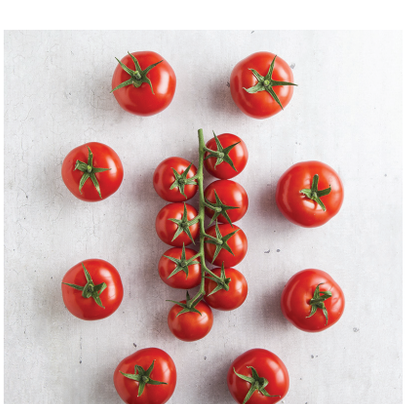
Sustainable Horticulture Assurance Scheme

Producer Standard for Growing, Packing & Produce Handling





Origin Green IRELAND Working with nature

Bord Bia Irish Food Board

Growing the success of Irish food & horticulture

Bord Bia
Irish Food Board

Sustainable Horticulture Assurance Scheme

Producer Standard for Growing, Packing & Produce Handling

Revision 01, November 2017

Bord Bia
Irish Food Board

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1. Introduction

1 Introduction

1.1 Scheme Overview

The Sustainable Horticulture Assurance Scheme (SHAS) has been developed in response to the demands of the marketplace. Increasingly customers require that products are produced from certified members of an accredited quality assurance scheme which is based on sustainability principles incorporating environmental, social and economic aspects.

Producers certified to the SHAS are actively taking part in the Origin Green Sustainability programme. As Members of the Scheme they are required to assess and record data that facilitates Bord Bia to provide constructive feedback on the sustainability of the systems in place, and to furnish metrics which can be used to assist the Producer make informed decisions aimed at improving their sustainability performance. Certification to the Scheme demonstrates that the process employed by the Producer has met the requirements of the Standard, and confirms that the Producer is committed to improving the sustainability of Horticultural production.

Audits are conducted by an independent auditor on every Member's farm at 18-month intervals and a comprehensive report is produced on the performance of the farm through the audit report and the Additional Performance Criteria Benchmark report. Members of the Scheme are required to set at least one target for performance improvement in each of the following areas per annum:

- Raw material sourcing;
- Resource efficiency;
- Social sustainability;
- Environmental / Biodiversity measures.

1.2 Scheme Development

Bord Bia operates a number of separate horticultural standards, which are being brought under the umbrella of the Sustainable Horticulture Assurance Scheme (SHAS) on a phased basis.

Each module of the SHAS is developed by a Technical Advisory Committee (TAC) representing Bord Bia, Teagasc, the Department of Agriculture, Food and the Marine (DAFM), relevant Producers and technical experts.

The modules are:

- Growing (Module 1);
- Produce Handling & Packing (Module 2);
- Distribution & Produce Handling (Module 3);
- Prepared Fruit and Vegetable (Module 4);
- Mushroom Casing Production (Module 5);
- Mushroom Substrate production (Module 6);
- Ornamental Plant Production (Module 7);
- Sprouted Seed Production (Module 8);
- Propagation (Module 9).

1.3 Objectives

The aim of this Scheme is to provide an internationally recognised quality standard for those in the business of producing horticultural products and improve the sustainability of Irish horticulture.

Food safety, product quality, traceability, environmental protection and employee welfare are core tenets of the Scheme and arise from the principles of Good Agricultural Practice (GAP), Good Hygiene Practice (GHP) and Good Manufacturing Practice (GMP).

The SHAS intends to:

- To provide a uniform mechanism for recording and monitoring quality assurance criteria and sustainability criteria for horticultural Producers;
- Define best practice in the production of horticultural produce;
- Provide a framework for horticultural production, to comply with current best practice in relation to the safeguarding of the environment and to ensure that procedures are in place to minimise the risk to the health and safety of all staff;
- Improve consumer / client confidence in horticultural produce;
- Improve trading prospects by giving Members the right to use the Bord Bia Logo and to convey, through use of the Logo, to both retailer and consumer that goods are produced to the highest standards.

1.4 Scheme Detail

Sustainable agriculture is defined as "the productive, competitive and efficient production of safe agricultural products, while protecting and improving the natural environment and the socio-economic conditions of farmers and local communities." In other words, sustainability is about ensuring that, not only do we farm efficiently but, we pass the land on to the next generation in as good or indeed better condition than when we inherited it.

In order to retain and grow long–lasting business relationships with customers, sustainability initiatives (in areas such as minimising greenhouse gas emissions, conservation of water, good soil management and improving biodiversity) are required.

The SHAS is included under Bord Bia schedule of accreditation to the European Standard for Product Certification ISO17065:2012.

1.5 Participation and Benefits

The SHAS is voluntary and application for membership is open to all Producers who wish to participate.

Certification will only be granted to Producers who meet the relevant compliance criteria and demonstrate on-going compliance with the criteria of the Scheme in subsequent audits.

On Farm Benefits

Sustainable production and efficient production go hand in hand. Sustainability involves minimising the amount of resources (e.g. energy, water etc.) used by the enterprises involved, as well as implementing measures that enhance the environmental performance of those enterprises. These sustainability measures also typically deliver economic benefits through lower costs of production.

Compliance with the Scheme enables Members to meet both regulatory and market demands and will ensure that the products placed on the market meet the highest quality and safety standards. In addition, committing to the programme will help Producers improve the enterprise's sustainability, competitive performance and contribute to a fair and safe environment for workers.

Compliance with the SHAS will be considered by DAFM's risk assessment, which determines the frequency of DAFM inspections. Therefore, compliance with the SHAS may result in a lower frequency of farm inspections / audits by DAFM for SHAS Members.

Industry Benefits

The Scheme will assist in the marketing of horticultural produce. It demonstrates the commitment of participants to 'green' farming practices. Sustainable farms will gain access to markets that demand certification.

As part of the Origin Green Sustainability Programme, sustainability assessment will be a key area of focus. The SHAS builds on previous work completed in the area of horticulture. It will enhance Bord Bia's ability to effectively communicate the current credentials of horticultural produce to key customers, and to highlight how the industry is focussing on optimising its performance in a number of key sustainability areas. This will help create a market preference for certified produce among those customers with stated sustainability targets.

1.6 Normative References for this Scheme

This Scheme incorporates the key legislative requirements relevant to the production of horticultural products. It has been derived bearing in mind the principles of the following legislation / standards in particular:

- Regulation (EC) No 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety;
- Regulation (EC) No 852/2004 on the hygiene of foodstuffs;
- Regulation (EC) No 1169/2011 on the provision of food information to consumers;
- ISO 17065:2012: Conformity Assessment - Requirements for bodies certifying products, processes and services;
- Other relevant National and EU derived legislative requirements.

Note: Compliance with this Scheme does not guarantee compliance with all relevant legislation. It is also recommended that Producers consult with their Horticultural and Industry advisors, as well as with the relevant competent authority.

Appendix 1 – Reference Information for each module provides a more comprehensive list of references specific to each module. It is also recommended that Producers consult other best practice guidelines and legislation.

1.7 Terms, Definitions and Abbreviations

Applicant: A Producer that has applied for certification to the Scheme but is not yet certified.

Audit: Where used in the Scheme documentation means that a qualified auditor will, during a Bord Bia farm visit, determine whether the auditee complies with the Regulations (as set out in the Section 2: Scheme Regulations) and the compliance criteria set out in the applicable module.

Auditor: The independent auditor carrying out the Member audits.

Bord Bia: The Irish Food Board.

Certification Committee: The Committee to which Bord Bia has devolved responsibility for all certification decisions with regard to membership of the Scheme.

Certification Scope: The certification scope is based on the module of this standard that the Producer has been audited against. The scope is awarded by the certification committee, and may reference crops, where applicable. Producers may only apply for certification relevant to their business and the general definitions of each module under the SHAS are outlined in Table 1.

Module	Description
Growing*	Growers of one or more horticulture crops for human consumption.
Produce Handling & Packing *	Growers involved in the handling and packing of fresh produce for human consumption that are grown predominantly on the Producers own farm.
Distribution / Produce Handling & Packing*	Fresh produce businesses engaged in the handling, packing and distribution of fresh produce sourced from multiple suppliers.
Prepared Fruit & Vegetable	Fresh produce businesses engaged in the further processing of fresh produce which substantially alters the product.
Mushroom Casing Production	Producers of mushroom casing to be used in the production of mushrooms for human consumption.
Mushroom Substrate Production	Producers of mushroom substrate to be used in the production of mushrooms for human consumption.
Ornamental Plant Production	Growers of ornamental plants for sale to garden centres and landscape industries.
Sprouted Seed Production	Producers of sprouted seed for human consumption.
Propagation	Producers of young plants to be used for the production of fresh produce for human consumption and/or ornamental industry.
* The certification scope for Producers undertaking audit against these modules will also depend on the range of crops produced / handled and should be communicated to Bord Bia in advance of audit.	

Table 1: Certification Scope General Definition

Certification Decisions

- **Certified**: The Producer / Applicant has been audited and certified under the Scheme for the applicable module(s) and crops.
- **Not Eligible**: The Producer / Applicant has undergone an audit and has not met the compliance criteria of the applicable module. Such Producers can re-apply by written application to Bord Bia.
- **Suspend**: Where an existing Member is declared not eligible, the Certificate may be withdrawn and the Member suspended with immediate effect. Such Producers can re-apply after a period to be confirmed by Bord Bia.
- **Continue**: Where an existing Member has undergone an unscheduled audit (or has been suspended) and is (subsequently) found to be in compliance with the Scheme, the decision of the Certification Committee is to continue certification.

