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For quality of life

Eurep-GAP in the European Union

Quality Management and food safety in apple and onion chains in Hungary, Poland, Slovakia and The Netherlands

Marcel van der Voort, Viera Baričičová, Marek Dandar, Maria Grzegorzewska, Herman Schoorlemmer, Csaba Szabo & Krzysztof Zmarlicki

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**EURO
FRUIT
VEGETABLE**



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Quality Management and food safety in apple and onion chains in Hungary, Poland, Slovakia and The Netherlands

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Table of contents

	page
1. Introduction	1
1.1 Background	1
1.2 Training manual	1
1.3 Bookmark	1
2. Background and reasons quality management	3
3. Eurep-GAP in practice	11
4. Some bottlenecks in Eurep-GAP certification	31
4.1 Complex administration	31
4.2 MRL levels of designated countries difficult to find	31
4.3 Residue analysis is expensive	31
4.4 Hygiene requirement	32
Consulted literature	33
Appendix I. Field Registration list	3 pp.
Appendix II. Sales list	2 pp.
Appendix III. Purchase list	2 pp.
Appendix IV. Record sheet fertilizers	1 pp.
Appendix V. Record sheet pesticides	1 pp.

1. Introduction

1.1 Background

In the European Union, vegetable and fruit growers have to deal with increasing demands made on their product and their production system. The market demands tailor-made, traceable products and reliable suppliers. The need for food safety and product quality is widely acknowledged by the European Union, the food industry, and consumers. These are basic conditions for international trade. This means that the capacity to translate these needs into practical and controllable measures is a critical factor for a successful position in a competitive agricultural sector.

Product safety (prevention of food borne pathogens) and product quality (increased shelf-life and improved texture, flavour, and colour) in the vegetable supply chain can be controlled by developing and implementing food safety and quality programmes. These programmes may focus on the product, the production process or on the whole supply chain. Improvement of quality assurance and food safety is not only a matter of programmes and systems. Preconditions are awareness, attitude, knowledge, (chain) organization and institutional embedding.

1.2 Training manual

This training manual is part of the Qualiman project within the EU Access programme (a programme on “sustainable and competitive agricultural supply chains in pre- and post-European Union accession countries”, shortly called “EU-access”). The project is funded by the Dutch Ministry of Agriculture, Nature and Food Quality. The Qualiman project aims to contribute to safe food production and uniform quality management in vegetable and fruit production chains in the new European Union Member States.

This training manual is part of the pilot on agricultural quality standards. The objective of this pilot is the development and testing of a training course on quality requirements. The training manual informs growers and trainers on the basic quality requirements and the relationship of these requirements with international standards and EU Marketing Standards. The training materials were tested with a group of growers to guarantee applicability in practice. The training material is intended to be used by trainers of pre- and post-accession countries.

1.3 Bookmark

This training manual is designed around two presentations (training courses) on quality management systems and Eurep-GAP certification. The slides are presented in this training manual, each time followed by background information. This means that the training manual can be used in two ways: by trainers as input for their own presentation/training course and by farmers to learn about the background, implementation and bottlenecks of Eurep-GAP. Trainers can take our slides and use them in their own training course(s) and use the explanation as background information.

The training manual contains two presentations. The first presentation covers the general background and the origin of quality management systems in agriculture. The second presentation covers Eurep-GAP implementation on a vegetable or fruit growing farm. The two presentations with explanation are followed by a chapter on bottlenecks that farmers in post-accession countries faced during Eurep-GAP implementation. One of these bottlenecks is that registration forms are not or hardly available. A number of registration forms are given in the appendix.

This training manual has been drawn up with utmost care and attention. This does not guarantee that the given information is flawless. Change and improvement are continuing processes; this subjects standards and legislation to constant change. Users of this manual are advised to retrieve the latest version of the standard or legislation to ensure an up-to-date view of their current status.

Comments and/or remarks for improvement of this training manual are welcomed.

2. Background and reasons quality management

This first presentation gives trainers and farmers insight in the developments that led to the current situation. A situation in which supermarkets are demanding a number of quality management systems.



(Schoorlemmer, 2005)

The increase in laws and regulations is an important development, mainly driven by the increase in international trade and the increase in welfare level. These two developments are closely interrelated. The rise in welfare increases the purchasing power of consumers. This results in consumers changing their consumption pattern. One of the most visible changes of increasing welfare is the increase in supermarkets. In less developed countries the open market place is an important channel in the distribution of fruit and vegetables. In West European countries supermarkets play a major role in the distribution channel. They often offer a wide (internationally orientated) range of products and are often multinationals. This international orientation of supermarkets is an important factor in the rise of international trade. International trade needs rules and regulations to work efficiently. Differences in rules and regulations between countries lead to trade barriers.



(Van der Voort, 2005)

All this means that a number of public laws and regulations is being developed to further improve or regulate international trade. Examples of such international regulations are the UN-ECE standards (United Nations Economic Commission on Europe). The UN-ECE standards are also incorporated into the European legislation. The EU marketing standards are directly derived from the UN-ECE standards. The EU marketing standards lay down requirements regarding, e.g., classification, sizing and presentation. By accepting the UN-ECE standards the EU ensured a uniform product quality standard throughout Europe.

Other laws and regulations that influence daily farm activities are related to food safety, such as the European General Food Law and the Maximum Residue Levels (MRLs).



