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

Guideline
Logistics Fruit, Vegetables, Potatoes

QS. Ihr Prüfsystem für Lebensmittel.

Version: 01.01.2020
Status: • Release

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

This guideline applies to all logistics companies that exclusively transport, and/or store and if necessary do the order picking of fresh, prepared and processed fruit, vegetables, potatoes without becoming the owner of the products.

1.2 Responsibilities

Scheme participants are responsible for:

- Compliance with requirements,
- Full and correct documentation,
- Self-assessment,
- Correct and timely implementation of corrective actions
- As well as the 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 has to be compiled containing the following master data:

- Address of main company and each production site
- Legal form of company
- Contact person and legal representative
- Current address
- Telephone and fax number
- E-mail address
- QS-ID
- Type of company and location number
- Details of existing systems for quality management and self-assessment (e.g. ISO 9001, IFS, BRC)
- Details on production scope (Logistics)
- Details of crisis management (amongst others naming of crisis manager)

The master data must be entered into the QS database by the scheme participant. The data have to be kept up to date at all times.

A list of the goods vehicles used for transport must also be prepared. Existing documents can be used (e.g. QM or HACCP). The company overview must remain 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 an explicit agreement by their coordinator/certification body or by QS. The QS certification mark can only be used in accordance with the stipulations in the **style guide (appendix 5.3 in the Guideline General Regulations)**.

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 it. In particular, the scheme participants must inform QS in cases in which:

- nonconformities occur in the procurement of goods, or in production or marketing that might pose a risk to food safety
- preliminary proceedings are initiated due to violation of regulations to secure food safety
- media research, critical media reports and public protests are carried out that are performed directly or indirectly due to 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: set-up of a crisis committee, emergency phone number list, procedure for product recall and acceptance, communication plan, customer information.

Paper of incident, incident and crisis management procedure

2.1.4 Handling of Documents

Each company must have a procedure that enforces and describes the filing and recording of relevant documents. All records must be detailed and complete.

Documents and records relating to internal checks carried out as part of the self-assessment system must be saved within the QS scheme for at least 2 years in accordance with the legal regulations in the interests of due diligence and the obligation to produce supporting documents for third parties.

2.1.5 Company Premises and Access Regulations

All buildings and operating facilities must be protected against unauthorized access and, if necessary, to be kept close. Access regulations must be established. Business premises where food is stored, must not be accessible for unauthorized persons.

Foreign person may only get access to the storage areas accompanied by an authorized person or upon approval by an authorized person. Foreign person have to be instructed before entering the storage areas. If loaded transport vehicles are parked at the premise, the trucks have to be secured against access by unauthorized persons.

If the premise is accessed by foreign transport vehicles, for example vegetable transports or waste collection vehicles, possible hazards have to be considered and evaluated within the risk analysis.

2.1.6 Monitoring of Test Equipment

For the control and monitoring of the devices and systems used as measuring devices it needs to be complied with the intervals given by the manufacturer. If there are no manufacturer's specifications given, the measuring devices have to be calibrated or checked in line with the personal 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 regularly. The measuring method of the various measuring devices has to be considered. The calibration procedure is described for each device.

The calibration results for the test equipment used must be documented (including deviations, corrective measures) and clearly linked to the equipment. .

The measuring accuracy, reliability and readiness of the operational measuring equipment must be assured. Scales used for controlling filling weight must be calibrated.

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

Calibration documentation

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

Compliance with the QS requirements must be checked. The regular conducting of self-assessments must be documented per 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 through automatic registration processes (e. g. automatic temperature recordings), as well as by means of manual recordings (e. g. incoming goods inspection).

It is at the discretion of the company whether or not to grant the necessary authorisation/qualification to external companies.

Checklist for self-assessment

2.1.8 Fulfilment of the Initiated Measures in the Event of Deviations

Any deviations detected during internal checks must be corrected as quickly as possible. Deadlines and responsibilities must be set for this purpose.

2.2 HACCP

2.2.1 Self-Assessment System

To ensure the necessary food safety, the company must prepare, apply and maintain a hazard control system in accordance with the HACCP principles (**Codex Alimentarius**).