Certificate Validity Period: Certificates are normally valid for 18 months based on ongoing compliance with the Scheme. Certificates can only be renewed through demonstrating full compliance as determined in subsequent audits.

DAFM: The Department of Agriculture, Food and the Marine.

FBO: Food Business Operators are defined as natural or legal persons responsible for ensuring that the requirements of food law are met within the food business under their control (EC No. 852/2004).

Formal Training: Certified training received from a national or public body or from a Bord Bia approved organisation / individual.

Fertilisers (Organic): Fertilisers derived from organic materials.

Fertilisers (Inorganic): Fertilisers produced industrially from chemical compounds.

Fresh Produce: Fresh Produce includes all produce in fresh form generally considered to be perishable fruit and vegetables for human consumption whether or not packed in ice or held in ambient or cold storage but does not include those perishable fruit and vegetables which have undergone substantial alterations (prepared fresh produce).

FSAI: Food Safety Authority of Ireland.

FSRA: Farm Safety Risk Assessment.

FSS: Farm Safety Statement.

GMOs: Genetically Modified Organisms refers to genetically modified plants.

HACCP: Hazard Analysis Critical Control Point, an internationally recognised system for the identification and control of hazards relating to food safety.

HSA: Health and Safety Authority.

IASIS: Irish Agricultural Supply Industry Standards.

IPM: Integrated Pest Management is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices.

INAB: Irish National Accreditation Board is the national body with responsibility for Accreditation in Ireland.

Member: A Producer that is certified under the Scheme and is shown in the SHAS register / database.

Module: The module contains the set of specific criteria based on the type and scope of the business. The SHAS consists of a number of different modules as listed in 1.2 above.

MRL: Maximum Residue Limits.

OMAM: The Organic Material Application Matrix provides Producers with the information needed to use organic material (manure) safety in horticultural production systems.

Pests: Pests are considered to include insects, birds, rodents, rabbits, hares or other wild animals which may cause damage to the crop.

PPE: Personal Protective Equipment.

PPPs: Plant Protection Products.

Primary Production: The growing of fresh produce including harvesting and related operations.

Producer: A horticultural Producer in any of the modules listed in Section 1.2 above.

Quality Assurance Board: An independent subsidiary board within Bord Bia which has overall responsibility for policy in relation to the operation of the Quality Assurance Schemes.

Risk Analysis: Risk analysis is the recognised process of risk assessment, risk management and risk communication.

Scheme: The Bord Bia Sustainable Horticulture Assurance Scheme consists of three elements:

- The Scheme documentation including Introduction, Regulations and applicable Module(s);
- The participating SHAS Applicants and Members;
- The system, as administered by Bord Bia, for ensuring that the criteria as set out in the Scheme are met through auditing, certification, etc. (See Section 2- Scheme Regulations).

Self-Assessment: Participants must complete a full evaluation of their activities against the requirements of the applicable SHAS modules. A copy of the requirements for each module in a checklist, will made available online (and in hardcopy where required). This must be completed prior to the audit and made available for inspection.

SHAS: The Bord Bia Sustainable Horticulture Assurance Scheme.

SHAS Register / Database: The Bord Bia register / database of the current Members indicating the membership status.

SOP: Standard Operating Procedure.

Sustainability: The productive, competitive and efficient production of safe agricultural products, while protecting and improving the natural environment and social / economic conditions of farmers and local communities.

Technical Advisory Committee (TAC): The committee that advises Bord Bia with regard to the compliance criteria, additional performance criteria, best practice recommendations and rules of the Scheme (See Section 1.1 above).

1.8 Cautionary Notes

Although every effort has been made to ensure the accuracy of this document, Bord Bia cannot accept any responsibility for errors or omissions.

Bord Bia is not liable for any costs, potential or estimated loss of earnings resulting from having to comply with any compliance criteria of this Scheme or in regard to the consequences of being found to be in breach of any compliance criteria.

The full onus of responsibility for ensuring compliance with the regulations of the Scheme and the compliance criteria of the applicable module(s) is on the Producer and not on Bord Bia, the Scheme auditors or any other third party.

All references to legislation in the text of this document are given on an “as amended” basis.

2. Scheme Regulations

2 Scheme Regulations

This section contains the regulations governing the Scheme. Applicants and Members should take sufficient time to read and fully understand this section. Applicants / Members will be required to abide by the conditions applicable to horticultural Participants as described below and outlined in the Bord Bia logo use policy.

2.1 Membership and Scope

Membership to the Scheme is voluntary and open to all Horticultural Producers involved in those activities covered by the scope of the applicable modules of this Scheme as defined in section 1.7 of the Introduction (see table 1). Participants must also be able to prove that they are registered with the competent authority for activities being undertaken relevant to this scheme.

Bord Bia operates a number of separate horticultural Standards, which are being brought under the umbrella of the SHAS on a phased basis. The update status of each module can be seen on www.bordbia.ie/industry/farmers/quality/pages/horticultureqas.aspx

2.2 Database Information

A Bord Bia database / register indicating the status of all Participants in the Scheme will be maintained. Bord Bia records all relevant / applicable data during the Bord Bia farm audit by the Auditor. All data is maintained on a confidential basis on the database in accordance with the data protection act (see Appendix 1 - Reference Information).

The Bord Bia database performs a number of functions, such as:

- Recording Participants details for contact purposes (name, address, phone numbers, directions to the farm);
- Recording the certified enterprises and crops that are produced, as relevant to the SHAS;
- Recording and collating data for the purposes of establishing the performance of the farm against the sustainability criteria or survey, etc.;
- Providing audit reports.

The Bord Bia database is linked to the Bord Bia public website in order to facilitate the publishing of the following membership information; the Participant name, certification expiry date / status, relevant Standard and scope of certification.

2.2.1 Database Access

The Bord Bia database is accessible directly by Participants for application purposes and for the purposes of providing information on closeout of audit non-compliances. Access to the database is provided only on an as-required basis. In each case, the Participants will need a username and password to be able to access the relevant information.

Access to Bord Bia documentation relevant to the Scheme (Application forms, Standard, Farm Book) is available on the Bord Bia public website, www.bordbia.ie.

2.3 Eligibility

In order to be eligible for certification, the Applicant must submit to an independent Bord Bia audit and be able to demonstrate compliance with all the applicable criteria. In addition, all records required under the Scheme must have been correctly maintained for a period of at least 3 months prior to audit for new Applicants.

Existing Members must be able to demonstrate compliance with all the applicable criteria. All required records must also have been continuously maintained in accordance with the Scheme criteria since the last audit.

Where Participants have been convicted of an offence under legislation relevant to any part of the SHAS in the previous 3 years, application for participation in the Scheme may be denied until a period of 3 years has elapsed since the date of conviction.

If, during the period of certification, a Scheme Member is convicted of such an offence, the Member is obliged to advise Bord Bia of the conviction and the membership of the Scheme may be withdrawn for a period of up to 3 years from the date of conviction. Failure to inform Bord Bia of a conviction will also be deemed a violation of the conditions of membership; in this instance, suspension for a 3-year period will apply from the date Bord Bia discovers evidence of a conviction.

Certification under the SHAS implies that the Member's horticultural production system has been determined to meet the SHAS requirements. No other implication can be drawn.

2.4 Control, Monitoring and Compliance

2.4.1 Control

Overall control of the Scheme will be exercised by the Bord Bia Quality Assurance Board. This Board is representative of the relevant sectors of the food industry and has delegated the responsibility for drafting the Standard, as well as for subsequently formulating any required amendments, to the SHAS TAC.

The decision of the Quality Assurance Board on any matter relating to the content of the Standard, or to the control or operation of the Scheme, is final (subject to Appeals Procedure see 2.8).

2.4.2 Monitoring

Monitoring of the Participant's compliance with the Standard will be carried out through audits by Bord Bia or its nominated agents. Independent Auditors with relevant experience of the sector will carry out the farm audits; a report of the audit findings will be issued directly to the Participant.

After initial certification, each Participant will be independently audited at determined intervals (see section 2.6). The maximum interval between successive audits will normally be 18 months.

Bord Bia at its discretion may offer the Participant a split audit. For a split audit the Participant would be requested to submit documentation relevant to the Scheme, to allow the assigned Auditor complete a desk review of these materials. This would be followed by the on-site element by the same Auditor to verify the documentation review and complete the remaining content of the audit checklist. The purpose of a split audit would be to reduce the length of time the Auditor will require on site with the Participant to complete the audit. When a split audit is offered, the Member can elect to have the entire audit completed on site (opt out of split audit).

Bord Bia (or its appointed agents) reserves the right to remove samples (produce, water, soil, other inputs, etc.) for independent analysis, in order to establish compliance with the Scheme.

Participants must facilitate Auditors and Bord Bia representatives by granting access to all buildings and areas of the farm that are associated with the enterprise. Where this access is not granted, certification may be denied.