(Schoorlemmer, 2005)

Supermarkets are facing a number of bottlenecks in the supply chain. This first slide states that fruit and vegetable production depends on a great number of variables such as weather, climate, and diseases. These variables influence production and therefore also the supply to supermarkets. This causes an unstable supply of fruit and vegetables for supermarkets. The large quantities demanded by supermarkets present another problem. Very few suppliers of fruit and vegetables can deliver these quantities. The supermarkets are therefore facing many suppliers,

resulting in high handling costs. Furthermore, often fruit and vegetable quality is not consistent. This means that supermarkets cannot expect the same quality level with each delivery.

Bottlenecks in the vegetable supply chain (2)

- Lack of quality control
- Limited insight into production methods
- No tracking and tracing ability

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(Schoorlemmer, 2005)

This second slide states that insight of supermarkets and consumers in the production methods of agricultural products is limited. One of the reasons for this is the lack of quality control during production (and the supply chain). This is made worse by a lack of tracking and tracing. If a shipment with high residue levels is detected it is often hard or even impossible to trace back the responsible grower. Aspects such as honest pay of employees, use of integrated crop protection also play a role in the view on in the production process. Product and production quality is of great importance to supermarkets. Involvement in a food safety incident (e.g. selling products with residue levels above MRL standards) may have severe consequences for supermarkets; bad publicity and loss of clients are possible consequences of such a food safety incident.

Dozens of quality systems in the food industry

- Eurep-GAP
- BRC – British Retail Consortium
- SQF – Safe Quality Food
- Q&S – Qualität und Sicherheit
- Several other labels

APPLIED PLANT RESEARCH
PRACTIJKONDERZOEK PLANT & OMGEVING B.V.

(Schoorlemmer, 2005)

To assure the quality and safety of fruit and vegetable products, supermarkets independently developed a number of quality systems. The above-mentioned quality systems are designed to minimize the risk of food safety incidents.

The Eurep-GAP certification scheme started in 1997 as an initiative of retailers belonging to the Euro-Retailer Produce Working Group (EUREP). Other groups (mostly nationally oriented) developed their own standard. British supermarkets often use the BRC standard (British Retail Consortium), German supermarkets the QS-standard (Qualität und Sicherheit) and Australia developed the SQF standard (Safe Quality Food).

Why these systems?

Supermarkets want guarantee of:

- Safe food
- Good quality
- Certainty of quantity
- Insight in production process
- Tracking and tracing

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The quality management systems primarily serve to ensure food safety but aspects that relate to the above-mentioned bottlenecks (e.g. unstable supply, handling costs, product quality, limited insight into the production process, and tracking and tracing ability) are covered as well.

Common ground in these systems (1)

- Always comply with legal requirements

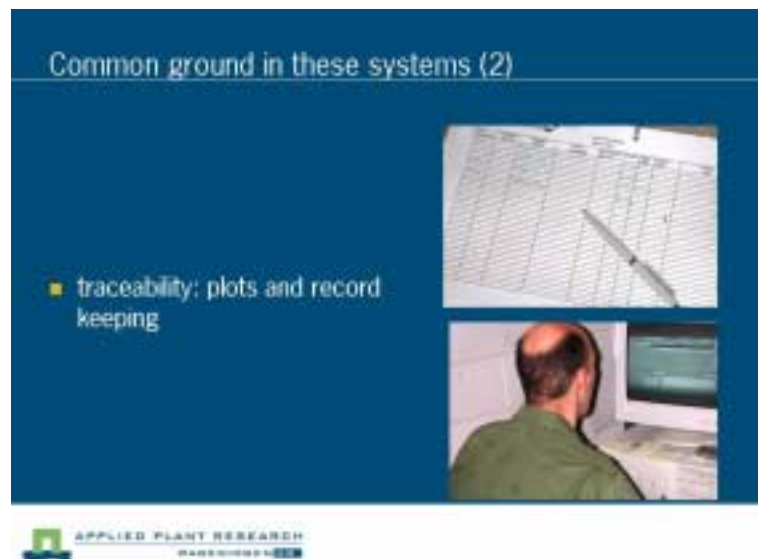
APPLIED PLANT RESEARCH
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(Schoorlemmer, 2005)

The following five slides show the elements that quality management systems have in common. First: farmers always need to comply with the legal requirements. This forms the basis for all schemes. Farmers in the EU need to comply with national pesticides regulations and European food safety regulations.

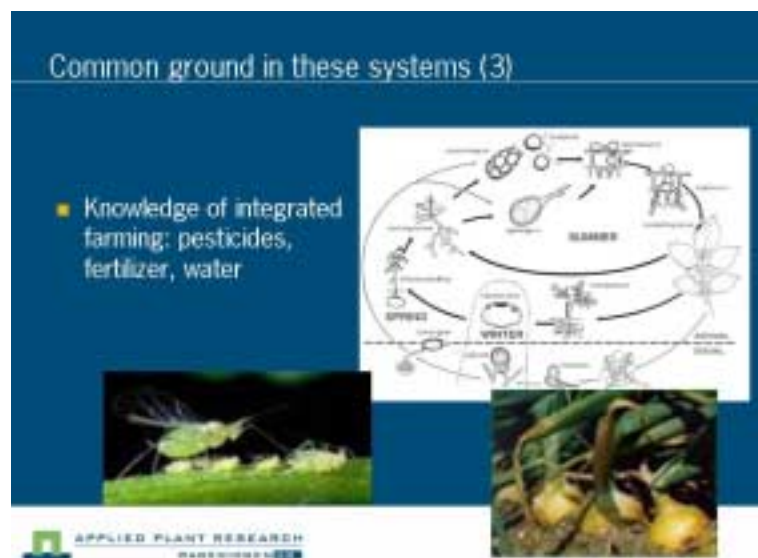
This requirement is often subject of discussion among farmers. A farmer who operates a farm in a State with stringent pesticides regulations can have problems in coping with a particular pest in a particular crop if effective pesticides are banned whereas less stringent regulations cause no such problems in a different State. The certification scheme is

usually the same for all farmers in different States but reference to local legislation can change the level playing field for farmers.