This concept is based on:

- The identification of hazards that have to be avoided, eliminated or reduced to an acceptable minimum
- The determination of critical control points on the process stage(s) on which control is necessary in order to avoid or eliminate hazards or reduce them to an acceptable minimum where they exist
- Determination of limiting values for these critical control points on the basis of which a difference can be made between acceptable and unacceptable values with regard to the avoidance, elimination or reduction of established hazards
- Determination and implementation of efficient methods for monitoring the critical control points

- Determination of corrective measures for the event that monitoring shows that a critical control point is not under control
- Determination of verification methods to establish whether the measures listed in items 1) to 5) function completely and effectively. The verification methods are to be applied regularly.

2.2.2 Responsibilities

Responsibilities must be clearly defined by means of an organigram.

If changes are made to the handling of products or finished goods, or to an HACCP-relevant manufacturing process, production, processing, storage, transport or marketing stage, the company must review the HACCP concept and alter it as necessary.

When building up a self-assessment system, it must be ensured that it is possible for third parties to follow the reasoning behind it. It must contain a schematic diagram of the entire process in which the goods are handled.

Self-assessment records, checklists

2.3 Good Hygiene Practice

2.3.1 Storage of Cleaning Agents and Disinfectants

The rooms or fixtures in which cleaning agents, disinfectants and equipment are kept must be clean and tidy. They must enable the hygienic storage of the equipment and their distinct separation where necessary for the 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.

Updated safety data sheets and instructions for use must be on hand for cleaning agents and disinfectants. The responsible personnel must be aware of the instructions, which have to be kept on-site. Cleaning equipment and chemicals must be clearly marked and labelled and stored separately from foods and in accordance with the specific requirements.

Safety data sheets, operating instructions

2.3.2 Foreign Substance Management

The infiltration of foreign substances into food must be prevented. Corresponding precautionary measures and procedures must be implemented to minimize the risk.

Foreign substance management records

2.3.3 [K.O.] Risk of Contamination

To avoid contaminations a risk-based management needs to be carried out.

2.3.4 Staff Hygiene

There are documented guidelines for staff hygiene, of which staff are informed during training. At least the following points must be taken into consideration:

- Cleaning and disinfecting of hands
- Eating, Drinking, Smoking, Chewing gum
- Dealing with skin injuries (cuts, scrapes)
- Finger nails, jewelry, piercings, watches
- Hair, beards
- If necessary, wearing suitable protective clothing and headgear

Smoking is prohibited in areas where goods are stored and in case of direct contact with the product. Clearly visible "no-smoking" signs must be hung up in these rooms. Smoking is only allowed in areas and rooms which are designated for that purpose.

If necessary, suitable protective clothing and headgear has to be available for all employees in sufficient quantity. Sufficient facilities for hand hygiene must be provided in storage areas. 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)
- Suitable hand drying facilities

All persons (employees, contractors, etc.) must adhere to the staff hygiene guidelines. Anyone whose work has an influence on the safety of products must is trained according to the working area. There must be a procedure in the company which assesses the consistent implementation of personal hygiene procedures.

Rules of conduct

2.4 Training of Staff

2.4.1 Safety at Work

All newly hired personnel, as well as all other members of staff, must be trained annually on the tasks and measures that must be taken in the company for food hygiene and safety in the workplace. The name of the person who provided the training, date of training, names of participants, topic and, if applicable, any training material that was used or handed out must be recorded. The training sessions must be structured according to the education and function within the company of the person who is receiving the training.

Training certificates

2.4.2 [K.O.] Hygiene Training

According to **Regulation (EC) No. 852/2004**, the company is obliged to carry out hygiene trainings within the company annually (approx. every 12 months). The company must run a documented training plan for employees in accordance with the product and training requirements.

This training plan must contain:

- Training Contents
- Training intervals
- Participants
- Languages
- Instructor

Training plan and training certificates, proof of no smoking instruction

2.5 Waste Disposal Logistics/ Returns

2.5.1 Technical/Structural Condition

Arrangements for the storage and disposal of food waste and other waste need to be made. 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.

Wastewater systems are designed in such a way that the possibility of an impact on products is eliminated.