Participants must also supply any information requested by the Auditors relevant to establishing compliance with the Scheme. Auditors are entitled to seek access to relevant regulatory reports.

Bord Bia will occasionally require the performance of the Auditor to be observed during a given audit. This will be communicated in advance to the Participant.

Bord Bia reserves the right to withhold or cancel membership of the Scheme where an Auditor is physically or verbally abused by the Participant or his/her representatives or subjected to any form of intimidation.

2.4.3 Compliance

The full onus of responsibility for compliance with this Scheme is on the Scheme Participants, and not on Bord Bia, its agents or any other third party.

Where it is established during audit that there are serious breaches of legal requirements relevant to food safety, use of banned inputs, environmental protection or health, safety and welfare, Bord Bia reserves the right to notify the relevant authority.

2.5 Criteria Categories, Compliance and Non-Compliance

2.5.1 Compliance Criteria

The compliance criteria where compliance is required (text on clear background in the applicable Module) are classified as Critical or General.

Critical: These criteria are printed in bold, underlined typeface and are identified in the text as (**Critical**). These relate to areas of high significance (e.g. food safety and traceability).

General: These criteria are printed in normal typeface in the text (in the applicable Module). They relate to core best practice.

2.5.2 Additional Performance Criteria

Additional Performance Criteria (APC) are identified through blue text (within the applicable module). Growers will be required to complete a mandatory survey of these Additional Performance Criteria (made available online). Participants will receive feedback / suggested measures for improvement following the submission of a completed APC survey. Compliance with these criteria is not required for certification to the Scheme.

2.5.3 Compliances / Non-compliances

During audit the Auditor will identify the performance against the compliance criteria as follows:

Compliance: There is full compliance with the criterion (e.g. the record is available, correctly completed and up to date) and the performance is rated as 2;

Minor non-compliance: The criterion is being met in some respects, but not in other respects (e.g. there is a record, but several entries are incorrect or missing) and the performance is rated as 1;

Major non-compliance: There is a complete failure to meet the criterion and the performance is rated as 0;

Not applicable: The criterion does not apply to the scope of activities on this farm.

2.5.4 Application of Non-Compliances

To be eligible for certification, following an audit, the Participant must:

- Have achieved full compliance with all Critical compliance criteria;
- Obtain a score of 75% or greater in the General compliance criteria;
- Close out all major non-compliances (if any) against General compliance criteria.

Note: Close out evidence can be provided using the Bord Bia database or through direct communication with the Auditor.

Depending on the nature of the non-compliance and the corresponding response, an on-site verification of the corrective action may be required, and the associated costs borne by the Participant.

Where there is a score of less than 75% against General criteria, the Participant will be required to have a follow-up audit in order to verify corrective action on all non-compliances, the cost of which must be borne by the Participant.

For certain criterion (identified with within the module), the criterion must be met in all respects and a performance of 1 will not be permitted (i.e. a minor non-compliance will not be allowed). If the criterion is not fully met the performance will be rated as 0.

2.5.5 Types of Non-Compliances

Non-Compliances against Critical criteria

Participants must comply with all applicable Critical criteria in order to be eligible for certification. Members against whom a Critical non-compliance has been raised cannot be certified and cannot continue to supply product under the Sustainable Horticulture Assurance Scheme. The Auditor will immediately advise Bord Bia of the situation and where relevant (existing Members) the certification may be suspended pending a review of the situation.

Note: The Member can re-apply when evidence is available that the problem has been rectified.

Major Non-Compliances against General criteria

Where a major non-compliance has been identified it must be closed out in the period as agreed between the Participant and the Auditor (maximum 2 months).

Evidence of the closeout of each such major non-compliances must be uploaded to the Bord Bia database. This evidence will be reviewed by Bord Bia and if it is acceptable and closeout is deemed to have been completed, the audit can be considered for certification.

Minor Non-Compliances against a General Criteria

Where minor non-compliances are identified, the Participant must give an undertaking to address these issues prior to the next audit. Bord Bia reserves the right to verify, through unscheduled audit, that the corrective actions are being implemented.

Where more than 25% of applicable criteria have a minor non-compliance raised against them, the Participant will be required to have a follow-up visit in order to verify close out of non-compliances, the cost of which must be borne by the Participant.

2.6 Application, Audit and Certification Process

2.6.1 Application

Applicants seeking membership must initially apply in writing (or online at www.bordbia.ie), using the application form provided. Applicants should also note that separate declarations will be required to be signed at commencement and end of audits (See Appendix 2 – Participant Declaration).

The scope is based on the module (and crops, where applicable) that the Participant wishes to complete an audit under. Participants may only apply for certification relevant to their business and the General definitions of each module under the SHAS are outlined in Section 1.7. The scope will be identified at registration and verified at audit but should include all applicable horticultural crops grown by the Participant.

2.6.2 Membership Fee

In General, one fee per Member will apply. The membership fee is calculated depending on the:

- Scope of the audit;
- Range of crops produced (where applicable);
- Size and type of production area (e.g. hectares, covered/not covered);
- Number of production sites (where applicable).

Each separate business entity will be certified separately. Where a second audit or a follow-up audit is required to close out non-compliances arising from the first audit, a separate fee will apply. Only Applicants and Members who have paid the appropriate fee will be audited. Existing Members will be required to complete a registration renewal form annually, approximately five months prior to the certificate expiry, which must be returned to Bord Bia with the correct fee.

2.6.3 Audit Scheduling

For announced audits the Auditor will contact the Applicant / Member to set up the date and time of the audit. The Applicant / Member will be contacted a maximum of three times in order to make the arrangements. If a date cannot be agreed by the third communication, it will then be the responsibility of the Applicant / Member to contact the Auditor by a specified date. If the Applicant / Member does not contact the Auditor, it will be assumed that the Applicant / Member does not wish to participate in the Scheme and he/she will be removed from the current year's list. An administration fee will be retained, and the remainder of the registration fee will be returned to the Applicant / Member.

If the Applicant / Member has any difficulty regarding availability during normal working hours, he/she should inform Bord Bia or the Auditor. For cancellations within 48 hours of the arranged date of audit an administration fee will apply. Audits must take place during a period when product(s) are being produced, or otherwise handled on the site and for first audits it is necessary that harvesting is included as part of the audit (if applicable to the scope).

First Audit and Certification

The application will be evaluated and processed upon payment of the appropriate fees, if appropriate; a full independent audit will be carried out to determine if the systems in place meet all the requirements of the Standard.

The Participant must provide full records that comply fully with the requirements of the Scheme for the 3 months immediately prior to the audit.

When the Participant is deemed to comply with the requirements of the Standard, as determined by independent audit, the Participant will be considered for certification under the Scheme. If certified, the Participant will be issued with a certificate of compliance and will be listed as a Member on the database and public website.

Renewal Audit / Renewal of Certification

The certification is normally for an 18-month period. Existing Members will be contacted to arrange a re-audit approximately 4 months prior to the expiry of the current certification. This period is to ensure that there is adequate time to complete the audit process and any required close-out (maximum 2 month close out period) prior to the expiry of the current certificate. Where the re-audit cannot be arranged (e.g. the Member cannot be contacted or refuses to collaborate in arranging a re-audit), membership of the Scheme will be withdrawn, and the Participant notified.

Unscheduled Audits

Bord Bia (or its appointed agents) reserves the right to carry out supplementary unscheduled audits for the purpose of verifying compliance with the Standard, or in order to determine that corrective and/or preventive actions submitted after audit closeout are in place. Where a Participant has been selected for an unscheduled audit they will receive a maximum of 48 hours' notice prior to the audit. In cases where the Participant is unable to take the audit Bord Bia must be informed as to the reason and it will review the circumstances on a case by case basis. The outcome of this review will be to defer the audit or withdraw certification. Refusal or repeated failures to accept an unscheduled audit may lead to withdrawal from the Scheme.

Note: Auditors with appropriate sectoral experience will carry out these audits against the applicable criteria and a report will be issued to the Member after each audit.

2.7 Certification Decisions

The decision regarding certification for each Participant will be made by the Bord Bia Certification Committee. This decision will be made primarily on the basis of the audit findings and analyses results (where applicable) but other factors, which may be recorded by the Auditor or may come to light after the audit (including failure to meet regulatory requirements or previous audit history), will be taken into consideration in arriving at the certification decision.

The following certification decisions can be made:

Certify Where the Certification Committee grants certification, the Member is informed in writing that his/her certificate is renewed or, for new Members to the Scheme, that certification is granted. The Members List in the QS Database is updated, and a new certificate is issued.

Not Eligible Existing Members: If the Certification Committee judges that the requirements of the Scheme are not met the Member is removed from the Members List in the QS Database, which automatically invalidates the certificate, and is immediately advised in writing of the decision and their right to appeal/re-apply.

New Applicants: If the Certification Committee decides that the Applicant is Not Eligible, certification is not granted. The Applicant is immediately advised in writing of the decision, and the reason for the decision and the right to appeal.

Suspend A suspend decision is made based on:

- Non-compliances raised at an unscheduled audit;
- Notification to Bord Bia of an event or an issue deemed to be a serious risk to food, animal welfare, personnel or environmental safety or to the integrity of the Quality Assurance.