(Schoorlemmer, 2005)

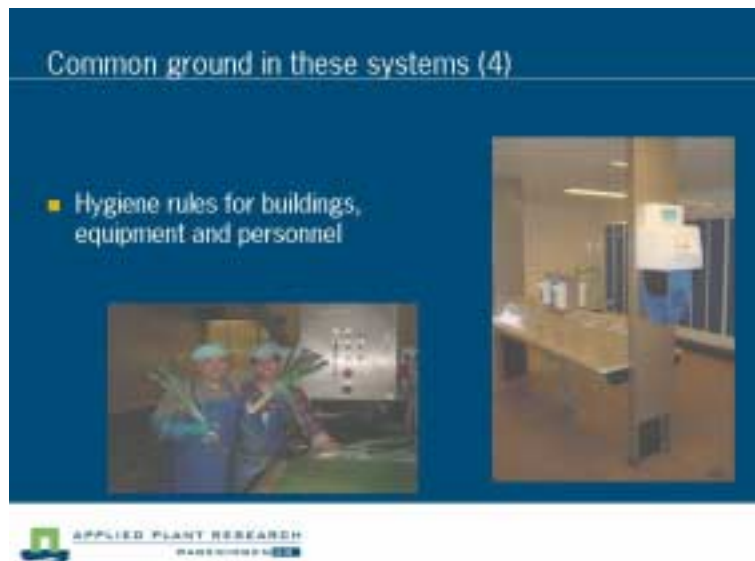
A second common element in the quality management systems is that registration is required for all certification schemes. The phrase often used in relation to more general quality systems (ISO 9000 standard) 'do what you say and write it down' can also be applied to these quality management systems. Record keeping enables checking (inspection) of activities.



(Schoorlemmer, 2005)

A third common ground in these systems, Good Agricultural Practice (GAP), is translated into the requirements regarding the use of environmentally friendly agricultural practices for pesticides and fertilizers. A number of these quality management systems promote the use of integrated techniques like Integrated Pesticide Management (IPM) to meet this requirement.

Use of the lowest possible amount of pesticides not only benefits the environment but also limits the risk of exceeding the Maximum Residue Level. A benefit for the farmer is that integrated techniques can save money, especially in case of high priced pesticides and/or fertilizers.



(Schoorlemmer, 2005)

Another common ground covers hygiene rules for buildings, equipment and personnel. Good hygiene practices on the farm restrict the risk of chemical contamination of crops, usually by pesticides, the risk of micro-biological or physical contaminants. Hygiene practices are required for growing as well as for farm processing. Three major elements related to hygiene rules are buildings, equipment and personnel.



(Schoorlemmer, 2005)

Implementation of a quality management system can raise a number of questions for farmers. A number of consultants are offering services to assist farmers in implementing a quality management system. After implementation of the GAP scheme only recognized certification institutes can carry out certification. Certification institutes need accreditation of, often a national, accreditation board. This means that “everyone can consult a farmer on implementation but only recognized institutes can carry out certification”.



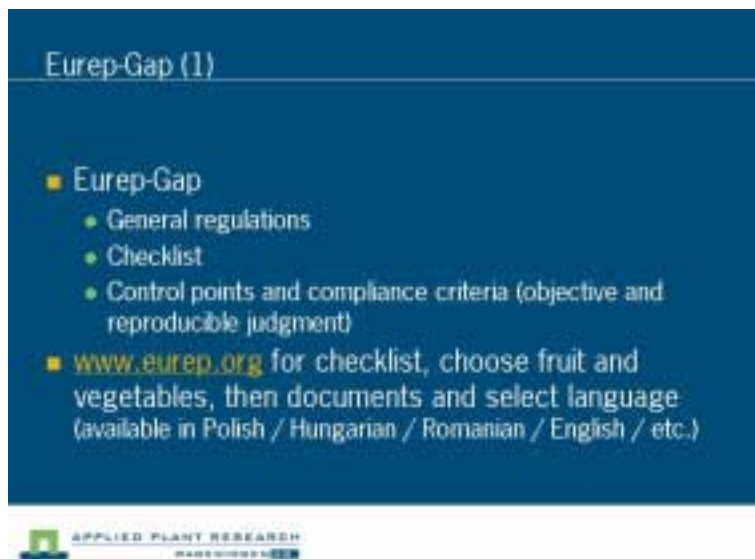
Implementation of Good Agricultural Practice (quality management system) does not just serve to comply with the requirements of supermarkets ('licence to deliver') but is also a 'licence to produce'. Translation of consumer wishes therefore means that agricultural enterprises need to comply with these Good Agricultural Practices. Consumers expect to buy safe fruit and vegetables. More knowledge on environmental issues has led to an increased awareness of consumers of these matters. But farmers and workers can also benefit from Good Agricultural Practices in the form of safe and pleasant working conditions and good soil and water quality.