All waste must be disposed of in a hygienically sound and environmentally friendly manner, in accordance with the applicable community legislation, and must have no impact, direct or indirect, on food. All waste must be stored in an area protected against unauthorized interference.

In storage areas, food residues and other waste must be removed as quickly as possible from rooms in which food is handled in order to avoid the accrual of waste. Food residues and other waste must be stored in closable containers which are suitable for the purpose, in perfect working order, easy to clean and, if necessary, easy to disinfect. If there is a risk of mixing up waste and food containers, or another necessity, the containers shall be labelled.

In order to avoid unnecessary waste and to ensure efficient use of company resources, the company/enterprise has a company waste management/recycling system. Waste is separated (e.g. dual system, etc.). Recycling management is documented and evidence exists of the following points:

- Waste accrued
- Disposal method
- Whereabouts

Evidence of waste management/recycling system

2.5.2 Returns Management

A system for processing returns has to be established. All returned goods must be recorded and evaluated. If the reason for the return of the goods is the responsibility of the logistics manager, suitable measures must be implemented which prevent the recurrence of nonconformities. For this purpose, the reason for the return of the goods must be evaluated by the person responsible for the nonconformity.

3 Transport/Logistics

3.1 Process-Specific Requirements

3.1.1 Product-compliant Transport

The transport has to take place in accordance with the product requirements. Goods are conveyed under consideration of the product type, transport distance and ambient temperature. Goods conveyed in open containers on open transport vehicles must be appropriately covered.

Evidence of this must be produced.

Evidence of product-compliant transport

3.1.2 Transport Hygiene

The delivery vehicles must be in a hygienic and orderly condition with no residual dirt. Storage rooms/loading areas of transportation are only allowed to use if they are clean and free from contamination. Prior to loading/after the discharge, the loading areas have to be cleaned.

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

To ensure that no vermin are attracted, the company must ensure that a high standard of cleanliness and hygiene is complied with on the freight areas of the vehicles.

Checklist transport vehicles

3.1.3 [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 (by law), the temperature must be maintained and continuously documented throughout transportation according to the applicable regulations and specifications.

Temperature records, checklist for transport vehicles

3.1.4 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 charged with the storing and if necessary with the 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

4 Storage

4.1 Process-Specific Requirements

4.1.1 Tidiness and Organisation

The receiving department must follow a structured series of procedures. The spaces of the goods must clearly follow from the work process and possible food safety hazards must be prevented. Pathways for goods must be optimized accordingly so that there is no cross-contamination. Goods that need to be cooled must be taken to the cold stores without delay to ensure compliance with the cold chain.

4.1.2 [K.O.] Incoming Goods Inspection

Inspections of incoming goods must be carried out according to a regulated process on the basis of internal guidelines. These incoming goods inspections must be recorded. They must comprise all relevant products and focus in particular on:

- Temperature
- Damage/contamination

4.1.3 Transport Vehicles

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 appropriate clean clothing. Goods must not be harmed by clothing or handling.

To ensure that no vermin are attracted, the company must ensure that a high standard of cleanliness and hygiene is complied with on the freight areas of the vehicles.

The goods to be transported must be loaded in a perfectly clean 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

4.1.4 [K.O.] Product Temperature

The legally prescribed 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 conveyance to the workplace). The consumer health must not be endangered by the rise in temperature.

The prescribed product temperature of fruit and vegetable items (e.g. processed products) that are required to be refrigerated must not be exceeded. Product-specific regulated temperature ranges have to be met. If lower temperatures are set by the company (internal guideline) and agreed to by the supplier (e.g. in specifications), the products must be kept at these temperatures and this must be taken into consideration when incoming goods arrive. The temperatures have to be controlled and documented.

Temperature records

4.1.5 Staff Rooms

The company must provide changing rooms for employees and visitors to the company. Outdoor clothing and protective clothing must be kept separately where necessary. Staff rooms, including break rooms, must always be kept in a clean condition. The rooms must be cleaned on a regular basis. This cleaning must be documented.