On suspension of a certificate the Participant is removed from the active Member's list in the QS database and is immediately advised in writing of the decision and their right to appeal/re-apply. A suspension may be lifted within a 3-month period where the Participant provides evidence that the issue has been satisfactorily close out.

- The certification is resumed with the original expiry date.
- If after the 3-month period, the non-compliance has not been rectified the certification is permanently withdrawn and can only be reinstated through a full audit.

Continue Where an existing Member has undergone an unscheduled audit (or has been suspended) and is (subsequently) found to be in compliance with the Scheme, the decision of the Certification Committee is to continue certification.

Where the Certification Committee grants certification, the Member / Applicant is certified based on the scope of the enterprise and the module(s) that the Participant was audited against. For current Members, an extension of the certification scope, to include additional products, can be requested by contacting Bord Bia. An extension of the scope may or may not require an additional audit; this will be determined by Bord Bia on receipt of an application. For further information, please contact Bord Bia.

All certification decisions are notified in writing to the Participant and a certificate is made available online. The decision is published on the Bord Bia database and the current status of the Participant can be verified by entering the Producer number in the following link: https://qas.bordbia.ie/hort/Verify.

The certificate can be downloaded and used as evidence of certification under the SHAS, but may not be used for any other purpose without the permission of Bord Bia. In the event that certification is no longer valid, the certificate must be returned, the Participant will be removed from the register of Members and the Participant cannot continue to supply product under the Scheme.

Certificates are issued under the following conditions:

- Members may make claims regarding certification only in respect of the scope for which the Participant has been certified;
- Certification is not used in such a manner as to bring Bord Bia into disrepute and Members must not make any statement regarding the certification which Bord Bia may consider misleading or unauthorised;
- No certificate, report, or any part thereof may be used in a misleading manner;
- Members must comply with the criteria of the Bord Bia Scheme where reference is made to Bord Bia certification in any communication media (e.g. documents, brochures, advertising, etc.).

2.7.1 Certificate Validity Period

Certification is normally granted for an 18-month period after the date of certification, or until the next certification decision. Based on the circumstances of the audit (including the number and type of non-compliances, the timeliness and comprehensiveness of the closeout provided), the Certification Committee may, at its discretion, grant certification for a shorter period than normal (i.e. less than 18 months).

- **Initial validity period**: valid for 18 months (maximum) from the certification decision date.
- **Subsequent validity period**: valid from the date of expiry of the previous certificate. Where the previous certificate has expired longer than 4 months, a new certification period will begin from the new certification decision date.
- Where a scheme Member's certification expires or is withdrawn, or the Participant voluntarily withdraws from the Scheme, the Participant can re-apply.
- Where a certificate is allowed to expire, the Member will be informed by post of the expiry and the name / details will be removed from the Members List on the active website.

2.7.2 Certificate Extension

Bord Bia may extend the validity period of a certificate for a maximum of 4 months for the following reasons:

- In order to schedule the audit to coincide with an important process related to the enterprise such as harvesting;
- For resource management reasons (Availability of auditors, alignment of multiple QA scheme audits);
- Where the Participant is unable to submit for audit due to extenuating circumstances, in such cases Bord Bia will review the circumstances on a case by case basis before making a decision to extend;
- Where a certification expiry is imminent, and the Member has already begun the audit process an automatic 8-week extension is granted to allow time for the process to be completed. This extension may be increased up to a maximum of 4 months.

Where a Certificate has been extended, any subsequent certificate (where granted) will be valid from the certification decision date and will expire 18 months after the expiry date on the original certificates. The new certificate will override any previous certificates.

2.8 Appeals

The Participant may appeal decisions in relation to certification status by writing to Bord Bia within two weeks of the date of issue of a certification decision.

Bord Bia's Appeals Procedure will be followed and where necessary, the matter will be referred to Bord Bia's Appeals Committee. The decision of Bord Bia's Appeals Committee is final, however, this does not affect the Participant's right to refer the issue to the Ombudsman for consideration. Contact can be made at:

Office of Ombudsman, 18 Leeson Street Lower, Dublin 2, D02 HE97

Tel. 01-6395600; Fax. 01-6395674;

Email - ombudsman@ombudsman.gov.ie

Website: www.ombudsman.gov.ie

2.9 Complaints

The Participant may complain with regard to the audit or any other aspect of the operation of the Scheme. All complaints must be in writing and must be addressed to Bord Bia. All such complaints will be acknowledged and investigated by Bord Bia.

If a Participant is unhappy with the result of the investigation into the complaint, they may request to have the matter referred to a higher level in Bord Bia by writing to the Quality Assurance Appeals Committee. See section 2.8 Appeals.

2.10 Insurance

Members must have adequate public liability insurance. All Applicants will be required to sign a Membership Agreement with Bord Bia that includes an undertaking to comply with the requirements of the Scheme and with relevant legal, indemnity and insurance requirements.

2.11 Use of the Bord Bia Logo

If a Member wishes to use the Bord Bia Logo to promote the enterprise, the Member will be required to:

- Formally apply for permission to use the relevant Bord Bia Logo;
- Formally undertake to only use this Logo in a manner agreed with Bord Bia and in full accordance with the Logo Use Policy, published on the Bord Bia website, www.bordbia.ie.

2.12 Revision Updates

Applicants / Members should note that only the current status of each module can be seen on www.bordbia.ie/industry/farmers/quality/pages/horticultureqas.aspx

In order to promote continuous improvement, the SHAS will be fully reviewed on a five-year basis, or upon any changes to applicable regulations, wide spread changes to industry practices, or other issues which may necessitate changes to requirements in the Standard.

When future changes occur, existing Members will be notified of any updates in whole or in part and the obsolete sections will no longer apply. New Applicants can request the latest applicable modules directly from Bord Bia or by visiting the Bord Bia website.

2.13 Notification of Change

In the event that the ownership, structure, management or any significant changes affecting compliance with the Scheme occur for existing Members of the Scheme then Bord Bia must be immediately informed.

Module 1: Growing

M1. Growing Module

Module Introduction

The Bord Bia Sustainable Horticulture Assurance Scheme (SHAS) is a voluntary scheme open to all producers of product relevant to the applicable modules of the Scheme. The Standard (and the scheme based on the standard) is accredited to the International Standard for Product Certification ISO 17065:2012 by the Irish National Accreditation Board.

This module contains the specific criteria for Growers of one or more horticulture crops for human consumption.

The certification scope for Producers undertaking audit against this module will also depend on the range of crops produced and should be communicated to Bord Bia in advance of audit.

A qualified auditor will, during a Bord Bia farm audit, determine whether the auditee complies with the compliance criteria set out in this module.

Abbreviations / Definitions specific to this module

For a full list of definitions and abbreviations relevant to the SHAS please refer to Section 1.7 in the Scheme Introduction.

Produce Handler: An individual grower, company or other organisation that is involved in the packing of fresh fruit and vegetables under the Scheme that were grown predominantly on the Grower's own farm.

CHP: Combined Heat and Power

Distributor: An individual, company or other organisation sourcing produce from multiple growers, that is involved in the produce handling, packing and distribution of fresh fruit and vegetables.

PHT: Post-Harvest Treatments

PCS: Pesticide Control Service of the Department of Agriculture, Food and Marine (DAFM).

RTE: Ready-To-Eat crops means food intended by the producer or the manufacturer for direct human consumption without the need for cooking or other processing effective to eliminate or reduce to an acceptable level micro-organisms of concern. (Note - Placing a "Wash before eat" notification on a product does not preclude it from being Ready-To-Eat).

SMC: Spent Mushroom Compost (Substrate)

Module Layout

This Module sets out the various criteria in panels as follows:

Background Text

The blue text sets out the context of the subsequent criteria in the sub-section and is presented for information purposes only.

Compliance Criteria

Black text on a clear background sets out the compliance criteria under which the Producers compliance (will be assessed. These are numbered a), b), c), etc. Compliance with these compliance criteria (as set out in full detail in the Scheme Regulations) is required to be eligible for certification under the scheme as a Horticulture Producer.

Additional Performance Criteria

Additional performance criteria are identified through green text (numbered P1 to P49). Growers will be required to complete a mandatory survey of these Additional Performance Criteria (made available online) and any subsequent highlighted measures that would improve the performance of the enterprise should be considered by the Grower. The information provided will be verified during the Bord Bia farm audit.

Compliance with these criteria is not required for certification to the Scheme.

Note: A brief summary of the above layout can be seen at the bottom of each page within this module.

Part A: General Management

Background Information

Food Business Operators (FBO), including primary producers, are responsible for the safety of the food they place onto the market. Legislation requires that the FBO puts in place, implements and maintains procedures to control hazards which pose a risk to food safety. Certification to this Scheme will assist the FBO meet this obligation. The main pieces of legislation governing these obligations are Regulations (EC) 178/2002 and (EC) 852/2004 which established that food safety is the primary responsibility of the FBO and outlines the general rules to be met in order to ensure that the food is safe. These Regulations are given effect in Ireland by S.I. No. 432 of 2009. Other food legislation relevant to primary producers is listed in Appendix 1. It is incumbent on the Producer to ensure compliance with all relevant legislation.