All these developments combined give the farmer a number of messages. Local open markets do not offer a secure sales channel. The strengthening of supermarkets means the decline of local open markets. The large quantities demanded by supermarkets force small unaligned and independent farmers to consider their chain strategy. The changes in the supply chain need to be met by the farmers to stay in business. Non-compliance can mean decline of sales channels open to the farmer. As regards food safety, non-compliance can cause food safety incidents. The negative effects of a food safety incident may not just affect one farmer but a whole group. A whole product group can be banned if consumers lose faith in the food safety of the product. If the country of origin is known in such cases, the image of all agricultural products from such a country is affected. A pro-active attitude towards quality systems and food safety means that farmers can meet the requirements of both the market as well as consumers.

3. Eurep-GAP in practice

The second presentation of this training manual focuses on Eurep-GAP implementation at farm level. Eurep-GAP is one of the rapidly expanding GAP schemes. This presentation/chapter provides information on the different chapters and elements of Eurep-GAP. The presentation is designed to let farmers learn more about Eurep-GAP and what it means for them.



(Schoorl, 2005, edited by Van der Voort)

The Eurep-GAP documents are divided into three groups. The General regulations give the certification requirements, the Checklist is a useful tool for (internal) audits, and Control Points and Compliance Criteria (CP&CC) present and explain the demands per requirement. This explanation enables the farmer to see whether or not he is complying with the Eurep-GAP standard.

All documents can be downloaded from the Eurep-GAP website: www.eurep.org. The documents are updated regularly; it is therefore advised to check the Eurep-GAP website regularly. The documents are made available in an increasing number of languages.



(Schoorl, 2005)

Secondly, it is important to know that the requirements and checklists are the same for each country. As already mentioned in the first presentation, the differences primarily concern the requirements to comply with national legislation. This leads to the same Eurep-GAP but different requirements due to the national legislation.



(Schoorl, 2005)

Eurep-GAP has its own set of compliance levels for certification. The Eurep-GAP requirements are divided into three categories: **major musts**, **minor musts**, and **recommendations**. The category determines the level of non-compliance that is allowed. The major musts require 100% compliance. Minor musts require 95% compliance. For minor musts it is not defined which should be fulfilled first. This means that a farmer can decide to non-comply with one or two minor musts that are hard to meet. There is no compliance level for recommendations.

This presentation highlights a number of control points (requirements) to provide better insight into Eurep-GAP requirements. The control points are presented in a logical order, related to the process on the farm, from varieties and rootstock to harvest and post-harvest treatments.

The colours used for major musts (red), minor musts (white) and recommendations (green) will also be used in the following slides. This to indicate the compliance level required for a particular item.



(Schoorl, 2005, edited by Van der Voort)

The first process-related control point covers varieties and rootstock. Use and qualities of the seeds used must be recorded. Two control points require special attention. If seeds are treated with pesticides or treatment is carried out on the farm, treatment, pesticide and pest (targeted at) must be recorded. Use of GMO crops is only allowed if this complies with national legislation. Use of GMOs must be documented and recorded. The red color indicates that compliance with national legislation on GMOs is a major must.



(Schoorl, 2005)

The second slide with control points on varieties and rootstock presents the items on propagation material. Propagation material used must be supplied with a plant health certificate which must be kept with other relevant documents. If the propagation material is grown in-house, growing records and especially crop protection products must be kept. An internal plant health quality control system must be set up as well. The record and control system should ensure the use of safe and high-quality propagation material.

Control points: History and site management

- New agricultural sites
 - Risk assessment of suitability for food production
 - Action plan to minimize identified risks
- Site management
 - Recording system for each field (variety level)
 - Visual identification system (signs start or end of field, row numbers)



(Schoorl, 2005)

A number of Eurep-GAP control points relate to site management and soil. Special attention is required for the following site management control points. Food safety risks exist if a farmer takes a field into use that was not in agricultural use before. Such a field may contain heavy metals or other contaminations that may be absorbed by the crop. To prevent the risk of crops containing, e.g., heavy metals above the Acceptable Daily Intake (ADI), a risk assessment must be made before taking a field into use. A corrective action plan must be set up besides the risk assessment. This plan sets out strategies to minimize all identified risks for new agricultural sites. Part of the record keeping concerns site management. There should be a recording system for each field or orchard. Per field (variety) documented records that refer to an area of a crop must be kept which records all activities concerning this area (crop). To support this system, a visual identification of reference for the field or orchard is necessary. Another requirement for annual crops is that crop rotations must be recorded.

Control point: Recording system for each field




(Schoorl, 2005, edited by Van der Voort)

The field map of an agricultural holding may look as shown above. The fields are set up per variety of each crop. A field map should be part of the site management records.



(Schoorl, 2005)

Soil conservation is part of Good Agricultural Practice (GAP). This requires the use of cultivation techniques that prevent or minimize erosion risks. Soil life should also be preserved. The use of chemical fumigation should therefore be avoided and alternatives must be investigated. There should be written evidence and justification if chemical fumigation is used. Application of the chemicals used must be recorded as for pesticides (which will be discussed below).



(Schoorl, 2005)

Control points on fertilizer use are laid down in Eurep-GAP. Fertilizer should be applied by a responsible person who has sufficient knowledge on fertilizer use. Fertilizer use is critical due to the negative effects of using too much or too little fertilizer. Fertilizer application must therefore be recorded per field (crop/variety). The machinery used must be kept in good condition and should be inspected annually.

A risk assessment should be carried out if organic fertilizer is used. This assessment should consider disease transmission, weed seed content, composting method, contamination with e.g. heavy metals etc.

