basis of perceived risk and is to be adapted to (where applicable increased to take account of) the product group in question, sales volume and the results of previous tests.

All components additionally used for the end product must also be sampled in line with a risk-based plan (including for example marinade, cheese, sausage products).

***Note**: risk-based monitoring of prepared/processed products for Norovirus, Hepatitis A virus and Campylobacter is recommended if a contamination/risk for the consumer cannot be excluded.*

Microbiological testing of the products is to be performed by accredited laboratories (in line with EN ISO/IEC 17025 for the area of microbiology).

If the results are unsatisfactory, in case of exceedance of the action value (control plan preparation) and/or in the event of non-compliance with the food safety and process hygiene criteria, the production process must be analysed for causes. If necessary, suitable measures must be taken to reduce the corresponding germ contents:

- Corrective measures (e.g. in the area of production hygiene and in the choice of raw materials)
- Further measures to prevent renewed occurrence of non-acceptable microbiological contamination.

Additionally, for obligate or facultative pathogenic microorganisms must be decided to what extend the sampled batch is a "safe food" in the sense of article 14 of the **Regulation (EC) No. 178/2002** and whether the marketability is guaranteed.

Preparation Process

For ready-to-eat prepared fruit and vegetables, additionally the requirements of the control plan have to be met (table 1).

Tab. 1: Control plan microbiological monitoring for ready-to-eat prepared fruit and vegetables [a] and products made from same

Food category	**Parameter**	**No. of samples**	**Sampling frequency**	**Action value (CFU[b]/g)**	**Analytical reference method[c]**	**Test time (process stage)**
Prepared fruit and vegetables	EHEC (VTEC, STEC)[d]	One sample	Every three months	Not detectable in 25 g	ISO/TS 13136	At the end of the best-before date
Prepared fruit	*Enterobacteriaceae*	One sample	Every three months	$1x10^4$	DIN EN ISO 21528-2	At the end of the best-before date
Prepared fruit and vegetables	Yeasts	One sample	Every three months	$1x10^5$	ISO 21527-2	At the end of the best-before date
Prepared fruit	Coagulase-positive staphylococci[d]	One sample	Every three months	$1x10^2$	DIN EN ISO 6888-2	At the end of the best-before date

Legend Table 1:
(a) See QS definition of "Preparation"
(b) CFU: Colony-forming unit
(c) The currently valid version of the standard applies.
(d) Obligate or facultative pathogenic germs

Sampling plans, plans for measures

If a prepared product is processed by further internal processes or processes taking place at the customer and if it is ensured that the final product is microbiological harmless based on the performed processing steps (like boiling, frosting or canning), the analyses according to the control plan (table 1) as well as the quarterly examinations during the production months lapse. However, it must be ensured that the requirements regarding the microbiological parameters described in the customer's supplier specifications are met. The compliance has to be checked on a random basis by microbiological analyses.

Soup greens/Soup vegetables

In deviation from the control plan (table 1), the microbiological tests for soup greens/soup vegetables are to be performed on the basis of perceived risk.

Canning Production

Notwithstanding the required quarterly microbiological tests by an accredited laboratory, risk-orientated company-internal tests to validate the heat treatment can be performed for microbiological monitoring of the canned foods. For this purpose, the canned foods are to be incubated for a reasonable period and at an appropriate temperature and subsequently evaluated. At the same time cans are to be checked for buckling or swelling. Depending on the product, additional parameters are to be tested (e.g. pH and aw values), thus allowing conclusions regarding the microbiological state of the canned foods to be drawn.

In addition, however, the process of canned food production must be validated at least annually on a risk-oriented basis using microbiological testing, but also in general, whenever a new product is introduced and in the case of changes to existing production processes.

Sample plans for products, test results, documentation of measures

3.1.4 [K.O.] Temperature Recording and Monitoring

If temperature treatment is carried out during preparation and processing, a procedure is to be implemented for temperature recording and monitoring. Corrective action is to be taken in the event of non-conformities.

Procedure for temperature recording and monitoring

3.2 Requirements for Preparation Processes

3.2.1 Technical/Structural Condition

Preparation rooms in which food is handled must be clean and constantly maintained as stipulated in **Regulation (EC) No. 852/2004 Annex II**. They must be laid out, designed, constructed and dimensioned in such a way that appropriate cleaning and/or disinfection is possible, and that contamination is avoided or reduced to a minimum between and during work processes. Sufficient work surfaces must be available to enable hygienically flawless work processes.

The following requirements must be fulfilled:

- Floor coverings are to be kept in perfect condition and must be easy to clean and if necessary to disinfect. They must be waterproof, water-repellent and abrasion proof and made of non-toxic materials. Where necessary, floors must have a suitable drainage system.
- Wall surfaces are to be kept in perfect condition and must be easy to clean and if necessary to disinfect. They must be waterproof, water-repellent and abrasion proof and made of non-toxic materials as well as have a smooth surface until a respective work process appropriate height.
- Ceilings (or where there are no ceilings, roof interiors) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, mould and the flaking of particles from materials are reduced to a minimum.

- Windows and other openings must be built in such a way that the accumulation of dirt is avoided. If they can be opened to the outside, they must be fitted with insect screens which must be easy to remove for cleaning purposes. If open windows may be a source of possible contamination, they must remain closed during the production process.
- Doors must be easy to clean and, where necessary, to disinfect. They must therefore have smooth, water-repellent surfaces.
- Surfaces in the preparation area (including equipment surfaces) must be kept in a flawless condition and must be easy to clean and disinfect if necessary. Accordingly, they must therefore be made of smooth, abrasion-proof, corrosion-proof and non-toxic material.

Work rooms, systems and equipment must be kept in an appropriate condition and must be maintained in accordance with written instructions. Maintenance work must be carried out in a hygienic and controlled manner and must not jeopardise the safety of food. All material that is used for maintenance and repair work must be suitable for the purpose.

The maintenance program must always contain the following elements:

- Transport systems (where present)
- Responsible employees (own employees or outside contractors)
- Frequency

It must be proven, based on records of maintenance activities, that the above requirements are met.

Documentation of maintenance

3.2.2 Room, Equipment and Plant Hygiene

All rooms, systems and machines must be in a clean and hygienic condition. The accumulation of water in unused spaces must be avoided and there may be no large corrosion areas on systems and machines. The transport containers and vehicles must be kept hygienically clean. Areas for storing pallets and barrels must be cleaned on a regular basis. Work tools (knives etc.) are to be kept functional and hygienically flawless. There must be a cleaning and disinfection plan for the systems. Cleaning of work tools must take place in a separate location or at a different time from preparation and packaging operations.

Cleaning and disinfection plans

3.2.3 Ground Clearance

Products may not have any direct contact with the ground. Containers for storing products must not be placed directly on the ground. They must always be stored on pallets or mobile base with wheels. A storage in pallet boxes is possible as long as contaminations are avoided.

3.2.4 Order and Organisation

The preparation process must follow a structured work sequence. The allocation of positions must clearly follow from the work process and the employee concerned must be aware of possible hazards as well as control actions.

There must be clear batch formation and, if necessary, separation.

3.2.5 [K.O.] Compliance with Temperature Stipulations

The legal temperatures and any temperatures defined in specifications must be maintained during the production and transport of prepared products within the operational facility and can only be deviated from for short periods when this becomes necessary for practical reasons (e.g. when loading and unloading and during transport within the operating facility).

Temperature recorder, temperature monitoring, measuring records

3.3 Requirements for the Freezing Process

3.3.1 Technical/Structural Condition

Processing rooms in which food is handled must be clean and constantly maintained as stipulated in **Regulation (EC) No. 852/2004 Annex II**. They must be laid out, designed, constructed and dimensioned in such a way that appropriate cleaning and/or disinfection is possible, and that contamination is avoided or reduced to a minimum between and during work processes. Sufficient work surfaces must be available to enable hygienically flawless work processes.