M1.1 Risk Assessment

Background Information

Through the process of Risk Assessment, the food producer identifies the hazards specific to the production process, analyses the risks associated with these hazards and demonstrates how and at what point in the process these hazards are managed, and by whom.

a) Producers must conduct and document a Risk Assessment of their production system. At a minimum, this should include:

   i. A list of all relevant steps in the production process for each crop, up to pre-farm gate release;

   ii. Identification of the possible hazards and associated risks with each step, including microbial, physical, chemical and allergen hazards;

   iii. Identification of the measures[1] (controls) that the Producer has put in place to mitigate against the risk;

   iv. Identification of the person responsible for implementing the measures;

   v. Scheduling of, at a minimum, an annual review of the Risk Assessment plan and undertaking of a review of the Risk Assessment plan in the event of any change that might affect the risk on your farm (e.g. new crop, new process, etc.) in order to ensure that it is relevant and effective.

Note: Please contact Bord Bia for access to a free online Risk Assessment tool which will help you meet the criteria above.

[1] Measures to consider contamination arising from the air, soil, water, feed, fertilisers, plant protection products and biocides and the storage, handling and disposal of waste. (Ref. EC No. 852/2004)

M1.2 Site Assessment

a) All new and existing sites (growing unit, house, tunnel, field, or group of contiguous fields) must be assessed for suitability prior to use or re-use and records maintained.

b) There must be a map identifying the production units on the farm (e.g. fields, orchards, polytunnels and plots) and a method of cross-referencing the production unit to the map must be established and the size of each production unit must be recorded.

Note: Please see M1.7.s, M1.32.b.ii, M1.35.c for other criteria where features are required to be included on a map.

M1.3 Production Planning and Control

a) Records for each crop must be available, maintained and up to date, recording the production unit and all activities related to the crop production. (See template Crop Record)

b) Where propagation takes place on site, records must be kept and be available to staff responsible for propagation.

M1.4 Seed / Planting material[2]

Background Information

Growers should be aware of the importance of selecting quality seed or plants for use in crop production. Seeds and planting material, if contaminated, may be a means by which microbiological hazards can be introduced to the growing area for fresh fruit and vegetables. Benefits of using quality seeds/planting material can include more predictable and higher yields, lower weed and disease rates, better response to fertilisers and nutrients and higher quality final produce.

Genetically modified organisms (GMOs) can be defined as organisms (i.e. plants, animals or microorganisms) in which the genetic material (DNA) has been altered in a way that does not occur naturally by mating and/or natural recombination. (http://www.who.int/foodsafety/areas_work/food-technology/faq-genetically-modified-food/en/). Currently seed/planting material containing GMOs are not used in the Irish horticulture sector. As such, Irish horticultural growers do not produce fresh produce containing GMOs. However, in 2014, the Irish Government voted in favour of the European Commission compromise proposal that would allow individual member states to ban GMO crops subject to many conditions.

a) Each batch of seed or plants must be traceable to the supplier. The following information must be recorded (See template Raw Materials Receipt Record):
   i. Variety name;
   ii. Batch number / other reference;
   iii. Vendor.

[2] Sprouted Seed and sprout production are not included here. Please refer to specific Sprouted Seed Module when available.

b) Potato growers must plant only DAFM certified pre-basic or basic seed potatoes or one year's direct progeny of such potatoes (where the direct progeny was grown by themselves). ✓

c) Potato growers must retain official DAFM seed potatoes labels as well as sales notes, delivery notes, invoices or similar documents for at least three years as proof of origin. ✓

d) Purchased stock plants must be accompanied by the relevant certificates (such as plant passports) and certificates must be retained for a minimum of three years.

e) For all seeds/planting materials Producers must:

   i. Consider resistance to pests and disease;

   ii. Not plant invasive species;

   iii. Carry out visual inspection to ensure quality before use.

M1.5 Substrate (Growing Media) Management

Background Information

A substrate/plant growing medium other than soil is a material which provides plants with nutrients oxygen and anchorage. A substrate may be formulated to propagate plants either through seed sowing or vegetative propagation methods, or to promote the growth of plants to maturity. The material may be organic in nature such as peat, composted bark, coir, wood fibre or composted organic materials (including composted green waste or manures). A plant growing medium may also contain inorganic materials such as rockwool, perlite, vermiculite, grit, sand, expanded clay, pumice or sterilised soil. The substrate may be composed entirely of one material for example a peat-based substrate or rockwool. Also, it may contain a mixture of organic or inorganic materials in various quantities. Such substrates should comprise chemical and microbial characteristics that promote and assist the growth and development of plants.

Peat is an important natural resource which acts as a carbon sequestration bank and a significant contributor to biodiversity. A considerable body of research work has been under taken to identify alternatives to the use of peat. However, an equivalent material for use in commercial horticulture has proven elusive to date. In the event that a commercially viable and sustainable alternative to peat were to become available, Members and Applicants would be expected to have a peat replacement strategy in place, and operating within a reasonable timeframe.

a) Mushroom growers must use mushroom casing and/or substrate sourced from a Bord Bia certified Producer or equivalent[3], and records maintained.

b) Where growing media / compost is purchased or produced on site it must be included in the Risk Assessment and controls implemented in order to prevent contamination of the product.

c) Where peat is used on site, evidence must be available that it was supplied or extracted by a company that is compliant with local and National regulations in relation to Peat extraction.

d) Where chemical sterilisation of a growing substrate is practised, the use must be recorded in the Pesticides Usage Records. (See criterion M1.14.c)

[3] From a certification body with ISO 17065 accreditation

Note: Please see section M1.7 for a full list of the compliance criteria associated with water used as a substrate.

e) Where thermal treatment is used in growing substrate sterilisation, it must be effective, included in the Risk Assessment and a record must be maintained of the following:

   i. Date;

   ii. Operator Name;

   iii. Temperature achieved;

   iv. Time period exposed.

f) Where plant growing substrates are reused, sterilisation must be carried out.

Information on the following will be collected by survey:

P1 The policy of re-use of growing media (e.g. rockwool) when used for a single crop production (e.g. tomato crop).

Note: Re-use of this material to a second growing unit for use with an alternative crop (e.g. cucumber crop) should be considered.

P2 The use of peat free or peat reduced plant growing media.

P3 Where peat is used as part of the production system, the policy of:

- establishing plans and setting targets to reduce reliance on peat based substrate (e.g. Reduction in volumes used, substitution of peat re-use of spent substrate, etc.)
- supporting / keeping abreast of research into peat alternatives for horticulture growing media
- sourcing substrate materials from suppliers involved in actions that promote sustainably managed resources e.g. suppliers certified to Responsibly Produced Peat Scheme.

M1.6 Soil Management

Background Information

Soil health is fundamental to horticulture production. The capacity of the soil to meet the requirements of a crop is dependent on is its physical, chemical and biological properties. The management of these properties affects the health of the crops grown and the soil's ability to consistently sustain its productivity. Soils which have been mismanaged tend to have poor structure, low organic matter and poor aeration; qualities which result in lower crop establishment and poorer yields. It is essential to assess the health of the soil in the new fields prior to planting. The soil type should be able to meet the needs of the crop, and sustainable soil management techniques such as adequate crop rotation, minimal tillage, ploughing in crop residues, etc., should be used.

a) An effective soil management system must be implemented to maintain soil condition, safeguard soil health and control crop pests and diseases (e.g. crop rotation, routine addition of organic matter).

b) Soil analysis (including organic matter content) must be conducted on new production areas and analysis results less than 4 years old must be available for existing sites in order to design targeted nutrient programmes.

c) Where chemical soil fumigation is used, an assessment of the alternatives to this method must be conducted.

d) The Producer must identify the soil types on site, (e.g. from soil profile, soil analysis, regional cartographic soil-type maps or online databases), noting this information on crop records, and using it to help with production planning and to plan crop rotation.

e) The Producer must monitor field conditions and take appropriate action to minimise soil erosion / poaching or compaction.

Information on the following will be collected by survey:

P4 The policy of considering the effect of pesticides applied to crops on soil fauna, microflora, soil structure and biodiversity.

M1.7 Water Management

Background Information

Producers will be aware that water is an important vehicle for the introduction of hazards (e.g. pathogenic bacteria, viruses and parasitic organisms such as cryptosporidium). There is increasing evidence worldwide linking water to the contamination of fresh produce. The risks to food safety posed by these hazards need to be considered and addressed.

Under current legislation the use of clean or potable water must be used in the production of primary products whenever necessary to ensure that foodstuffs are not contaminated. The term 'potable water' refers to water fit for human consumption as defined in S.I. 122 of 2014. Where possible potable water should be used in the production process, however, this is not always possible. 'Clean' water is water of such quality that it will not contaminate the product. Clean water can be used by a grower if it can be demonstrated that the water does not contain microorganisms, chemical contaminants or other harmful substances at levels that could affect the safety of the produce[4,5]. The limits for levels of Escherichia coli (as an indicator of faecal contamination), which determine the suitability of water for an intended for use in the primary production of fresh produce, as established by national guidelines[6] are used for the purposes of this module.