Cleaning records

4.1.6 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 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 on pest prevention and control, pest control plan, if applicable proof of qualification, if applicable contract with specialist companies

4.2 Storage

4.2.1 Technical/Structural Condition

Work areas and rooms in which food is handled must be, in accordance with **Regulation (EC) No. 852/2004 Appendix II**, clean and properly maintained at all times. They must also be planned, designed, built and proportioned in such a way that the necessary level of cleaning and/or disinfection is possible and contamination is avoided or reduced to a minimum level.

The following requirements must be met:

- Floor coverings and wall surfaces must be kept in very good condition and must be easy to clean and disinfect when necessary.
- Ceilings (or roof interiors where there are no ceilings) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, undesired mould infestation and the flaking of material particles is kept 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 where necessary with insect screens, which must be easy to remove for cleaning purposes.
- Doors must be easy to clean and disinfect when necessary. They must have a smooth, water-repellent surface.

Work rooms and plant must be kept in an appropriate condition and must be maintained in accordance with written instructions.

4.2.2 Room Hygiene

All rooms, plant and machinery must be in a clean and hygienic condition. The accumulation of water in unused spaces must be avoided. The transport containers and vehicles must be kept hygienically clean. Rooms must be protected against pest infestation by installing tightly sealed gates and doors. Delivered goods must also be checked for pest infestation and if necessary, appropriate measures must be introduced. Areas for storing pallets and barrels have to be cleaned on a regular basis.

A cleaning plan for work and storage areas (e.g. loading ramp) must be drawn up.

Storage rooms must be cleaned regularly in accordance with a cleaning plan; cleaning of the floor covering is particularly important (fruit and vegetables in accordance with the wet cleaning requirement). The frequency of cleaning is based on the work rhythm/restocking in the operating rooms/storage rooms.

Each company must have a hygiene checklist, which is displayed for all employees to see. Basic hygienic requirements and responsibilities must be laid out clearly in this list.

The implementation of the requirements on this company checklist must be assessed regularly (at least once a year). The results of these assessments must be documented and readily available.

Cleaning plans, disinfection plans, hygiene checklist, inspection results, implementation of hygiene checklist

4.2.3 Ground Clearance

Products are not allowed to come into direct contact with the floor/ground. Containers for storing products are not allowed to be placed directly on to the ground, but have to be stored on pallets or mobile bas with wheels, as otherwise there could be a risk of contamination from dirty floors when restacking.

Potatoes and onions

Unpacked potatoes and onions can be stored directly on the ground or on the appropriate equipment if the soil or material on which they are stored is in a clean and hygienic condition.

4.2.4 Stock Management

A feasible and comprehensible stock management system has to be in place, by means of which it can be quickly and unequivocally determined when which goods were stored. Each stored or temporarily kept product or packaging unit needs to be clearly identifiable. Storage conditions must not have any negative impact on product quality (packaged/unpackaged). A procedure which lays down the measures and steps to be taken in the case of a system failure or fault must be determined, and the relevant employees must be aware of the procedure. Furthermore there must be a procedure determined for the handling of blocked produce and goods that are not conform.

A batch-based storage system must be implemented. The batches must be labelled. The definition of a batch is a duty of stock management.

Mixing of varieties may not occur.

The following information must be clearly documented using company records:

- Date of delivery
- Labelling
- Supplier
- Batch
- Quantity

A constantly updated list of all customers must be kept along with the quantity of products currently in storage on their behalf. The products must be allocated to the customers in the storage facilities.

Documentation of storage, list of all suppliers and product quantities

4.2.5 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 fixtures where products or pieces of equipment are stored (particularly for potatoes, in the case of the rapid drying of moist tubers, wound healing, etc.).

Long-term storage

To avoid the occurrence of condensate, the changes in temperature need to be considered.

During storage, the state of the goods and the defined storage conditions must be controlled and documented regularly. Ethylene-sensitive fruit and vegetables (e.g. kiwis, cauliflower, Brussels sprouts,

etc.) and potatoes must not be stored in close proximity to fruit and vegetables which produce a lot of ethylene (e.g. apples, nectarines, peaches, melons, etc.) in case of a longer storage.