Control points: Fertilizer storage



(Schoorl, 2005)

Some examples of fertilizer storage are given above.

Control points: Fertilizer use (2)

- Fertilizer storage (stock inventory; covered, clean, dry & reduced risk of contamination of water sources)
- Fertilizer storage (separated from produce and plant material)
- No use of human sewage sludge



(Schoorl, 2005)

Fertilizer should be stored in a dry and clean place separated from produce or propagation material. Contamination of water sources must be prevented. Leaking pans and similar precautionary measures are required. A record of fertilizer stored should be kept, which indicates quantity and type of fertilizer. It is not allowed to use human sewage sludge.

Control points: Irrigation/ Fertigation

- No use of untreated sewage water
- A lot of recommendations related to:
 - Optimize usage and reduce waste
 - Testing water quality (microbial, chemical contamination)




(Schoorl, 2005)

A number of recommendations are related to irrigation. A major control point is that no untreated sewage water is used. The recommendations are related to irrigation requirements, irrigation method, water quality and source of water (sustainable).

Control points: Crop protection (1)

Basic elements

- Use of appropriate minimum of the crop protection product
- Follow anti-resistance recommendations (use more than one product)
- Advice or training on implementation of IPM (Integrated Pest Management)



(Schoorl, 2005)

The next seven slides cover the control points on crop protection. First, there are a number of basic requirements in using crop protection products. An important requirement is that all use of pesticides is documented, including written justification, targeted pest and intervention thresholds. Eurep-GAP promotes the use of IPM techniques (Integrated Pest Management). The use of IPM techniques is recommended but training or advice on IPM is required. The anti-resistance recommendations of the products must be followed to maintain the effectiveness of the crop protection products.



(Schoorl, 2005, edited by Van der Voort)

Some pictures of crop protection application in leek and a pesticide pack are shown above.



(Schoorl, 2005, edited by Van der Voort)

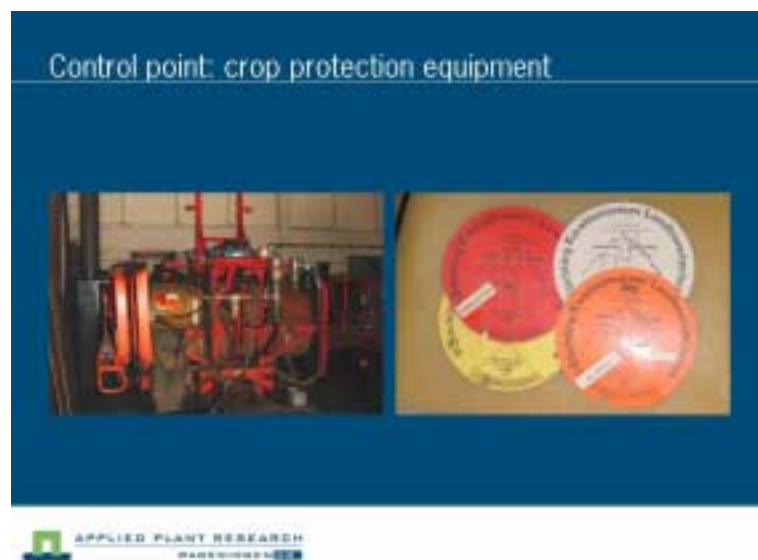
Pesticides play an important role in Eurep-GAP and food safety. A great number of major musts are therefore related to pesticide use.

The chosen chemicals should be appropriate for the targeted pest and recommended on the product label. All crop protection products used must be registered (officially approved) by the national governmental organization of the country where the product is used. A list of approved crop protection products of the country must be present. Another related requirement is that crops grown outside the European Union, but destined for sale in the EU, are not treated with crop protection products that are banned within the European Union. The person responsible for the choice of crop protection products (farmer or advisor), should be able to demonstrate (prove) technical competence. Furthermore, the record of pesticide use should demonstrate the correct application rate of the crop protection product for the crop, according to the label instructions.



(Schoorl, 2005, edited by Van der Voort)

The third slide on crop protection relates to record keeping which, as already indicated, is an important requirement of Eurep-GAP. The crop protection records should state crop name and variety, location (name/number field), application date, product name and active ingredient(s). Other requirements are that the operator must be recorded, and that the amount of product (weight or volume) and application machinery are recorded. Pre-harvest intervals are critical to food safety. The farmer must be able to demonstrate that all pre-harvest intervals have been observed. Especially in continuous harvesting situations, fail-safe systems must be in place to ensure compliance with the pre-harvest interval.



(Schoorl, 2005, edited by Van der Voort)

An example of application equipment and the annual inspection stickers required for Eurep-GAP are shown above.

Control points: Crop protection (4)

- Application equipment
 - Good condition
 - Annual check (legislation?)
 - Correct handling and filling
- Dispose of surplus application mix
 - National law or
 - Spray on untreated trees or fallow land and registration in records



(Schoorl, 2005, edited by Van der Voort)

Application equipment must be kept in good condition and must be inspected annually by a competent person. In some countries this requirement is also integrated into national legislation. Facilities used for handling and filling should be adequate for mixing crop protection products to ensure that handling and filling procedures, as stated on the label, can be followed.

Surplus application mix must be disposed of in compliance with national or local legislation. If there is no legislation surplus application mix should be applied over an untreated part of the crop (as long as the recommended dose is not exceeded and records are kept) or applied on designated fallow land (if legally allowed and records are kept).