The following requirements have to be fulfilled:

- Floor coverings are to be kept in perfect condition and must be easy to clean and if necessary to disinfect. They must be waterproof, water-repellent and abrasion proof and made of non-toxic materials. Where necessary, floors must have a suitable drainage system.
- Wall surfaces are to be kept in perfect condition and must be easy to clean and if necessary to disinfect. They must be waterproof, water-repellent and abrasion proof and made of non-toxic materials as well as have a smooth surface until a respective work process appropriate height.
- Ceilings (or where there are no ceilings, roof interiors) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, mould and the flaking of particles from materials are reduced to a minimum.
- Windows and other openings must be built in such a way that the accumulation of dirt is avoided. If they can be opened to the outside, they must be fitted with insect screens which must be easy to remove for cleaning purposes. If open windows may be a source of possible contamination, they must remain closed during the production process.
- Doors must be easy to clean and, where necessary, to disinfect. They must therefore have smooth, water-repellent surfaces.
- Surfaces in the processing area (including equipment surfaces) must be kept in a flawless condition and must be easy to clean and disinfect if necessary. They must therefore be made of smooth, abrasion-proof, corrosion-proof and non-toxic material.

Work rooms, systems and equipment must be kept in an appropriate condition and must be maintained in accordance with written instructions. Maintenance work must be carried out in a hygienic and controlled manner and must not jeopardise the safety of food. All material that is used for maintenance and repair work must be suitable for the purpose.

The maintenance plan must contain the following elements in all instances:

- Transport systems (where present)
- Responsible employees (own employees or outside contractors)
- Frequency

It must be proven, based on records of maintenance activities, that the above requirements are met.

Documentation of maintenance

3.3.2 Room, Equipment and Plant Hygiene

All rooms, systems and machines must be in a clean and hygienic condition. The accumulation of water in unused spaces must be avoided and there may be no large corrosion areas on systems and machines. The transport containers and vehicles must be kept hygienically clean. Areas for storing pallets and barrels must be cleaned on a regular basis. Work tools are to be kept functional and hygienically flawless. There must be a cleaning and disinfection plan for the systems. Cleaning of work tools must take place in a separate location or at a different time from processing and packaging operations.

Cleaning and disinfection plans

3.3.3 Ground Clearance

Products may not have any direct contact with the ground. Containers for storing products must not be placed directly on the ground. They must always be stored on pallets or mobile base with wheels. A storage in pallet boxes is possible as long as contaminations are avoided.

3.3.4 Order and Organisation

The freezing process must follow a structured work sequence. The allocation of positions must clearly follow from the work process and the employee concerned must be aware of possible hazards as well as control actions.

There must be clear batch formation and, if necessary, separation.

3.3.5 [K.O.] Registration of Temperature

Product-specific freezing programs must be in place and must be complied with. The freezing programs regulate the core temperature as well as the duration of the freezing process. Temperature and time management must be defined and documented. The responsible employees must monitor the temperature/time specifications on a regular basis, take action in the event of deviations, and perform the defined correction actions.

Documentation of temperature/time management

3.4 Requirements for the Heating Process

If a heating process occurs within the canning process, the requirements of chapter 3.5 Requirements for the canning production have to be met.

3.4.1 Technical/Structural Condition

Processing rooms in which food is handled must be clean and constantly maintained as stipulated in **Regulation (EC) No. 852/2004 Annex II**. They must be laid out, designed, constructed and dimensioned in such a way that appropriate cleaning and/or disinfection is possible, and that contamination is avoided or reduced to a minimum between and during work processes. Sufficient work surfaces must be available to enable hygienically flawless work processes.

The following requirements have to be fulfilled:

- Floor coverings are to be kept in perfect condition and must be easy to clean and if necessary to disinfect. They must be waterproof, water-repellent and abrasion proof and made of non-toxic materials. Where necessary, floors must have a suitable drainage system.
- Wall surfaces are to be kept in perfect condition and must be easy to clean and if necessary to disinfect. They must be waterproof, water-repellent and abrasion proof and made of non-toxic materials as well as have a smooth surface until a respective work process appropriate height.
- Ceilings (or where there are no ceilings, roof interiors) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, mould and the flaking of particles from materials are reduced to a minimum.
- Windows and other openings must be built in such a way that the accumulation of dirt is avoided. If they can be opened to the outside, they must be fitted with insect screens which must be easy to remove for cleaning purposes. If open windows may be a source of possible contamination, they must remain closed during the production process.
- Doors must be easy to clean and, where necessary, to disinfect. They must therefore have smooth, water-repellent surfaces.
- Surfaces in the processing area (including equipment surfaces) must be kept in a flawless condition and must be easy to clean and disinfect if necessary. They must therefore be made of smooth, abrasion-proof, corrosion-proof and non-toxic material.

Work rooms, systems and equipment must be kept in an appropriate condition and must be maintained in accordance with written instructions. Maintenance work must be carried out in a hygienic and controlled manner and must not jeopardise the safety of food. All material that is used for maintenance and repair work must be suitable for the purpose.

The maintenance program must always contain the following elements:

- Transport systems (where present)
- Responsible employees (own employees or outside contractors)
- Frequency

It must be proven, based on records of maintenance activities, that the above requirements are met.

Documentation of maintenance

3.4.2 Room, Equipment and Plant Hygiene

All rooms, systems and machines must be in a clean and hygienic condition. The accumulation of water in unused spaces must be avoided and there may be no large corrosion areas on systems and machines. The transport containers and vehicles must be kept hygienically clean. Areas for storing pallets and barrels must be cleaned on a regular basis. Work tools are to be kept functional and hygienically flawless. There must be a cleaning and disinfection plan for the systems. Cleaning of work tools must take place in a separate location or at a different time from processing and packaging operations.

Cleaning and disinfection plans

3.4.3 Ground Clearance

Products may not have any direct contact with the ground. Containers for storing products must not be placed directly on the ground. They must always be stored on pallets or mobile base with wheels. A storage in pallet boxes is possible as long as contaminations are avoided.

3.4.4 Order and Organisation

The heating process must follow a structured work sequence. The allocation of positions must clearly follow from the work process and the employee concerned must be aware of possible hazards as well as control actions.

There must be clear batch formation and, if necessary, separation.

3.4.5 [K.O.] Registration of Heating and Cooking Temperature

Product-specific heating programs must be in place and must be complied with. The heating programs regulate the core temperature as well as the duration of the heating process. Temperature and time management must be defined and documented. The responsible employees must monitor the temperature/time specifications on a regular basis, take action in the event of deviations, and perform the defined corrective actions.

Documentation of temperature/time management

3.5 Requirements for Canning Production

3.5.1 Technical/Structural Condition

Processing rooms in which food is handled must be clean and constantly maintained as stipulated in **Regulation (EC) No. 852/2004 Annex II**. They must be laid out, designed, constructed and dimensioned in such a way that appropriate cleaning and/or disinfection is possible, and that contamination is avoided or reduced to a minimum between and during work processes. Sufficient work surfaces must be available to enable hygienically flawless work processes.

The following requirements have to be fulfilled:

- Floor coverings are to be kept in perfect condition and must be easy to clean and if necessary to disinfect. They must be waterproof, water-repellent and abrasion proof and made of non-toxic materials. Where necessary, floors must have a suitable drainage system.
- Wall surfaces are to be kept in perfect condition and must be easy to clean and if necessary to disinfect. They must be waterproof, water-repellent and abrasion proof and made of non-toxic materials as well as have a smooth surface until a respective work process appropriate height.
- Ceilings (or where there are no ceilings, roof interiors) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, mould and the flaking of particles from materials are reduced to a minimum.
- Windows and other openings must be built in such a way that the accumulation of dirt is avoided. If they can be opened to the outside, they must be fitted with insect screens which must be easy to remove for cleaning purposes. If open windows may be a source of possible contamination, they must remain closed during the production process.
- Doors must be easy to clean and, where necessary, to disinfect. They must therefore have smooth, water-repellent surfaces.
- Surfaces in the processing area (including equipment surfaces) must be kept in a flawless condition and must be easy to clean and disinfect if necessary. They must therefore be made of smooth, abrasion-proof, corrosion-proof and non-toxic material.