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

Documentation of the quality of goods and the storage conditions

4.3 Cold Storage Rooms

4.3.1 Technical/Structural Condition

Cold storage rooms in which food is handled must be, in accordance with Regulation **(EC) No. 852/2004 Appendix II**, clean and properly maintained at all times. They must also be planned, designed, built and proportioned in such a way that the necessary level of cleaning and/or disinfection is possible and contamination is avoided or reduced to a minimum.

The following requirements must be met:

- Floor coverings and wall surfaces must be kept in very good condition and must be easy to clean and disinfect when necessary.
- Ceilings (or roof interiors where there are no ceilings) and ceiling structures must be built and finished in such a way that the accumulation of dirt is avoided and condensation, undesired mould infestation and the flaking of material particles is kept 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 where necessary with insect screens, which must be easy to remove for cleaning purposes.
- Doors must be easy to clean and disinfect when necessary. They must have a smooth, water-repellent surface.

Work rooms and plants 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 needs to be suitable for the purpose.

The maintenance program has to include at least the following elements:

- Transport systems (where present)
- Responsible employees (own employees or those from external companies)
- Frequency

It must be proven by documentation of maintenance work that the requirements listed above are met.

Documentation of the Maintenance

4.3.2 Room, Equipment and Plant Hygiene

The cold-storage rooms must be in a clean and hygienic condition. Mould growth in the cold-storage rooms must be avoided and, if necessary, steps to eliminate mould must be implemented. It is also important to ensure that ice formation is kept to a minimum. The refrigeration units need to be serviced regularly and be in a hygienically sound condition.

The accumulation of water in unused spaces must be avoided and there may be no large corrosion areas on plant and machinery. Rooms must be protected against pest infestation by installing tightly sealed gates and doors. Areas for storing pallets and barrels need to be cleaned on a regular basis.

A cleaning plan has to be created for the storage areas (e.g. loading ramp).

Storage rooms have to be cleaned regularly according to the cleaning plan. This applies especially to the floor covering. The frequency of cleaning is based on the work rhythm/restocking in the operating rooms/storage rooms.

Each company must have a hygiene checklist, which is displayed for all employees to see. Basic hygienic requirements and responsibilities must be laid out clearly in this list.

The implementation of the requirements on this company checklist must be assessed regularly (at least once a year). The results of these assessments must be documented and readily available.

Cleaning plans, disinfection plans, hygiene checklist, inspection results, implementation of hygiene checklist

4.3.3 Ground Clearance

Products are not allowed to come into direct contact with the floor/ground. Containers for storing products are not allowed to be placed directly on to the ground, but have to be stored on pallets or mobile base with wheels, as otherwise there could be a risk of contamination from dirty floors when restacking.

Potatoes and onions

Unpacked potatoes and onions can be stored directly on the ground or on the appropriate equipment if the soil or material on which they are stored is in a clean and hygienic condition.

4.3.4 Stock Management

A feasible and comprehensible stock management system has to be in place, by means of which it can be quickly and unequivocally determined when which goods were stored. Each stored or temporarily kept product or packaging unit needs to be clearly identifiable. Storage conditions must not have any negative impact on product quality (packaged/unpackaged). A procedure which lays down the measures and steps to be taken in the case of a system failure or fault must be determined, and the relevant employees must be aware of the procedure. Furthermore there must be a procedure determined for the handling of blocked produce and goods that are not conform.

A batch-based storage system must be implemented. The batches must be labelled. The definition of a batch is a duty of stock management.

Mixing of varieties may not occur.

The following information must be clearly documented using company records:

- Date of delivery
- Labelling
- Supplier
- Batch
- Quantity

A constantly updated list of all customers must be kept along with the quantity of products currently in storage on their behalf. The products must be allocated to the customers in the storage facilities...

Documentation of storage, list of all suppliers and product quantities

4.3.5 [K.O.] Temperature Recording and Monitoring

Temperature recording and monitoring must be regulated in such a way that all product temperature requirements are met.

The operating temperature of any 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 acknowledged by the employees.