Control points: Crop protection (5)

Residue analysis

- Annual check of residue levels of relevant (crop) chemicals.
- Maximum residue levels of market/country where product is put on market
- Check by accredited laboratory
- Action plan if residue level is too high (to avoid that produce will be eaten, recall).



(Schoorl, 2005, edited by Van der Voort)

This fifth slide on crop protection gives a number of important control points of Eurep-GAP on pesticide residues. All crops registered for Eurep-GAP certification require annual crop protection residue analysis results. The residue analyses must be carried out by a third party and must be traceable to farm and crop. MRLs are related to the residue analysis. Farmers must have information regarding the MRL restrictions of the market the crop is intended for. The farmer should also be able to demonstrate that the MRLs have been observed during production. The laboratory hired for residue testing must be accredited by the national authority for ISO 17025 (Laboratory standard)

or equivalent standard. An action plan (procedure for remedial steps and actions) must be in place in case the MRL is exceeded. This action plan must include communication to customers, product tracking etc.



(Schoorl, 2005)

Some examples of crop protection storage and weighing equipment, related to pesticide use, are shown above.



(Schoorl, 2005, edited by Van der Voort)

There are a great number of minor musts on crop protection storage and handling. The most important requirements are compliance with local regulations for pesticide storage, record keeping, and that facilities for measuring and mixing are present. Further requirements for the storage area is that it is secure, ventilated, fire-resistant, well lit, separated from other materials, and retain spillage.

Control points: Crop protection (7)

- Empty containers (no re-use, avoid exposure to humans and contamination of the environment)
- Dispose through authorised approved channels



(Schoorl, 2005, edited by Van der Voort)

This seventh slide on crop protection gives some control points for empty containers. Empty crop protection product containers should not be re-used. Disposal of the empty containers should avoid contamination of the environment and official collection and disposal systems should be used.

Control points: Harvesting

- Main goal: Keep the produce safe, free from contamination (dirt, glass, micro-organisms, jewellery, pests (mice, etc.)
 - Hygiene risk analysis
 - Hygiene procedures
 - Hygienic packaging, tools and machinery
 - Hand washing facilities in vicinity
 - Toilet facilities in vicinity

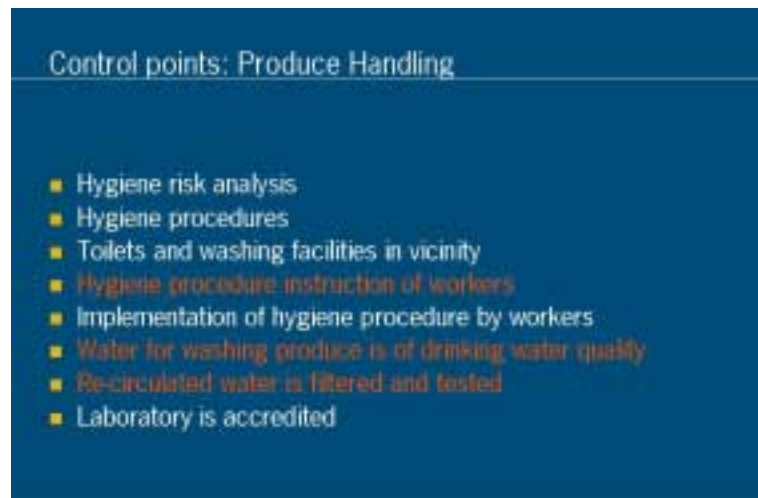


(Schoorl, 2005, edited by Van der Voort)

The following control points are related to crop harvest. The Eurep-GAP requirements on harvesting focus on keeping the produce free from pathogenic micro-organisms and chemical and physical contaminants. Contamination is a serious risk for fresh produce which is sometimes sold untreated or just washed before selling to supermarket/consumer. Handling during harvest and post-harvest are therefore critical to ensure food safety; this minimizes food safety hygienic risks. Eurep-GAP therefore requires hygiene risk analysis and hygiene procedures for facilities, personnel, machinery, and packaging materials.

Farmers should therefore have an annually checked hygiene risk analysis. Another requirement is to have hygiene procedures for packaging materials, tools and machinery. All field-packed produce must be removed from the field overnight. The storage facility at the farm must be clean, and -if applicable- temperature and humidity control must be well recorded and documented. All personnel must have access to washing and toilet facilities in the vicinity of

their place of work (within 500 meters). The control point (toilet facilities) is also required for personnel working in the field. It is not easy for farmers to comply with this control point. Some farmers tackle this problem by taking portable toilets to the field.



(Schoorl, 2005, edited by Van der Voort)

Post-harvest handling is subjected to the same hygiene requirements. A hygiene risk analysis should be drawn up for all post-harvest produce handling. Personnel are a potential source of contamination of the produce. It is therefore required that all personnel have received instruction on hygiene procedures and they act according to these procedures. Hand washing and toilet facilities must be in place to ensure good personal hygiene of the workers. Water used for washing or during handling of the produce must be of potable or similar quality. When water for washing the produce is re-circulated, this water must be filtered and disinfected, and pH, concentration and exposure levels to disinfectant should be subjected to routine monitoring.



(Schoorl, 2005, edited by Van der Voort)

Some examples of post-harvest treatment of leek are shown above. Personnel are wearing hair nets and aprons. The second picture is an example of toilet and washing facilities.