Work rooms, systems and equipment must be kept in an appropriate condition and must be maintained in accordance with written instructions. Maintenance work must be carried out in a hygienic and controlled manner and must not jeopardise the safety of food. All material that is used for maintenance and repair work must be suitable for the purpose.

The maintenance program must always contain the following elements:

- Transport systems (where present)
- Responsible employees (own employees or outside contractors)
- Frequency

It must be proven, based on records of maintenance activities, that the above requirements are met.

Documentation of maintenance

3.5.2 Room, Equipment and Plant Hygiene

All rooms, systems and machines must be in a clean and hygienic condition. The accumulation of water in unused spaces must be avoided and there may be no large corrosion areas on systems and machines. The transport containers and vehicles must be kept hygienically clean. Areas for storing pallets and barrels must be cleaned on a regular basis. Work tools are to be kept functional and hygienically flawless. There must be a cleaning and disinfection plan for the systems. Cleaning of work tools must take place in a separate location or at a different time from processing and packaging operations.

Cleaning and disinfection plans

3.5.3 Ground Clearance

Products may not have any direct contact with the ground. Containers for storing products must not be placed directly on the ground. They must always be stored on pallets or mobile base with wheels. A storage in pallet boxes is possible as long as contaminations are avoided.

3.5.4 Order and Organisation

The canning production must follow a structured work sequence. The allocation of positions must clearly follow from the work process and the employee concerned must be aware of possible hazards as well as control actions.

There must be clear batch formation and, if necessary, separation

3.5.5 [K.O.] Food Preservation

The shelf life, microbiological stability and safety of the products must either be based on heat treatment in the packaging alone, or - if necessary - a combination of heat treatment in the packaging and other process parameters (e.g. pH-value or aw-value).

For pasteurisation/sterilisation the product-specific F- (or P-) and D-values determined within the operation are to be observed.

Specific heating and cooling programs must exist and be adhered to for the respective product groups. The stipulated temperature / time management is to be observed in every pasteurization/sterilization procedure and also documented. The responsible employees must regularly check the temperature / time parameters and intervene in case of deviations and perform the specified corrective measures.

If preservation is based on a combination of heat treatment and other process parameters, the relevant parameters must also be complied with and documented.

At the end of the manufacturing process, a random leakage check of the tinned products must be carried out.

Documentation of temperature/time management

3.5.6 Requirements for Containers (Tins)

Clean and undamaged containers must be used when filling. The containers must be free of foreign bodies. They must also be suitable for the intended use.

3.6 Requirements for Sprout Production

3.6.1 Technical/Structural Condition

Processing rooms in which food is handled must be clean and constantly maintained as stipulated in **REG (EC) No. 852/2004 Annex II**. They must be laid out, designed, constructed and dimensioned in such a way that appropriate cleaning and/or disinfection is possible, and that contamination is avoided or reduced to a minimum between and during work processes. Sufficient work surfaces must be available to enable hygienically flawless work processes.

The following requirements must be additionally fulfilled:

- Floor coverings are to be kept in perfect condition and must be easy to clean and if necessary to disinfect. They must be waterproof, water-repellent and abrasion proof and made of non-toxic materials. Where necessary, floors must have a suitable drainage system.
- Wall surfaces are to be kept in perfect condition and must be easy to clean and if necessary to disinfect. They must be waterproof, water-repellent and abrasion proof and made of non-toxic materials as well as have a smooth surface until a respective work process appropriate height.
- Ceilings (or where there are no ceilings, roof interiors) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, mould and the flaking of particles from materials are reduced to a minimum.
- Windows and other openings must be built in such a way that the accumulation of dirt is avoided. If they open to the outside, they must be fitted with insect screens which must be easy to remove for cleaning purposes. If open windows may be a source of possible contamination, they must remain closed during the production process.

- Doors must be easy to clean and, where necessary, to disinfect. They must therefore have smooth, water-repellent surfaces.
- Surfaces in the preparation area (including equipment surfaces) must be kept in a flawless condition and must be easy to clean and disinfect if necessary. They must therefore be made of smooth, abrasion-proof, corrosion-proof and non-toxic material.

Work rooms, systems and equipment must be kept in an appropriate condition and must be maintained in accordance with written instructions. Maintenance work must be carried out in a hygienic and controlled manner and must not jeopardise the safety of food. All material that is used for maintenance and repair work must be suitable for the purpose.

The maintenance programme must always contain the following elements:

- Transport systems (where present)
- Responsible employees (own employees or outside contractors)
- Frequency

It must be proven, based on records of maintenance activities, that the above requirements are met.

Documentation of maintenance

3.6.2 Room, Equipment and Plant Hygiene

All rooms, systems and machines must be in a clean and hygienic condition. The accumulation of water in unused spaces must be avoided and there may be no large corrosion areas on systems and machines. The transport containers and vehicles must be kept hygienically clean. Areas for storing pallets and barrels must be cleaned on a regular basis. Work tools are to be kept functional and hygienically flawless. There must be a cleaning and disinfection plan for the systems. Cleaning of work tools must take place in a separate location or at a different time from processing and packaging operations.

Cleaning and disinfection plans

3.6.3 Ground Clearance

Products may not have any direct contact with the ground. Containers for storing products must not be placed directly on the ground. They must always be stored on pallets or mobile base with wheels. A storage in pallet boxes is possible as long as contaminations are avoided.

3.6.4 Order and Organisation

The process of sprout production must follow a structured work sequence. The allocation of positions must clearly follow from the work process and the employee concerned must be aware of possible hazards as well as control actions.

There must be clear batch formation and, if necessary, separation.

3.6.5 [K.O.] Official Approval of Companies that produce Sprouts

Regulation (EC) No. 210/2013 of 11 March 2013 on the approval of establishments producing sprouts of the European Parliament and of the Council stipulates an approval obligation in line with **Regulation (EC) No. 852/2004** for companies producing sprouts.

Scheme participants must be able to provide proof of approval (in acc. with Art. 6 of **Regulation (EC) No. 852/2004**). Approval is issued by the monitoring authority within whose scope of responsibility the company lies.

Proof of official approval

3.6.6 Quality of Cultivation Water

Seeds should be immediately washed with drinking water before germination.

For sprouts cultivated in germinators, the water used must provably meet the following microbiological parameters:

- Escherichia coli (E. coli) 0 CFU / 100 ml
- Enterococci 0 CFU / 100 ml

Testing of the microbiological parameters must be conducted annually at the extraction point.

In addition, compliance with the following chemical parameters must be ensured:

- Arsenic 0.01 mg/l
- Cadmium 0.003 mg/l
- Lead 0.01 mg/l

If the water complies with the specifications of the **German Drinking Water Ordinance** and/or the European **Directive 98/83/EC on the quality of water intended for human consumption**, the requirements listed above are considered to be met.

Proof of quality of cultivation water

3.6.7 [K.O.] Traceability

Alongside the requirements for traceability outlined in Section 5.3, the following requirements are also of relevance for sprouts:

- For sprouts and seeds for the production of sprouts, compliance with the stipulations of **Regulation (EC) No. 208/2013** Article 3 is additionally required.
- If seeds are imported into the European Union, each shipment must be accompanied by a certificate in line with Article 3 of **Regulation (EC) No. 2011/2013**. A copy of the certificate for the imported seeds for sprout production is to be forwarded to each intermediate company handling the seeds all the way through to the producer of the sprouts.

Proof of certification of seeds

3.6.8 Transport Receptables/Containers

Transport receptacles and/or containers for transporting seeds must be kept clean and maintained in line with the **Guidance document on the implementation of certain provisions of Regulation (EC) No. 852/2004** in order to protect the food against contamination. They must be designed and constructed in such a way that appropriate cleaning and/or disinfection is possible. Transport receptacles and/or containers may only be used for transporting foods.