The level of risk depends on several factors including: source of water (surface, ground, recycled, mains, etc.), method of application during irrigation (overhead, furrow, drip, etc.), the activity (irrigation, washing, misting, etc.) and the type of crop (ready-to-eat, sometimes eaten raw, always cooked). Wider conditions which can affect the quality of the water should also be considered, such as ongoing local water quality issues, flooding or pollution events, boil notices issued, farming practices in areas surrounding water sources and type and construction of borehole. For example, surface water is generally prone to temporary or intermittent contamination due to discharges of (treated) wastewater, storm water runoff, livestock or wild life faeces.

Risks to the safety of the product from water must be identified and assessed prior to use, and where possible, measures put in place to control the hazards which lead to them. Where the identified risks are deemed unacceptable and where there is no reasonable control possible, an alternative water source must be used.

Growers will be aware of the importance applying water from sustainable sources in an efficient and cost-effective manner, while ensuring environmental protection of natural resources. Water should be sourced from a supply where there is enough water under normal (average) conditions.

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[4] **European Commission (2004**) Regulation (EC) No 852/2004 on the Hygiene of Foodstuffs

[5] **European Commission (2012)** Guidance Document on the Implementation of Certain Provisions of Regulation (EC) No 852/2004 on the Hygiene of Foodstuffs

[6] **FSAI (2016)** Guidance Note 31, Fresh Produce Safety in Primary Produce Production

a) A risk assessment must be conducted and recorded for all water sources used in the production system to identify:
   i. Hazards;
   ii. Risk of contamination;
   iii. Need for potable/non-potable (except for activities listed in M1.7.e);
   iv. Frequency of analysis of water sources;
   v. Scope of analysis of water;
   vi. Other control measures.

Note: See Bord Bia Water Risk Assessment Tool for further information.

b) There must be a documented and implemented water management plan in place.

Note: This could outline measures to increase water use efficiency, monitoring of water usage, describe soil water measurement tools / equipment, identify (on a map) all sources of water in, out and stored on site and outline the irrigation needs of crops.

c) Analysis of all water sources used in the production system (irrigation, washing, etc.) must be conducted at least once per year, with the frequency of further testing to be determined by risk assessment (or as specified in legislation) and records maintained.

d) Where risk assessment determines the need for use of potable water the analysis must include, at a minimum, those microbiological and chemical parameters listed in Appendix 5 and any other parameters as indicated by the risk assessment.

e) Potable water must be used for the following activities:
   i. Cleaning and sanitation of product contact surfaces;
   ii. Water coming into contact with product during storage (e.g. misting, cooling and water transport systems);
   iii. All washing of leafy greens, herbs and berries;
   iv. Final rinse water of all fresh produce (secondary washing);
   v. Drinking water provided for staff.

f) Where water analysis results are outside specification as established by the risk assessment, an alternative compliant water supply must be used immediately, and corrective measures must be taken. The original supply may only be reused when it has been demonstrated to be compliant, and a record maintained of this remediation.

g) The Grower must have a policy on sustainable water use and re-cycling.

Note: See Bord Bia sample "Sustainable Water Use Policy"

h) Water samples for analysis must be taken aseptically at the point of use and where water is stored in holding tanks on site, samples must be taken at a point downstream from these tanks.

Note: See Bord Bia "Guidance note on aseptic sampling"

i) Water samples must be tested in a laboratory accredited to ISO 17025 for the specific microbiological tests.

j) Where the water supply is derived from well(s), the well-head(s) must be sealed and the area around the well-head(s) maintained to prevent water contamination.

Note: See EPA Drinking Water Advice Note No. 14: Borehole Construction and Wellhead Protection for more information

k) Potable and non-potable water supplies must be clearly distinguished in order to prevent inadvertent use of non-potable water.

l) Potable water storage tanks must be fit for purpose, covered to prevent pest entry and contamination, and must conform to the following specification:

   i. Fitted with an inspection hatch;

   ii. Water inlet at the top of the tank (to prevent sediment disturbance);

   iii. Water outlet at the bottom of the tank;

   iv. Fitted with screened vent pipes.

m) Water supply/storage capacity (i.e. quality and volume) must meet the requirements of the production system in place.

n) Effective maintenance of irrigation systems, water storage systems and infrastructure must be employed to prevent contamination, water leakage and losses with maintenance records maintained.

o) Where recycling of irrigation/fertigation water is in operation measures must be in place to prevent contamination of the crop.

p) There must be appropriate facilities for the handling and disposal of waste water (e.g. produce washing) so as not to cause pollution to the environment, water bodies or ground water and evidence must be available to demonstrate that waste water is disposed of in compliance with current legislation. ✓

Note: See relevant regulations set out in S.I. no. 31 of 2014 EU Good Agricultural Practice for Protection of Waters Regulations 2014.

q) Irrigation/Fertigation water or water used in the application of pesticides must be managed in a manner that will not cause pollution to the environment, water bodies or ground water.

r) Appropriate measures must be in place to prevent contamination of clean or potable water from contaminated water in lines and tanks (e.g. through back-flow valves, etc.).

s) A map for all sources of water on the site indicating, input, storage, potable water and waste water must be in place. (See Sample Farm Map)

Note: Please see M1.2.b, M1.32.b.ii, M1.35.c for other criteria where features are required to be included on a map.

Information on the following will be collected by survey:

P5 The use of potable water for the irrigation of ready-to-eat (RTE) crops (in which water comes into contact with the edible portion of the produce), for the 2 weeks prior to harvest.

P6 A contingency plan is put in place, which identifies an alternative water supply in case of supply failure.

P7 Water used for post-harvest washing flows counter current to the fresh produce flow to prevent cross-contamination.

P8 The utilisation of efficient and commercially practical water delivery systems to ensure the best utilisation of water.

P9 The application of water conservation measures on site, such as rain water harvesting and recycling.

M1.8 Fertiliser Storage, Usage and Records

Background Information

A fertiliser is a material either in solid or liquid form which provides nutrients for plant growth and development. The fertiliser may be organic in nature for example agricultural manures or composted organic materials. A fertiliser may also be formulated as a result of an industrial process, for example the production of nitrogen fertilisers from natural gas or the mining and purification of rock phosphate to produce phosphorus fertilisers.

The proper management and handling of fertilisers is critically important in reducing the risk of contamination. Management should take into account: site selection, storage and treatment, crop requirements, inherent soil fertility, timing, land spreading practices, record maintenance, etc.

Land spreading of farm manures and broadcast application of inorganic fertilisers are potential sources of windborne contamination. Good agriculture practice requires growers to consider weather conditions before application, to ensure that surrounding areas and sensitive receptors (residential areas, nearby crops, watercourses, etc.) are protected.

The Organic Material Application Matrix (OMAM) contained in Appendix 4, provides further information on the safe use or organic material (manure) in horticultural production systems.

Fertiliser Storage

a) Fertiliser storage must comply with the following requirements:
   i. Solid fertilisers must be stored in a manner that poses no risk of contamination to the environment;
   ii. Liquid fertilisers must be stored in bunded or secondary containment tanks.

b) Fertilisers must not be stored with pesticides or flammable materials.

c) Fertiliser storage must be controlled with hazard signs that are clear, permanent and visible.

Fertiliser Usage

d) Documented evidence (e.g. soil/plant tissue analysis, technical advice) must be available to demonstrate that fertiliser application practices are based on the nutrient requirements of the crop (i.e. Crop Nutrient Management Plan).

e) The person responsible for determining fertiliser application practices must be able to demonstrate competence to do so, by having a minimum of 5 years relevant on-farm experience in crop production or appropriate training / qualifications.

Note: Record of training / qualification required under criterion M1.46.b

f) Evidence must be available to demonstrate that fertiliser is applied in a manner that minimises risk to human health, animal health and the environment (e.g. application record, implementation of buffer zone, map of watercourses, etc.)

g) Growers must apply organic manure in compliance with the organic material application matrix (OMAM) in Appendix 4, and records maintained must include the following:
   i. Source of organic material;
   ii. Material composition;
   iii. Age of manure;
   iv. Storage conditions (storage period & whether outdoor/indoor);
   v. Treatment Method.

h) To avoid the contamination of surface waters and well water with animal manures, Producers must implement a buffer strip between water resources and the manure application area as follows:

Resource	Buffer Width
Watercourses	5 metres*
Lakes and main rivers	20 metres
Domestic Wells / Public Water Supply Sources	25 metres
**The 5-metre buffer zone is increased to 10 meters for a period of two weeks preceding and two weeks following the period of when application of fertilisers to land is prohibited as set out in Schedule 4 of the Regulations.*	

Table M1.1: Buffer zones for spreading of organic fertilisers (From S.I No. 31 of 2014)

i) **Raw or treated sewage sludge must not be used on horticulture production units. (Critical)** ✓

Information on the following will be collected by survey:

P10 The measures in place to prevent unintentional cross contamination from fertiliser (e.g. the use of low trajectory equipment, buffer strips, etc.)

P11 The use of organic materials (composted FYM, crop debris, etc.) as soil improvers, where available, to ensure the effective re-use of plant nutrients.

P12 Incorporation of nitrogen (N) fixing crop, green manures or green cover to reduce chemical fertiliser application and conserve soil nutrition.

P13 Consideration of controlled release fertilisers, partially soluble nutrient sources (e.g. rock sulphate) to minimise run off.