(Schoorl, 2005)

More examples related to harvest and produce handling are presented above. Harvest and post-harvest procedures are often placed at clearly visible places within the farm or facility, often at the entrance of the farm or processing area; not just for personnel but also to inform and instruct guests of the farm.



(Schoorl, 2005, edited by Van der Voort)

Any crop protection products used after harvest must be used according to the label and the use must be documented. All crop protection products used must be permitted in the farmer's country as well as in the country of destination of the produce.

Records that must be kept of post-harvest treatments are similar to those of pesticides. Produce, lot/batch, crop protection product, type of treatment, quantity, operator and justification must all be recorded.



(Schoorl, 2005)

Produce handling facilities and equipment should be cleaned and maintained according to a cleaning schedule. This should prevent contamination of produce. Documented cleaning records (cleaning schedule) must be kept.



(Schoorl, 2005, edited by Van der Voort)

The control point related to cleaning of facilities and equipment is already mentioned in the preceding slide. The cleaning products used to maintain facilities and machinery should be suitable for the food industry. Lights and other fixtures above the processing and storage area must be protected (shielded) to prevent contamination of the food by e.g. glass. Animals and pests should be kept away from handling and storage areas. Pests must be controlled by pest control measures.



(Schoorl, 2005, edited by Van der Voort)

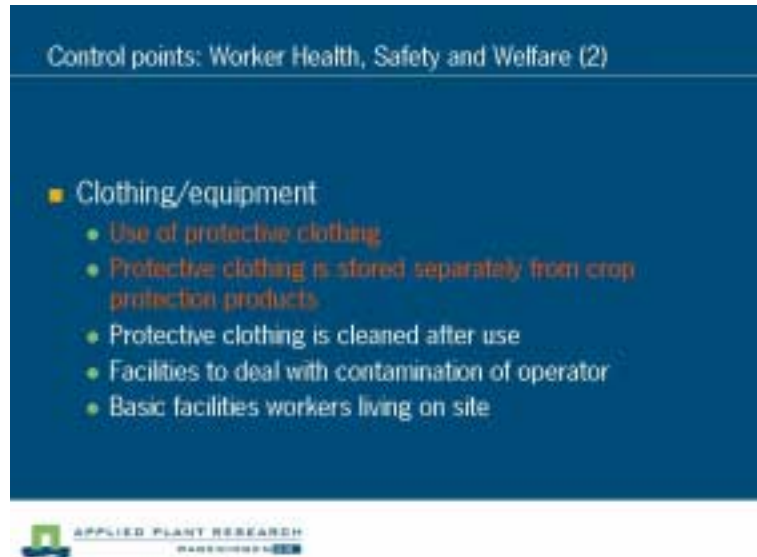
Beside food safety and Good Agricultural Practices, Eurep-GAP contains a number of requirements related to environmental and social issues such as waste and pollution management, recycling and re-use. Other requirements are related to worker health, safety and welfare.

Workers must have had training if they are operating dangerous (complex) equipment and/or if they handle and apply crop protection products. Workers must have received instructions on the procedures to be followed in case of accidents and emergencies. The instructions must be present in the predominant languages of the workforce. Where possible the instructions need to be supported by symbols.



(Schoorl, 2005)

Some examples of symbols and/or warning signs are shown above.

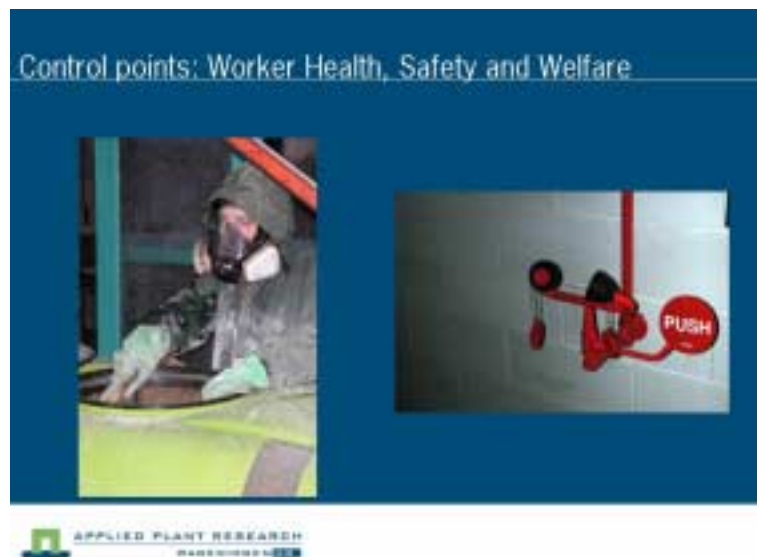


(Schoorl, 2005, edited by Van der Voort)

Two major musts are related to clothing and/or equipment. Workers need to be equipped with suitable protective clothing when they work with crop protection products. This protective clothing must be stored separately from crop protection products. There must be procedures to clean protective clothing. To cover the situation of worker contamination, eye wash facilities and clean water must be present at no more than 10 metres distance, as well as a complete first aid kit and accident procedure.

The farmer or a member of the management must be clearly identified as responsible for ensuring compliance with existing, current and relevant national and local regulations on worker health, safety and welfare issues. Visitors and subcontractors must also be made aware of the requirements regarding personal safety.

If workers are living on the farm (on-site), the living quarters must be habitable and have access to basic provisions, like toilets, drains and potable water.



(Schoorl, 2005)

Examples of protective clothing and an eye wash facility are shown above.