4 Packaging and other Business Sections

4.1 Packaging/Redistribution

4.1.1 Technical/Structural Condition

Packaging and transfer rooms in which food is handled must be clean and constantly maintained as stipulated in **Regulation (EC) No. 852/2004 Annex II**. They must be laid out, designed, constructed and dimensioned in such a way that appropriate cleaning and/or disinfection is possible, and that contamination is avoided or reduced to a minimum.

The following requirements must be met for this purpose:

- Floor coverings and wall surfaces must be kept in flawless condition and must be easy to clean as well as disinfect when necessary.
- Ceilings (or where there are no ceilings, roof interiors) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, mould and the flaking of particles from materials are reduced to a minimum.
- Windows and other openings must be built in such a way that the accumulation of dirt is avoided. If they can be opened to the outside, they must be fitted with insect screens which must be easy to remove for cleaning purposes.
- Doors must be easy to clean and, where necessary, to disinfect. They must therefore have smooth, water-repellent surfaces.
- Surfaces (including equipment surfaces) that come into contact with food must be kept in a flawless condition and must be easy to clean and disinfect if necessary. Accordingly, they must therefore be made of smooth, abrasion-proof, corrosion-proof and non-toxic material.

Work rooms and systems must be kept in an appropriate condition and must be maintained in accordance with written instructions. Maintenance work must be carried out in a hygienic and controlled manner and must not jeopardise the safety of food. All material that is used for maintenance and repair work must be suitable for the purpose.

The maintenance programme must comprise at least the following elements:

- Transport systems (where present)
- Responsible employees (own employees or outside contractors)
- Frequency

It must be proven, based on records of maintenance activities, that the above requirements are met.

Documentation of maintenance

4.1.2 Room, Equipment and Plant Hygiene

All rooms, systems and machines must be in a clean and hygienic condition. The accumulation of water in unused spaces must be avoided and there may be no large corrosion areas on systems and machines. The transport containers and vehicles must be kept hygienically clean. Areas for storing pallets and barrels must be cleaned on a regular basis.

Storage, processing and work rooms must be cleaned regularly in line with a cleaning plan; this applies especially to the floor covering. The frequency of cleaning is to be based on the work rhythm/restocking in the work/storage areas.

Cleaning plans, disinfection plans, hygiene checklist, implementation review results

4.1.3 Packaging Material

Only packaging material from which the outer packaging has been removed is to be used. Damage to the packaging material must be avoided (⇒ 2.4.6 risk of contamination).

Reusable packaging (crates, boxes, etc.) must undergo mechanical cleaning after every circulation prior to renewed use. Other suitable processes (e.g. high-pressure cleaners) may also be used to clean large reusable packages (> 60 x 90 cm).

4.1.4 [K.O.] Declaration of Conformity/Declaration of no Objection

Packaging material and packaging aids must be suitable for the purpose for which they are intended and must comply with current legal regulations.

Certificates of conformity for the packaging material used have to be present in the company where the packaging takes place. If the packaging material is purchased by another company (e.g. an agency) the respective certificates must be present there as well.

The packaging material which comes into direct contact with food must present no health risks and be hygienically flawless. The validity of the declaration of conformity must be ensured. A declaration of no objection must be available for all packaging materials used for which no declaration of conformity is required in line with **Regulation (EU) No. 10/2011 on plastic materials and articles intended to come into contact with food**.

Declaration of Conformity/declaration of no objection packaging material

4.1.5 Ground Clearance

Products may not have any direct contact with the ground. Containers for storing products must not be placed directly on the ground. They must always be stored on pallets or mobile base with wheels.

4.1.6 Storage of Packaged Goods

To maintain quality, the following points need to be observed when storing packaged goods prepared for transportation:

- Adequate hygiene conditions
- Protection against physical and chemical risks (adequate temperature, no permanent exposure to light etc.).

4.1.7 Storage/Transport Containers for Products

In-house storage facilities/transport containers for the goods may only be used for the storage and transport of these goods. The containers must be suitable for the intended purpose, safe from the point of view of health, clean and hygienically flawless, and they must ensure that contamination is prevented.

4.2 Other Business Sections and Areas

4.2.1 Packaging Material Storage

Packaging material is to be stored in a separate area and not together with other goods. The room must be clean and tidy and must be cleaned in line with the cleaning and disinfection plan. The risk of contamination is to be taken into account when storing packaging materials and any packaging aids.

4.2.2 Storage of Cleaning Agents and Disinfectants

The rooms or systems in which cleaning and disinfection agents and cleaning equipment are stored must be kept clean and tidy. They must enable the hygienic storage of the tools/equipment and their clear separation where necessary for clean/unclean areas. Equipment must be maintained and serviced regularly. There must be a procedure for cleaning the rooms and equipment and disinfecting them when necessary, and personnel must be aware of such a procedure.

Up to date safety data sheets and instructions for use must be on hand for cleaning and disinfection agents. The responsible personnel must be aware of the instructions, which should be kept on-site. Cleaning equipment and chemicals must be clearly marked and labelled and stored separately from foods as well as in line with the specific requirements.

Safety data sheets, instructions for use

4.2.3 Waste Disposal Logistics

Food waste and other waste:

- Must be removed from areas in which food is handled as quickly as possible, in order to avoid an accumulation of this waste
- Must be stored in closable containers. These containers must be suitable for the purpose for which they are intended, must be maintained in a flawless condition, and must be easy to clean and, if necessary, easy to disinfect. If there is a risk of mixing up between the waste and food containers, or another necessity, the containers shall be labelled.

Suitable arrangements must be made for the storage and disposal of food waste and other waste. Rooms in which waste is stored must be designed and managed in such a way that they can be kept clean and free from animals (dogs, cats, birds) and pests.

Waste must be stored in an area protected against unauthorised interference. It must be disposed of in a hygienically flawless and environment-friendly manner and must have no impact on food.

Wastewater systems must be designed in such a way that the possibility of an impact on products is ruled out.

In order to avoid unnecessary waste and to ensure efficient use of company resources, the company must have in place a waste management/recycling system. Waste must be separated (e.g. dual system or similar). This recycling management process must be documented and proof of the following must be available at all times:

- Occurring waste
- Disposal method
- Whereabouts of the waste

Proof of waste management/recycling system

5 Incoming and Outgoing Goods, Labelling, Use of the Certification Mark, Traceability and Transport

5.1 Incoming Goods

5.1.1 Technical/Structural Condition

Work areas and rooms in which food is handled must be clean and constantly maintained as stipulated in **Regulation (EC) No. 852/2004 Annex II**. They must be laid out, designed, constructed and dimensioned in such a way that appropriate cleaning and/or disinfection is possible, and that contamination is avoided or reduced to a minimum. The following requirements must be met for this purpose:

- Floor coverings and wall surfaces must be kept in flawless condition and must be easy to clean as well as disinfect when necessary.
- Ceilings (or where there are no ceilings, roof interiors) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, mould and the flaking of particles from materials are reduced to a minimum.
- Windows and other openings must be built in such a way that the accumulation of dirt is avoided. If they can be opened to the outside, they must be fitted with insect screens which must be easy to remove for cleaning purposes.
- Doors must be easy to clean and, where necessary, to disinfect. They must therefore have smooth, water-repellent surfaces.
- Surfaces (including surfaces of equipment) that come into contact with food must be kept in very good condition and must be easy to clean as well as disinfect when necessary. They must be made of a smooth, abrasion-proof, corrosion-proof, non-toxic material.

Work rooms and systems must be kept in an appropriate condition and must be maintained in accordance with written instructions. Maintenance work must be carried out in a hygienic and controlled manner and must not jeopardise the safety of food. All material that is used for maintenance and repair work must be suitable for the purpose.

The maintenance program must comprise at least the following items:

- Transport systems (where present)
- Responsible employees (own employees or outside contractors)
- Frequency

Proof must be provided based on records of maintenance activities that the above requirements are met.

The incoming goods area must be designed in such a way as to allow for access restrictions and restrictions on external persons or visitors entering the company. A separate entrance must be made available to staff.

Documentation of maintenance

5.1.2 Room, Equipment and Plant Hygiene

All rooms, systems and machines must be in a clean and hygienic condition. The accumulation of water in unused spaces must be avoided and there may be no large corrosion areas on systems and machines. The transport containers and vehicles must be kept hygienically clean. Areas for storing pallets and barrels must be cleaned on a regular basis.