Fertiliser Records

j) Fertiliser inventory records must be maintained, and these must detail the quantities of fertiliser in and out of the store.

k) Evidence must be provided detailing chemical content, including heavy metals, for all inorganic fertilisers used on crops.

l) A documented recording system must be implemented for fertiliser application and records (including sub-contractor applications) must include the following information (See Template Crop Record):

i. Date (for field crops, or when added to container growing media);
ii. Location (field, etc.);
iii. Crop;
iv. Fertiliser type (composition);
v. Fertiliser quantity applied;
vi. Method of application (drill, incorporated into a peat compost, liquid feed, etc.);
vii. Applicator's name (non-computerised systems).

m) Where fertigation is in operation, records of the schedule must be available for each crop, which includes the composition and timing and any deviation noted.

n) Fertiliser records must be maintained for a period of 5 years.

o) The fertiliser application equipment must be kept in good condition and calibrated on at least an annual basis (to ensure accurate fertiliser application) and records of such maintained.

M1.9 Pollination (Commercial Bumble Bees)

Background Information

Effective pollination is essential for fruit set in top fruits (e.g. apples), soft fruits (e.g. strawberries) and fruit vegetables (e.g. tomatoes). Optimising fruit set is required to ensure maximum marketable yield in such crops. Large scale crop pollination can be achieved by the use of bumblebees, which are available in commercial quantities. However, the importation of non-native bumblebees poses potential risks to the flora and fauna of Ireland. Imported bumblebees can spread exotic weed seeds, new pests and new diseases. They can also interbreed with native bees and alter the genetic makeup of these populations. To ensure sustainable crop production and to preserve native bumblebees, ideally only commercial colonies of such bees, which are bred from bumblebees native to the island of Ireland, should be used in crop pollination. Precautions must be taken to protect the native flora and fauna. Records of the importation, use and management of bumblebee colonies must be kept. Proper management of the hive will help ensure sustainable populations of native bees and will assist producers in getting the most effective pollination for their crops. This includes the timing of the termination, and disposal, of the hive. From week 8 onwards, the effectiveness of the pollinators reduces significantly, and most of the hive's energy at this time is directed at breeding. Therefore, it is best to pre-empt breeding within the hive, by terminating the colonies at week 8.

a) A written protocol, detailing the introduction, management and disposal of bumblebee colonies must be maintained.

b) Bees must be sourced through a supplier registered with DAFM. ✓

c) If the colony contains non-native bumblebees, it must be fitted with a queen excluder that remains in place, in order to prevent the queen leaving the hive.

d) Each purchase of bumblebee colonies must be accompanied by the health certificate issued by the Competent Authority in the EU Member State where the bees originated, and this health certificate must confirm the health status of the colonies (in accordance with EU legislative requirements), and also that the food within the hive has been irradiated / sterilised. ✓

Note: The health certificate can be an original or a photocopy stamped by the importer or an electronic copy of the original issued by email by the importer.

e) Bumblebee usage records must be maintained detailing; the supplier, date of purchase/supply, quantity purchased, and method of disposal and date of disposal.

Information on the following will be collected by survey:

P14 The use of colonies bred from native bees.

Note: Where possible only use bumblebee colonies bred from native bees. For outdoor crops, those in open polytunnels and field cloches, efforts should be made to use bumblebee colonies bred from native bees.

P15 Non-native bumblebees are not used for outdoor crops because of the likelihood of cross contaminating other native species or interbreeding (in particular, using bumblebees during June/July, a period when native species are very active).

P16 Commercial bees (where used) are terminated 8 weeks after introduction, using an appropriate method (e.g. freezing at -18oC) as per Animal Health & Welfare Act 2013.

P17 The hive, including the food, is disposed of in a manner which minimises the risk of passing on diseases to other insects. (The preferred method is to kill the bees by freezing, then burn both the bees and the hive. Where burning is not allowed, land filling is the next best option.)

P18 The process used in the introduction of bees.

Note: It is recommended that the bees are only introduced at times when pollination is needed. Where there is an extended pollination period, several hives in succession will be required.

P19 The consideration given to improving wild pollinator populations as a potential replacement for commercial bees (e.g. through enhancing nesting habitats, considered pesticide application, minimising interaction with commercial bees)

PART B: Pesticide Management

M1.10 Integrated (Crop) Pest Management (IPM)

Background Information

The Grower will be aware of the need to implement appropriate methods of crop pest and disease prevention, to observe and monitor pest activity, to best apply pest management techniques and to intervene when appropriate to prevent crop damage by pests. Growers will consider non-chemical approaches where possible.

Integrated Pest Management (IPM), as defined in the Directive 2009/128/EC for the sustainable use of pesticides, means careful consideration of all available plant protection methods and subsequent integration of appropriate measures that discourage the development of populations of harmful organisms; keeping the use of pesticides and other forms of intervention to levels that are economically and ecologically justified; and reducing or minimising risk to human health and the environment. IPM emphasises the growth of a healthy crop, with the least possible disruption to agro-ecosystems, and encourages natural pest control measures.

An IPM approach is based on prevention, observation and monitoring.

Prevention can be implemented by the adoption of cultivation methods that reduce the incidence and intensity of pest attacks, thereby reducing the need for intervention. The aim of observation and monitoring is to determine when, and to what level, pests and their natural enemies are present. This information is then used to plan what pest management techniques are required. In situations where pest attack will adversely affect the economic value of a crop, it may be necessary to intervene with specific pest control methods, including the use of pesticides. However, where possible, non-chemical approaches, such as the use of varieties that possess resistance/tolerance to pests and diseases, should be considered.

Prevention measures

a) An effective pest, disease, and weed prevention and control programme must be in operation, which does not interfere unduly with habitats for natural predators, pollinators and records must be available to demonstrate the implementation of the programme.

Observation and monitoring

b) Growers must monitor pest and disease incidence patterns and other contributory factors (e.g. weather conditions) in order to determine optimum and appropriate pest management techniques.

Intervention

c) Growers must ensure that appropriate intervention (non-pesticide, where possible) is undertaken where a current or predicted pest/disease attack will adversely affect the economic value of the crop.

d) The Producer must put in place measures to minimise pesticide use. (See DAFM IPM and Pesticide Application Record)

Note: These steps should be implemented, based on accurate monitoring and effective control of pests and diseases.

M1.11 Pesticides Usage

Background Information

A 'pesticide' is an agent that prevents, destroys, or controls a harmful organism ('pest') or disease, or protects plants or plant products during production, storage and transport. The term includes, amongst others: herbicides, fungicides, insecticides, acaricides, nematicides, molluscicides, rodenticides, growth regulators, repellents and biocides (http://ec.europa.eu/food/plant/pesticides).

All pesticides approved for use on plants in Ireland, are authorized by the Pesticide Registration and Control Divisions (PRCD) of the Department of Agriculture, Food and Marine (DAFM), see Appendix 1 Reference Information. It is a legal requirement for producers to comply with pesticide regulations. PPPs include, fungicides, herbicides, insecticides, biocides etc., including post-harvest treatments. A list of approved pesticides for specific crops can be found on the Pesticide Control Service website: http://www.pcs.agriculture.gov.ie/db.htm

The Sustainable Use Directive (Directive 2009/128/EC), is the EU Directive which sets the rules for the sustainable use of pesticides to reduce the risks and impact of their use on people's health and the environment. Statutory Instrument S.I 155 of 2012 puts this legislation into Irish law.

Growers will be aware of the need to ensure that all pesticides are stored in an appropriately designed and secure place, segregated from any out-of-date pesticides (awaiting disposal) and other on-farm chemicals.

Pesticides must only be handled by trained operators, using appropriate personal protective equipment (PPE) and following manufacturers' recommendations at all times. Advisors on the use of pesticides must have the appropriate training/certification and be registered with DAFM.

Spraying equipment must be regularly calibrated to ensure correct application to the crop. Equipment must also be maintained in a condition that ensures the operator is protected from any possibility of contamination with pesticides.

Growers will be aware of the importance of triple rinsing, or pressure rinsing, empty chemical containers prior to disposal, and will ensure that the disposal of expired product and empty containers is carried out using a licensed hazardous waste contractor.

Growers are aware that detergents and other chemicals used in the sanitation process are food grade, and Safety Data Sheets, for each product, are available.

Water used to apply pesticides has been known to be a source of contamination of fresh produce crops. Contamination from this source must be controlled by the producer.

Note: The following sections M1.11 to M1-16 apply to all activities/stages where pesticides are used.

a) **All the pesticides applied must be officially registered and must be approved for use in Ireland on the crops to which they are applied. Pesticide usage must be based on reference to the PCS website listing[7] (Critical).** ✓

b) Pesticides must only be used according to the conditions (timing, rates, etc.) laid down in the official approval, and stated on the label or off-label approval, as applicable.

c) Pesticide application must be based on pest/weed threshold levels and/or disease pressure.

[7] http://www.pcs.agriculture.gov.ie/

d) Producers must complete the DAFM 'IPM and Pesticide Application Record' on an annual basis and the most recent record must be available for inspection.

Note: This record and guidance on implementing IPM can be found on www.pcs.agriculture.gov.ie or Annex III to the Sustainable Use Directive (2009/128/EC).