(Schoorl, 2005, edited by Van der Voort)

A conservation management plan must be in place for wildlife conservation. In addition, some nature conservation requirements on wildlife and conservation policy are given as recommendations. If in the future more attention is given to conservation requirements and policy, the recommendations may become minor musts.



(Schoorl, 2005, edited by Van der Voort)

The Eurep-GAP standard starts and ends with a number of general control points, which are similar to food safety and quality standards. The first control point is that all products of the farm are traceable to the farm and products can be tracked forward to the immediate buyer. Records of tracking and tracing and of all other (previously mentioned) Eurep-GAP control points must be kept for a minimum of two years.

The farmers must carry out self-inspections at least once a year against the Eurep-GAP standard. These self-inspections must be documented and recorded and, if required, corrective actions are to be documented and implemented.

The final requirement of Eurep-GAP is that a complaint form and procedure must be present on the farm.

Eurep-GAP certificate



If a farm complies with all major musts and 95% of the minor musts, it can receive a Eurep-GAP certificate. Certification is done by an independent certification institute, which has been accredited by the national board for accreditation. Approved certification bodies are given on the Eurep-GAP website.

4. Some bottlenecks in Eurep-GAP certification

This training manual is part of the Qualiman project. Another part of the Qualiman project consisted of a number of interviews to learn about the bottlenecks farmers face when they implement Eurep-GAP. These interviews were held with Hungarian and Slovak farmers.

The bottlenecks are of interest to farmers who are interested in getting Eurep-GAP certification. Governmental departments and certification institutes can also benefit from knowing these bottlenecks. A number of bottlenecks cannot be solved by the farmer alone. Assistance or efforts by either the certification institute or the government are required to solve some of the bottlenecks. The most significant bottlenecks observed by the interviewed farmers are presented below.

4.1 Complex administration

Eurep-GAP certification requires a lot of record keeping for a great number of control points. The records are used as proof for certification. The need to keep record of a great number of control points makes administrative processes on the farm more and more important.

Each farmer finds his own way in dealing with the administrative burden resulting from Eurep-GAP (also combined with legal requirements). A number of certification bodies provides its clients with own registration forms. This is a benefit to farmers, who have documents supporting their administrative requirements. Another benefit is that the certification body knows the lay-out of the forms, which can save auditing work (costs).

Eurep-GAP does not provide own registration forms as an example for farmers. Farmers can use forms drawn up by their certification body.

Some examples of forms that farmers can use are given as an appendix to this manual: a field registration list, a sales list, a purchase list, a fertilizer record sheet, and a pesticides record sheet.

4.2 MRL levels of designated countries difficult to find

The Eurep-GAP control points on crop protection product residue analysis requires knowledge of Maximum Residue Levels (MRLs) in the producing country and as these apply for the market to which the farmer intends to trade his produce. Especially the MRL information from other countries is hard to obtain. There is no central database with MRLs of all European Union states.

A possible solution for farmers is to contact the (foreign) trading partner with the request to ascertain the MRLs in the designated country and communicate these (in writing) to the farmer.

4.3 Residue analysis is expensive

MRLs require testing of samples to establish that the produce does not exceed any MRLs. Residue analysis tests carried out by accredited laboratories are expensive to farmers.

A possible solution is to combine samples (bulk) samples. The risk of this approach is that in case the MRL is exceeded, the total batch of produce is not allowed to be sold under the Eurep-GAP certificate.

4.4 Hygiene requirement

The hygiene requirement to have toilet facilities within 500 meters of the place of work causes most problems. Especially on bigger farmers there is not always a toilet within this distance. A portable toilet can be a solution but these are expensive and require extra work to take around.

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Appendix I.

Field Registration list

Name : Address : Place : Tel. no. : E-mail :	Cert. Inst. : Cert. no. : Crop : Variety : Own field no. : Total size : ha	Data rootstock Planting date : Size : Quantity : (kg/ha or number of seeds/ha)						
Supply of organic manure and/or compost etc.								
If content known, fill in								
Date:	Type of manure	Ton/ha	kg N/ton	kg P ₂ O ₅ /ton	kg K ₂ O/ton	Applied by	Method	
Supply fertilizer								
If content known, fill in								
Date:	Type of fertilizer	Kg/ha	% N	% P	% K	Applied by	Method	
Use of pesticide								
Date:	Admission number (see packaging)	Name pesticide / active substances	Dosage per ha	Treated surface (ha)	Reason for application	Safety interval (in days)	Applied by	Method

Use of pesticide										continuation				
Date:	Admission number	Name pesticide / active substances	Dosage per ha	Treated surface (ha)	Reason for application	Safety interval (in days)	Applied by	Method						
Irrigation														
Date:	Water source	Water quality	Quantity (l/ha or mm/ha)	Method of irrigation	Remarks									
Harvest date:	Harvested surface (ha)	Yield * (ton / ha)	Own plot description or remarks											
Chemical treatment during sorting/grading/storage:										(in case of insufficient lines continue on back)				
Date:	Admission number	Name pesticide / active substances	Dosage		Applied by		Method / equipment							
			per ton	total										

* - estimate

Appendix II.

Sales list

Date	Product	Quality	Quantity	Price	Buyer	Comments	Transporter	Destination

Appendix III.

Purchase list

Price													
Quantity													
Quality													
Vendor													
Sort													
Product													
Date													

Appendix IV.

Record sheet fertilizers

Date	In / out	Name/type fertilizer	Quantity

Appendix V.

Record sheet pesticides

Date	In / out	Admission number (see package)	Name	Quantity

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