Storage, preparation and work rooms must be cleaned regularly in line with the cleaning plan; this applies especially to the floor covering. The frequency of cleaning is to be based on the work rhythm/restocking in the work rooms/storage rooms.

Cleaning plans, disinfection plans, hygiene checklist, implementation review results

5.1.3 Ground Clearance

Products must not come into direct contact with the floor/ground. Containers for storing products must not be placed directly on the ground. They must always be stored on pallets or mobile base with wheels.

Primary products may be stored directly on the ground or on the appropriate devices if the floors or material on which they are stored is in a clean and flawlessly hygienic condition.

5.1.4 Order and Organisation

The receiving department must follow a structured work sequence. The allocation of positions must clearly follow from the work process, and possible hazards to food safety must be avoided. Pathways for goods must be such that there is no possibility of cross-contamination. Goods that need to be cooled must be taken to the cold stores without delay (if the goods are not prepared/processed directly) or necessary measures must be taken to ensure compliance with the cold chain.

5.1.5 Transport Vehicle Delivery

Delivery vehicles must be kept in a hygienic and tidy condition and show no signs of residual dirt. The driver and anybody accompanying the driver must be wearing appropriately clean clothing. Goods must not be negatively affected by clothing or handling.

The transported goods must be loaded in a flawlessly hygienic condition and show no signs of coarse dirt. The temperature of goods must be in accordance with the legal requirements or product specifications and must be documented.

Temperature checklists

5.1.6 Incoming Goods Inspection

Incoming goods inspections must follow a regulated sequence and be conducted on the basis of internal specifications. The checks performed on incoming goods must be documented and must cover all relevant products. Where necessary, incoming goods inspection has to be adapted to altered production, storage or transport conditions.

Incoming goods inspection

5.1.7 [K.O.] Labelling of purchased QS Goods

All QS goods must be clearly marked as QS goods. This applies to any accompanying documentation (usually delivery notes or EDI shipping notifications) so that QS goods can clearly be matched with the corresponding delivery notes and other accompanying documentation at all times.

All accompanying documentation must be marked, regardless of whether or not a product has been awarded a QS certification mark (⇒ 2.1.2. Use of the QS certification mark). QS goods must always be marked as QS goods on the accompanying documentation (e.g. apples (QS) or QS apples). This also applies to goods that have been delivered to the QS scheme under QS-recognised standards (e.g. Vegaplan, GLOBALG.A.P.).

For labelling of QS goods customers and suppliers can alternatively agree upon general regulations or use synonyms which replace the designation „QS" (e.g. the designation „Origin Germany" replaces the designation „Apple (QS)" on the delivery notes). The procedure must be documented in the quality management manual or in a work instruction, must be known by the respective staff members and the supplier/recipient of the goods and must be comprehensible in the audit.

The procedure for labelling QS goods must be laid out and known by all responsible employees who work the products, even if no QS goods are traded.

Proof QS goods (e.g. delivery notes etc.)

5.1.8 [K.O.] Product Temperature

The legally stipulated temperatures must be maintained and can only be deviated from for short periods when this becomes necessary for practical reasons (e.g. when loading and unloading and during transport within the operating facility). Product-specific regulated temperature ranges must be maintained. If lower temperatures are set by the company (internal guidelines) and agreed with the supplier (e.g. in specifications), the products must be kept at these temperatures and this must be taken into consideration at incoming goods.

The temperatures are to be monitored and documented.

Temperature records, incoming goods checklist

5.1.9 Quality Requirements

Goods must be visually inspected for defects by taking random samples. Delivered goods must also be checked for pest infestation and if necessary, appropriate measures must be introduced. The results of this goods inspection must be documented.

Checklist for incoming goods/visual rating, results report

5.1.10 Hygiene Requirements

The condition of goods must be examined for damage to products and perceptible negative influences. Rejected goods must be separated or, if necessary, rejected. (Sample testing for spoilage or deterioration caused by decay or mould growth, dirt and foreign matters, strong smelling contaminants, disease or pest infestation).

Checklist for incoming goods

5.1.11 Product Labelling

Compliance must be checked with the European and national regulations and laws on the marking and labelling for both fresh and prepared/processed fruit and vegetables.

This applies to:

- Packing units (cartons, reusable crates)
- Sales packaging
- Shipping documents/delivery notes/labels

Further applicable documents are **Prepackaging Regulation (FertigPackV), Food Information Regulation (LMIV), Batch Marking and Labelling Regulation (LKV), Price Indication Regulation (PAngV), Additive Approval Regulation (ZZulV)**.

5.1.12 Labelling of QS goods with an identification number

QS goods must be labelled with the OGK-number or another in the QS-database deposited identification number of the producer (e.g. GLOBALG.A.P.-Number (GGN) or Global Location Number (GLN)) in the delivery notes / accompanying documents or on the label of the goods (or box label).

In the case of batches which may contain goods from several producers due to mixing as a result of bulk goods storage or technical packaging or treatment processes (e.g. sorting system) and in the case of packed goods which contain goods from several producers, the QS-ID, the GH-number or another in the QS-database deposited identification number (e.g. the GLN, GGN) of the packing location can be used alternatively.

5.2 Outgoing Goods and Returns Management

5.2.1 Technical/Structural Condition

Order picking and good dispatch rooms in which food is handled must be clean and constantly maintained as stipulated in **Regulation (EC) No. 852/2004 Annex II**. They must be laid out, designed, constructed and dimensioned in such a way that appropriate cleaning and/or disinfection is possible, and that contamination is avoided or reduced to a minimum.

The following requirements must be met for this purpose:

- Floor coverings and wall surfaces must be kept in flawless condition and must be easy to clean as well as disinfect when necessary.
- Ceilings (or where there are no ceilings, roof interiors) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, mould and the flaking of particles from materials are reduced to a minimum.
- Windows and other openings must be built in such a way that the accumulation of dirt is avoided. If they can be opened to the outside, they must be fitted with insect screens which must be easy to remove for cleaning purposes.

- Doors must be easy to clean and, where necessary, to disinfect. They must therefore have smooth, water-repellent surfaces.
- Surfaces (including equipment surfaces) that come into contact with food must be kept in a flawless condition and must be easy to clean and disinfect if necessary. Accordingly, they must therefore be made of smooth, abrasion-proof, corrosion-proof and non-toxic material.

Work rooms and systems must be kept in an appropriate condition and must be maintained in accordance with written instructions. Maintenance work must be carried out in a hygienic and controlled manner and must not jeopardise the safety of food. All material that is used for maintenance and repair work must be suitable for the purpose.

The maintenance programme must always include the following elements:

- Transport systems (where present)
- Responsible employees (own employees or outside contractors)
- Frequency

It must be proven based on records of maintenance activities that the above requirements are met.

Documentation of maintenance

5.2.2 Room, Equipment and Plant Hygiene

All rooms, systems and machines must be in a clean and hygienic condition. The accumulation of water in unused spaces must be avoided and there may be no large corrosion areas on systems and machines. The transport containers and vehicles must be kept hygienically clean. Areas for storing pallets and barrels must be cleaned on a regular basis.

Storage, treatment and work rooms must be cleaned regularly in line with a cleaning plan; this applies especially to the floor covering. The frequency of cleaning is to be based on the work rhythm/restocking in the work/storage rooms.

Cleaning plans, disinfection plans, hygiene checklist, implementation review results

5.2.3 Ground Clearance

Products may not have any direct contact with the ground. Containers for storing products must not be placed directly on the ground. They must always be stored on pallets or mobile base with wheels.

5.2.4 [K.O.] Outgoing Goods Inspection

A structured and logical process must be in place in the company for the inspection of outgoing goods. Procedures for dealing with nonconformities must be laid down. The relevant employees must be trained in the procedure for dealing with nonconforming products. Prior to loading, the accompanying documents must be checked and compared with the shipment (goods and packaging), and correct product labelling must be monitored. Specifications must be adhered to.