Long-term storage of potatoes

Separate records on climate control and climate development in the warehouse are necessary for potatoes. These records are to include

- Information on the changes in the temperature of the outside air
- Indoor air temperature
- Temperature of tubers
- Ventilation times
- Operation of ventilation equipment

Documentation of self-assessment, checklists, documentation of measures in case of non-conformities, temperature documentation

4.3.6 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 fixtures where products or pieces of equipment are stored (particularly for potatoes, in the case of the rapid drying of moist tubers, wound healing, etc.).

Long-term storage

To avoid the occurrence of condensate, the changes in temperature need to be considered.

During storage, the state of the goods and the defined storage conditions must be controlled and documented regularly. Ethylene-sensitive fruit and vegetables (e.g. kiwis, cauliflower, Brussels sprouts, etc.) and potatoes must not be stored in close proximity to fruit and vegetables which produce a lot of ethylene (e.g. apples, nectarines, peaches, melons, etc.) in case of a longer storage.

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

Documentation of the quality of goods and the storage conditions

4.4 Product-Specific Criteria for the Storage of Potatoes (Long-term Storage)

4.4.1 Suitability of Warehouse

The facilities for incoming goods must enable a product-oriented and careful receipt of goods from transport vehicles. The structural and technical layout of the warehouse must meet the requirements for gentle handling of potatoes.

4.4.2 Suitability of the Equipment for Incoming and Outgoing Goods

The number and length of drop heights at the supply terminals 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 need to be taken into consideration in order to minimise strain on the tubers.

5 Traceability and Origin

5.1 Methods and Control of Traceability

5.1.1 [K.O.] Methods of Traceability

There must be evidence of the transparency of the goods flow. Scheme participants must establish traceability systems and processes in accordance with **Regulation (EC) No. 178/2002**. The scheme participant is obliged to follow a labelling and registration system which is comprehensible to a third party. This labelling and registration system enables to clearly make a statement where, i.e. on which transport vehicle or in which (transhipment) warehouse, the goods are located during the logistics process.

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 have to be structured in such a way that the appropriate information can be compiled within four hours.

The following customer and supplier information is relevant:

- Name, address and telephone number
- Type and quantity of shipped products
- Delivery date
- Batch and/or lot number (if issued during the production or picking process)
- Batch/lot numbers on the overpackaging of bulk goods

Furthermore, a customer list must be available.

🗍 Batch labelling, documents for incoming goods (e.g. CMR (waybills), delivery notes, incoming goods inspection) and documents for outgoing goods, traceability system

5.1.2 [K.O.] Traceability Check

The traceability of all goods must be checked using an example from production or shipment in accordance with **Reg. (EC) No. 178/2002**. The system must be tested at least once a year and the results need to be documented.

🗍 Test labelling and registration system

6 Definitions

6.1 Explanation of Symbols

[K.O.] This symbol marks K.O. criteria.

References to other applicable documents are **marked in bold**.

🗍 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.

⇒ marks references to other guideline chapters.

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

6.2 Abbreviations

CCP	Critical Control Point
HACCP	Hazard Analysis and Critical Control Points
K. O.	Knock out

6.3 Terms and Definitions

- 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.
- HACCP (Hazard Analysis and Critical Control Point)
  A system which identifies, evaluates and controls hazards which are significant for food safety.
- HACCP Concept
  Documentation consistent with the principles of HACCP to ensure control of hazards which are significant for food safety.
- 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 loose 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 if necessary 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 transshipment 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.
- Long-term Storage
  Long-term storage includes any types of storage that goes beyond the storage for the purpose of stock turnover.
- QS-produce
  Products that are produced or marketed according to the requirements of the QS-scheme in a QS certified company.
- 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**.

Revision Information Version 01.01.2020

Criterion/Requirement	Changes	Date of change
2.5.1 Technical/Structural Condition	**Extension:** If there is a risk of mixing up waste and food containers, or another necessity, the containers shall be labelled.	01.01.2020
3.1.3 [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

QS Fachgesellschaft Obst-Gemüse-Kartoffeln GmbH

Managing Director: Dr. H.-J. Nienhoff

Schedestraße 1-3
53113 Bonn

Tel +49 228 35068-0
Fax +49 228 35068-10

info@q-s.de
www.q-s.de

Photos: QS