It must be ensured that QS goods are clearly identifiable and that there is no risk of mix-ups.

Checklist for outgoing goods/delivery notes

5.2.5 [K.O.] Labelling of marketed QS Goods

Goods can only be marketed as QS goods if a corresponding eligibility of delivery exists for the own location in the QS database.

Goods that are marketed as QS goods must be clearly marked on the accompanying documentation at the goods dispatch stage (usually delivery notes or EDI shipping notifications). It must be possible to match QS goods matched with the corresponding delivery notes and other accompanying documentation at all times.

The obligation to label accompanying documents applies regardless of the question of whether the QS certification mark is awarded to the product (⇒ 2.1.2. Use of the QS certification mark). The registration procedures must be comprehensible and feasible with regard to the internal flow of goods. The procedure for labelling QS goods must be laid out and known by all responsible employees who work the products, even if no QS goods are traded.

For the purpose of labelling of QS goods, blanket provisions can alternatively be agreed between customer and supplier or synonyms can be used that replace the designation "QS". If a product does not only consist of QS ingredients, the delivery note must clearly show which components are QS goods. This can also be implemented by reference to the product specification. The procedure must be documented in the Quality Management Manual or in a work instruction, must be known to the responsible employees and the supplier/recipient of the goods, and must be logically traceable in the audit.

Goods may only be marketed as QS goods, if the corresponding processes are listed in the guideline.

Incoming and outgoing goods documents

5.2.6 [K.O.] Final Product Inspection

For the purpose of final product inspection, checking procedures must be defined that ensure flawless delivery of the products in question.

In the case of unpackaged goods, this includes:

- Where applicable temperature monitoring
- Damage/Soiling
- Correct labelling

Additional procedures for packaged goods:

- Where applicable seal tightness check
- Where applicable monitoring of filling weight
- Where applicable inert gas concentration
- Where applicable best-before date/use-by date/storage notes

These checks must be performed and documented on a regular basis and must meet the legal requirements. In the case of monitoring of filling weight, quantity and contents (taking account of tolerances) must correspond to the details on the packaging or in the specification.

Documentation of final product inspection

5.2.7 Complaints Management

A system for managing product claims and product complaints must be in place. All claims/complaints must be assessed and where necessary appropriate measures taken.

- Claims = made by authorities
- Complaints = made by customers and end consumers

5.2.8 Returns Management

A system to process returns must be implemented. All goods returns must be recorded and evaluated. The internal guidelines that are relevant for the further use of the returned goods must be adhered to. Measures must be implemented to prevent the reoccurrence of nonconformities. The separation of QS goods and non-QS goods must be observed.

5.2.9 Order and Organisation

In the area of order picking and shipping of purchased goods, clear procedures and processes must be defined which take at least the following points into consideration, and ensure adherence to these points:

- Temperature
- Labelling (labels, packing slips, QS test mark)
- Best-before date/expiry date/storage instruction
- Damage/Impurities

5.2.10 Product Labelling

Every package must contain the following information, depending on legal requirements, in legible, indelible letters and numbers visible from the outside:

- Type of product
- Quantity/filling weight
- Where applicable lot/batch number
- Where applicable treatment information (post-harvest treatment/sprout inhibition)
- Where applicable distributor/packer
- Where applicable sales designation
- Where applicable special storage information (temperature)
- Where applicable best-before/use-by date
- Where applicable information on allergenic substances

The following standards and regulations must be taken into consideration: **German Weights and Measures Act (Eichgesetz), Prepackaging Regulation (FertigPackV), Food Information Regulation (LMIV), Batch Marking and Labelling Regulation (LKV), Price Indication Regulation (PAngV), Additive Approval Regulation (ZZulV)**.

All self-placed information indicated on the label must be correct (for example QS-ID, GLOBALG.A.P. number).

5.2.11 Labelling of QS goods with an identification number

QS goods must be labelled with the OGK-number or another in the QS-database deposited identification number of the producer (e.g. GLOBALG.A.P.-Number (GGN) or Global Location Number (GLN)) in the delivery notes / accompanying documents or on the label of the goods (or box label).

In the case of batches which may contain goods from several producers due to mixing as a result of bulk goods storage or technical packaging or treatment processes (e.g. sorting system) and in the case of packed goods which contain goods from several producers, the QS-ID, the GH-number or another in the QS-database deposited identification number (e.g. the GLN, GGN) of the packing location can be used alternatively.

5.2.12 [K.O.] Product Temperature

The legally stipulated temperatures must be maintained and can only be deviated from for short periods when this becomes necessary for practical reasons (e.g. when loading and unloading and during transport within the operating facility). Product-specific regulated temperature ranges must be maintained. If lower temperatures are set by the company (internal guidelines) and agreed with the supplier (e.g. in specifications), the products must be kept at these temperatures.

The temperatures are to be monitored and documented.

Temperature records, outgoing goods checklist

5.2.13 [K.O.] Temperature Recording and Monitoring

Temperature specifications must be in place for all products subject to mandatory cooling requirements. Compliance with the cold chain must be monitored in the areas controlled by the company, and the temperatures must be documented. Measures to be taken in the event of temperatures above the permitted levels must be defined and known to the responsible employees.

Self-assessment records, checklists, documentation of temperature, documentation on measures in the event of nonconformities

5.3 Traceability and Origin

5.3.1 [K.O.] Methods of Traceability

Evidence of the transparency of the flow of goods must be produced. Scheme participants must establish traceability systems and processes in accordance with **Regulation (EC) No. 178/2002**. Produced batch sizes must be defined for each supplier to secure traceability. Traceability should be ensured for at least the production of one day or one shift.

Each scheduled and incoming goods shipment must be given a lot number/ID. The relevant lot number must be noted on the corresponding accompanying documents (e.g. dispatch notification/fax of supplier, stock record, quality records, delivery note/packing slip, invoice to the customer, bill for the supplier), and must remain with the goods from receipt until dispatch/delivery from the company to the customer. Existing labelling systems may also be used, as long as identity/similarity of the goods is assured. All necessary data for the identification/class division/sorting/treatment and traceability are to be documented under the lot number. A labelling and registration system must be used which can be understood by third parties. This labelling and registration system must ensure the clear identification of goods and the traceability and plausibility of the flow of goods as well as of the packaging material at all times.

It must be ensured that the information on traceability is available to QS within 24 hours after contact has been made with the scheme participant.

Internal traceability processes should be structured in such a way that the corresponding information can be compiled within four hours.

The following information concerning customers, suppliers and deliveries is relevant:

- Name, address and telephone number
- QS-ID and location number (if these identification numbers have been assigned within the context of the QS scheme)
- Type and quantity of delivered products
- Delivery date
- Lot or batch no. (if assigned in the production process)
- In the case of bulk goods, the batch/lot number on the outer packaging

Supplier list

It must be possible to trace which products/packaging materials were procured from which supplier. A list of all suppliers must be available.

Customer list

It must be possible to trace which products were delivered to which customers. A list of all customers must be available.

Batch labelling, receipts for incoming goods (e.g. delivery notes, incoming goods inspection) and documents for outgoing goods, traceability system, supplier list, customer list

5.3.2 [K.O.] Traceability Check

The traceability of all goods must be checked using a sample from production or outgoing goods in accordance with **Regulation (EC) No. 178/2002**. This also applies to packaging in accordance with **Regulation (EU) No.1935/2004 (on materials and articles intended to come into contact with food)**.

The system must be tested at least once a year.

5.3.3 [K.O.] Reconciliation of Incoming Goods with Outgoing Goods

In consideration of losses through production processes, there must be a plausible relationship between the quantity of purchased goods and the quantity of produced (stored and marketed) goods.

5.3.4 [K.O.] Check of the QS-eligibility of Delivery

All companies that deliver QS goods must be clearly identified in the QS database as QS scheme participants with eligibility of delivery at the time the goods are handed over. This also applies for agencies as well as for companies, which handle or store products and do not become the owner of the goods. Additionally, delivering growers must be eligible to deliver for the corresponding production scope and where appropriate for the crop.

If goods are labelled with the QS certification mark on the label or the packaging, the recipient/reseller of the goods must be identified in the QS database as scheme participant with eligibility of delivery.

5.3.5 [K.O.] Separation and Identification of QS Goods and Non-QS Goods

A logical system for separating QS goods from non-QS goods must be present in the company. Clear labelling and batch separation of QS goods and non-QS goods must be ensured. If no QS goods are yet present in the company (e.g. in the initial audit), the procedure for goods separation must be demonstrated in a suitable manner.

QS goods must be clearly identifiable in the company. It must be ensured that no product mix-ups occur.

5.4 Transport/Logistics

5.4.1 Product-compliant Transport

Transport must be in line with the product requirements. The transport of goods must be in closed, insulated vehicles or in refrigerated vehicles depending on the type of goods, the journey distance and the outside temperatures. Goods which are transported in open containers on open vehicles must be suitably covered.

Proof of product-compliant transport

5.4.2 Transport Hygiene

The delivery vehicles must be in a hygienic and orderly condition with no residual soiling or dirt. Cargo holds and loading areas of transport vehicles may only be used if they are clean and free from contamination. Prior to loading and after unloading, the loading areas are to be cleaned. In the case of open loading areas, it is sufficient to sweep them clean. The effort required for cleaning of closed transport areas is accordingly higher.

The driver and any accompanying persons must be dressed in clean clothing. Clothing and goods handling must be such that there is no negative influence on the products. The goods to be transported must be loaded in a hygienically flawless manner.

Checklist for transport vehicle

5.4.3 [K.O.] Temperature Control

In the case of vehicles of the own fleet the temperature inside the cargo holds must be set according to the goods which are to be transported. It has to be controlled and documented before the journey begins. Where appropriate, the transport vehicle's temperature recorders must be checked/series recorders read. The temperature control before the start of the journey can be dispensed if during the transportation a continuous temperature recording takes place.

In the case of goods requiring refrigeration (at law), the temperature must be maintained and continuously documented throughout transportation according to the applicable regulations and specifications.

⇒ 2.7.5/2.8.5 Temperature recording and monitoring

🗐 Temperature Records, checklist for transport vehicles

5.4.4 Commissioning of Logistics Companies (Subcontractors)

Commissioned logistics companies that conduct transport operations with QS goods between QS scheme participants on the stages wholesale and/or preparation/processing or that are commissioned for storage and if necessary for order picking must be registered in the QS database and authorised for the production scope logistics, wholesale or preparation/processing.

GMP+ certified companies that are eligible to deliver for the production scope logistics can only be commissioned for the transport of unpacked, loose potatoes and onions as bulk goods/goods in bulk packs. In addition, companies that are certified at the stage feed industry for the standard QS and that are eligible to deliver for the production scope road transport (feed) can only be commissioned for the transport of unpacked, loose potatoes and onions as bulk goods/goods in bulk packs.

The commissioning party/shipper (QS scheme participant) is responsible for the fulfilment of the requirement. He must inform the logistics company, if the delivery involves QS goods.

If logistics companies are commissioned for transport services at short notice or on a one-time basis (because of a great seasonal volume / within daily contract), deviation from this requirement is permitted. In this event, the logistics companies must be placed under the obligation to comply with the QS requirements (⇒ guideline logistics 2.3, 3, 5). Fulfilment of the requirements on the premises of the service providers (e.g. transport companies) is to be ensured on the basis of provided proof and monitored on a random basis within the context of self-assessment.

🗐 For transport services at short notice or on a one-time basis: proof of implementation of the QS requirements, checklist self-assessment

6 Further Process Requirements

6.1 Product-Specific Criteria for the Storage of Potatoes

6.1.1 Suitability of Warehouse

The systems for incoming goods must enable a product-appropriate and gentle receipt of goods from transport vehicles. The structural and technical layout of the storage facility must meet the requirements for gentle handling of potatoes.

6.1.2 Suitability of the Equipment for Incoming and Outgoing Goods

The number and length of drop heights at the handover points must be as low as possible. Furthermore, the passages for the flow of material, belt speed, rolling lines as well as protruding edges, corners and bolts and similar need to be taken into consideration in order to minimise strain on the tubers.

6.1.3 Suitability of Preparation and Packaging Systems and Cleaning

For the processing lines, an analysis of danger spots for damage to tubers and other risks to the quality and appearance of tubers has to be carried out. The processing area must be cleaned regularly.

Cleaning must be conducted in such a way that the purity of variety of the batches is ensured, and that phytosanitary contaminations/impurities and negative health effects on the employees are prevented (cleaning plan/hygiene checklist).

Cleaning plans, hazard analysis

6.2 Treatment

6.2.1 Treatment and Sorting

During treatment and sorting, the goods and, where applicable, the packaging must be continuously monitored for damage. In addition, correct product labelling must be checked. It must be ensured that QS goods are clearly identifiable and that there is no risk of mix-ups.

Water used to wash products may only contain the additives that are approved for this purpose. The use of these substances must be documented.

Potatoes

Before termination of long-term storage of potatoes, a representative sample must be taken to determine inner and outer tuber defects. The subsequent procedure for treatment and marketing depends on the determined results.

- Potatoes may only be removed from storage in the case of suitable tuber condition.
- The potatoes to be marketed must comply with the **Berlin Agreement** in its currently valid version (if this agreement is used).
- The results of the tuber rating process and the laboratory analyses are to be entered in the storage file and documented.

Rating records

6.2.2 [K.O.] Post-harvest Treatment and Sprout Suppressants

Every post-harvest treatment and every use of agents for chemical sprout suppressants must be documented and provide the following information:

- Batch number
- Application date and location
- Concentration
- Post-harvest treatment agents or sprout suppressants

In the case of post-harvest treatment or chemical sprout suppressants, only agents approved in the country of application may be used. The legal requirements of each destination country must be complied with, including labelling on all packaging and shipping units.

Record of application of post-harvest treatment agents/sprout suppressant agents

7 Residue Monitoring

7.1 Organisation and Implementation of Residue Monitoring

7.1.1 Organisation of the Residue Monitoring

The scheme participant must be familiar with the organisation of QS residue monitoring. This includes knowledge of the calculation of the required number of samples according to the control plan as well as knowledge of the obligation to enter the sample related data into the QS database in the event that fresh non-prepared/non-processed QS goods were purchased.

7.1.2 [K.O.] Implementation of the Residue Monitoring

Participation in QS-approved residue monitoring is mandatory for all scheme participants. This obligation refers to fresh non-prepared/non-processed goods. Prerequisites for the implementation of QS residue monitoring include the commissioning of a QS-recognised laboratory for residue analysis, sampling in accordance with the control plan and data transfer of the test results to QS via the laboratory. The sample volume is based on the amount of purchased QS goods. Adherence to the QS control plan is mandatory. This applies to the required number of samples per product and year as well as the testing methods set down as the mandatory minimum in the control plan for the products in question. All requirements are described in the **QS Guideline Residue Monitoring**, which is obligatory with regard to implementation.

Entry of the test results into the QS database is mandatory for all scheme participants who purchase QS goods. Data which are available or transferred by any other means will not be accepted and will be considered as not provided. The company is responsible for the regular entry of sample-related data and for checking the entry of the test results.

All scheme participants who use plant protection products and/or post-harvest treatment agents are further obliged to comply with the maximum residue levels of pesticides on food **(Regulation (EC) No. 396/2005)** in force in the production country and the country of destination or equivalent provisions.

Exempt from the obligation to implement the residue monitoring are:

- Companies who do not own the goods but only act as service providers (e.g. washing, cutting, sorting, packaging).
- Companies on the stage preparation/processing which are closely affiliated with their suppliers of the stage wholesale organizational and under corporate law. The exemption of the obligation for implementing the residue monitoring does not apply for goods that are bought by companies from third parties.

Laboratory results in the database

8 Definitions

8.1 Explanation of Symbols

K.O. criteria are marked with **[K.O.]**.

References to related documents are highlighted by **bold print in the text**.

This symbol means: A written confirmation must be provided. Next to this symbol also documents are listed that can be used as evidence. All (also digital) control - and documentation systems, which proof that the requirements are fulfilled, can be used.

References to other chapters of the guideline are marked with ⇒.

Notes are marked with ***Note:*** *text in italics*.

8.2 Abbreviations

CCP	Critical Control Point
HACCP	Hazard Analysis and Critical Control Points
K.O.	Knock out
CFU	Colony-forming units
BBD	Best-before date

8.3 Terms and Definitions

- Action value
  If the action value for end products is exceeded, the production process must be analysed for causes and, if applicable, measures have to be taken to reduce the germ content. Additionally for obligate or facultative pathogenic microorganisms (EHEC/STEC, Staph. aureus) must be decided to what extend the sampled batch is a "safe food" in the sense of article 14 of the Regulation (EC) No. 178/2002. For results below the action value no measures are necessary.
- Agent/mediator
  In terms of QS, agents/mediators of fruit, vegetables and potatoes, only play a mediating role between suppliers and recipients. They are neither owners nor the possessor of the goods.
- Canning production
  Process in which the product is pasteurised/sterilised in the final packaging. Therefore, the product can be stored without cooling.
- Food safety criterion
  A criterion used to determine the acceptability of a product or food batch and which applies to products already on the market (in accordance with REG (EC) 2073/2005).
- HACCP (Hazard Analysis and Critical Control Point)
  A system which identifies, evaluates and controls hazards which are significant for food safety.
- HACCP concept
  Documentation in compliance with HACCP principles to ensure the monitoring of hazards relevant to food safety
- Heating process
  The following processes are understood as heating processes: boiling, cooking, blanching, pasteurisation, sterilisation, frying, grilling, roasting, stewing.
- Labelling
  Labelling is the identification of the QS product on the accompanying documents. Goods that are produced in accordance with the requirements of the QS-scheme, but that are not marked on the delivery notes as QS lose their status as QS-goods. It is not allowed to market these goods as QS-goods.
- Logistics companies
  As defined by this guideline, logistics companies are companies, which logistically handle – e.g. which transport, ship, load, unload and commission – fresh prepared and/or processed fruit, vegetables and potatoes. This comprises all activities involved in delivery per truck (road transport), short-term storage for the purpose of transhipment of the goods during delivery, the long-term storage and the order picking. Logistics companies, which also pack, trade and/or prepare/process goods are categorised as wholesale (first-line merchants or trading partners) or preparing/processing companies.
- Preparation
  Preparation comprises all activities in which the product is shredded, peeled, grated, sliced, pureed or strained after the harvest. Preparation does not cover activities in which the product is exclusively podded, hulled or cleaned (e.g.: the removal of roots and leaves, the removal of the heart in the case of cauliflower and cabbage, the removal of the root section in the case of kohlrabi, the shortening of leaves in the case of leek).
- Process hygiene criterion
  A criterion which stipulates the acceptable method of functioning of the production process. A criterion of this kind does not apply to products already on the market. It is used to determine a guidance value for contamination which, when exceeded, requires corrective action so that process hygiene is

maintained in compliance with food law (in accordance with REG (EC) 2073/2005)

- QS-produce
  Products that are produced or marketed according to the requirements of the QS-scheme in a QS-certified company.
- Ready-to-eat food
  Food intended by the producer or manufacturer for direct human consumption without the requirement for further heating or other form of processing to kill off any relevant microorganisms or reduce them to an acceptable level.
- Service provider
  In terms of QS, service providers are companies engaged in activities within the meaning of the wholesale trade (e.g. storage, sorting, packing). They do not become the owner of the goods.
- Soup greens/Soup vegetables
  Soup greens/Soup vegetables are intended for use in the preparation of soup and are marketed in the retail sector under these or similar designations. They consist of various types of fresh vegetable that is either uncut or roughly cut and that has not been processed any further than this stage. Soup greens and soup vegetables are generally carrots, celeriac, leek, cauliflower as well as, where applicable, parsley and other herbs.
- Use of Mark
  Use of mark describes the display of the certification mark on the product.

You find a listing of general terms and definitions in the **Guideline General Requirements**.

9 Annex

9.1 Use of the QS Certification Mark for Composite Products

Annex 9.1 is published as an extract.

Revision Information Version 01.01.2020

Criterion/Requirement	Changes	Date of change
1.1 Scope	**Clarification:** Companies that produce sprouts and/or seedlings must also be certified according to the QS-GAP guideline.	01.01.2020
2.4.1 Water quality	**Clarification:** Sampling must be carried out by a qualified sampler according to a risk-based plan. For the analysis of the water, only laboratories accredited for drinking water analysis may be commissioned.	01.01.2020
2.6.2 Information on the QS scheme	**Renaming:** previously "Information/training on the QS scheme".	01.01.2020
3.1.3 [K.O.] Microbiological monitoring of the products	**Extension:** If a prepared product is processed by further internal processes or processes taking place at the customer and if it is ensured that the final product is microbiological harmless based on the performed processing steps (like boiling, frosting or canning), the analyses according to the control plan (table 1) **as well as the quarterly examinations during the production months lapse**.	01.01.2020
4.2.3 Waste disposal logistics	**Extension:** If there is a risk of mixing up between the waste and food containers, or another necessity, the containers shall be labelled.	01.01.2020
5.1.7 [K.O.] Labelling of purchased QS goods	**Deletion:** From the requirement "Labelling of purchased QS goods ", the section for labelling QS goods with an identification number is now a separate requirement and was extended.	01.01.2020
5.1.12 Labelling of QS goods with identification number	**New:** The requirement for labelling QS goods with an identification number is now a separate requirement. **Extension:** In the case of batches which may contain goods from several producers due to mixing as a result of bulk goods storage or technical packaging or treating processes (e.g. sorting system) and in the case of packes goods which contain goods from several producers, the QS-ID, the GH-number or another in the QS-database deposited identification number (e.g. the GLN or GGN) of the packing location can be used alternatively.	01.01.2020

Criterion/Requirement	Changes	Date of change
5.2.5 [K.O.] Labelling of marketed QS goods	**Clarification:** Goods can only be marketed as QS goods, if a corresponding eligibility of delivery exists for the own location in the QS database. **Deletion:** From the requirement "Labelling of marketed QS goods ", the section for labelling QS goods with an identification number is now a separate requirement and was extended.	01.01.2020
5.2.11 Labelling of QS goods with identification number	**New:** The requirement for labelling QS goods with an identification number is now a separate requirement. **Extension:** In the case of batches which may contain goods from several producers due to mixing as a result of bulk goods storage or technical packaging or treating processes (e.g. sorting system) and in the case of packes goods which contain goods from several producers, the QS-ID, the GH-number or another in the QS-database deposited identification number (e.g. the GLN or GGN) of the packing location can be used alternatively.	01.01.2020
5.3.4 [K.O.] Check of the QS-eligibility of Delivery	**Change/Clarification:** <u>Check of the QS eligibility of delivery for supplying companies:</u> All supplying companies that deliver QS goods must be clearly identified in the QS database as QS scheme participants with eligibility of delivery at the time the goods are handed over. This also applies for agencies as well as for companies, which handle or store products and do not become the owner of the goods. Additionally, delivering growers must be eligible to deliver for the corresponding production scope and where appropriate for the crop. <u>Check of the QS eligibility of delivery for recipients/resellers:</u> If goods are labelled with the QS certification mark on the label or the packaging, the recipient/reseller of the goods must be identified in the QS database as scheme participant with eligibility of delivery.	01.01.2020

Criterion/Requirement	Changes	Date of change
5.4.3 [K.O.] Temperature Control	**Clarification:** The requirement refers to vehicles of the own fleet. **Change:** The temperature control before the start of the journey can be dispensed if during the transportation a continuous temperature recording takes place. **Extension:** The requirement was extended to include continuous temperature recording during the transport of goods requiring refrigeration (by law).	01.01.2020

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