Note: Please refer to Criteria M1.14.d in this module for the full list of headings required in the Pesticide usage record.

e) Pesticides must be procured from DAFM registered distributors. ✓

f) Water used to apply pesticides must be included in the Risk Assessment and measures taken to ensure the crop is not contaminated, as a result of its use.

g) The person responsible for determining pesticide application must be able to demonstrate competence to do so, by having a minimum of 5 years relevant on-farm experience in crop production or appropriate training / qualifications.

h) Where an external advisor is the person responsible for determining pesticide application practices must be registered with DAFM as a Pesticide Advisor. ✓

Note: Record of training required under criteria M1.46.b.

i) Only DAFM registered spray operator(s) may apply pesticides. ✓

Note: Record of training required under criteria M1.46.b.

j) Aerial spraying of pesticides, where used, must only be conducted by a licenced operator. ✓

k) Pesticides must not be used within the distances to surface water sources[8] used for human consumption summarised in Appendix 1 Reference Information (taken from schedule 2 of S.I. 155 of 2012).

l) Pesticides must not be applied in the following areas:

   i. Within 15 metres of a landscape feature that is known to be a vulnerable ground water area including karst areas, sinkholes and collapse features;

   ii. Areas used by the general public or by vulnerable groups[9];

   iii. A European Site[10].

m) Pesticide application methods must ensure that field margins, wildlife corridors and farm tracks are not inadvertently treated during application to crops.

n) Precautions must be taken to prevent drift to adjacent sensitive areas or non-target crops.

o) Exclusion periods (i.e. personnel re-entry after application of product) must be implemented in accordance with manufacturer's recommendations.

[8] 'Surface water' means inland waters including reservoirs (except groundwater; transitional waters and coastal waters, except in respect of chemical status for which it shall also include territorial waters.)

[9] 'Vulnerable groups' means persons needing specific consideration when assessing the acute and chronic health effects of pesticides. These include pregnant and nursing women, the unborn, infants and children, the elderly and workers and residents subject to high pesticide exposure over the long term.

[10] European sites include sites of community importance, special areas of conservation and special protection areas.

p) Where pesticides have been applied, the Producer must ensure that no produce is harvested before the first permissible harvest date.

Information on the following will be collected by survey:

P20 The pesticide application methods in place and the evaluation and implementation of measures to reduce the amount of pesticide used where possible.

P21 The selection of pesticides based on the effect on target & non-target species, resistance risk, persistence in the environment and ultimate environmental fate (breakdown products).

M1.12 Transporting Concentrated Pesticides on or between sites

a) Where pesticides are transported on and between sites, it must be done in a safe and secure manner in order to prevent harm to humans or the environment and the following requirements (at a minimum) must be observed:

i. Pesticides must not be transported in the same cabin as people, pets, animal feed or fresh produce;

ii. In order to prevent a leakage escaping into the vehicle, or into the environment, liquid pesticides must be transported securely inside a container or bund large enough to contain the liquid, were it to leak;

iii. The appropriate PPE must be transported in a separate sealed container;

iv. A first aid box, including eyewash, must be transported with the pesticide;

v. A spill kit for small spills must be transported with the pesticide.

M1.13 Pesticide Storage

a) Pesticides must be stored in a dedicated storage facility, of appropriate size.

b) Clear signage (using internationally recognised symbols where necessary) identifying the location of the pesticide store, as well as the precautions that must be taken when in the vicinity of or using pesticides, must be permanently displayed in a prominent location at the entrance to the store.

c) The store must be:

i. Located away from the areas used for the collection and sorting of harvested produce, living quarters, fuel and waste storage;

ii. Of sound structure and enclosed;

iii. Fire resistant;

iv. Secure/locked and access restricted to authorised personnel only;

v. Ventilated (if walk-in) to avoid build-up of harmful vapours;

vi. Well lit;

vii. Capable of containing the volume of liquid within the store plus 20% (e.g. using tanks/trays/bunding), to ensure that there cannot be any leakage, seepage or contamination to the exterior of the store;

viii. Equipped with shelving and work surfaces that are made of non-absorbent material, and fitted with anti-slip flooring that can be easily cleaned and is resistant to chemical attack.

d) A list of relevant telephone numbers useful in the event of an accident must be maintained, and this list must be displayed in the pesticide store and at least one other location (See Appendix 7 for further guidelines).

e) All pesticides must be stored in their original packaging, unless in the event of breakage, when the label information must be retained or recorded on the new container.

f) All pesticides must be segregated in the following way:
   i. Flammable products separated from non-flammable;
   ii. Powders stored above liquids;
   iii. Water soluble packs kept away from sources of moisture;
   iv. Obsolete pesticides labelled and segregated to prevent unintentional use.

g) Appropriate safety information must be retained for all pesticides used, and must be accessible to all relevant employees (e.g. safety data sheets (MSDS), Instructions for Use, labels, etc.).

h) The following must be available within 10 metres of the pesticide store and access must not be obstructed:
   i. An emergency wash;
   ii. A first aid kit (see criterion M1.39.c);
   iii. Appropriate grade fire extinguisher;

i) The pesticides store must be equipped with an eyewash station or in-date eyewash.

j) There must be appropriate equipment for clearing up small spillages or leakages (e.g. bucket of sand, brush, etc.).

k) Dedicated measuring equipment (measures, weighing scales) for pesticides must be available, clearly labelled, and controlled to prevent other uses.

M1.14 Pesticide Records

a) A pesticide store inventory record must be kept up to date in the store, which clearly indicates the substances and quantities or volumes stored, and an additional copy of this record must be kept outside the store.

b) All purchases of pesticides must be recorded and the following information retained for each product purchased:
   i. Name and address of the supplier;
   ii. Brand name;
   iii. PCS number;
   iv. Quantity (pack size and total quantity);
   v. Date of receipt.

Note: This does not need to be a separate document - invoices containing this information will suffice.

c) A usage record must be maintained for all pesticides used on site (including those applied by sub-contractors) and must be retained for a period of 3 years (Critical). ✓

d) The following information must be recorded in the Pesticide Usage Record:
   i. Product Name;
   ii. PCS Number;
   iii. Location;
   iv. Crop / Substrate;
   v. Area / Tonnage treated;

vi. Pesticide application rate / amount applied;

vii. Date Applied;

viii. Pre-planting/harvest interval;

ix. First permissible harvest date;

x. Justification for use

xi. Operator Name.

Note: The pesticides usage record should correspond with the harvest record.

e) A record of each pesticide returned for disposal/refund must be available, and the following information retained:

i. The name of the company/contractor to which the product was returned, or the name of the licenced disposal company or organisation;

ii. Confirmation that the company is licenced to dispose of hazardous waste (products returned for disposal only);

iii. The brand name of each product disposed of or returned;

iv. The PCS number of each product disposed of or returned;

v. The date of return or disposal of each product;

vi. The quantity of each product disposed of or returned (kilograms or litres).

M1.15 Pesticide Disposal / Returns

a) All empty pesticide containers must be:

i. Triple rinsed, crushed and/or pierced to prevent re-use[11];

ii. Appropriately stored, labelled and handled, pending disposal;

iii. Disposed of using a licenced waste contractor (or the supplying company) and records maintained.

Note: Please refer to DAFM / EPA guide on 7 Steps: Good Practice Guide for Empty Pesticide Containers.

b) Any surplus spray mix must be stored pending safe disposal.

c) Expired / obsolete pesticides must be:

i. Labelled for disposal;

ii. Segregated within the store;

iii. Disposed of through an approved chemical waste contractor or the supplying company.

M1.16 Personal Protective Equipment (PPE) and Spraying Equipment

a) Spraying equipment must be in good repair and calibrated at least annually (to ensure accurate application) and calibration records maintained.

[11] See "Storing and Using Plant Protection and Biocidal Products" and "Good practice guide for empty pesticide containers" issued by DAFM/EPA

b) Boom sprayers (in excess of 3m wide), orchard and blast sprayers must be independently inspected and certified to ensure compliance by a registered DAFM inspector[12] at least every 5 years up to January 2020 and at least every 3 years after that. ✓

Note: New sprayers do not require a certificate until 5 years after date of purchase.

c) When handling or using hazardous materials protective clothing and respiratory equipment, as recommended by the manufacturers, must be used, and when not in use must be stored in a separate enclosed area, away from chemicals, food produce or other contaminants.

d) Respiratory equipment must be available to staff for crop spraying and must be clean and in good repair.

e) Respiratory equipment for spraying must be designed for the products in use as well as the method of application and the relevant components must be within expiry dates (e.g. filters).

Information on the following will be collected by survey:

P22 The use of GPS, drift reducing nozzles or other advanced control systems, to ensure precision application of pesticides, to reduce their use and to minimise excessive spraying (overlapping areas).

[12] List available on www.pcs.agriculture.gov.ie/SUD.htm

PART C: Harvesting

M1.17 Harvesting: General Requirements

a) Producers must include all harvesting activities, including on-farm transport of product, within the overall Risk Assessment.

b) Producers of ready-to-eat crops must have a documented and implemented harvest hygiene procedure (See Sample Hygiene Procedure).

c) Harvest records must be maintained for all production units (e.g. fields, orchards, polytunnels and plots) and must include the following information:

   i. Product harvested;

   ii. Harvest date (or date of first harvest, where appropriate);

   iii. Batch code or other identifier;

   iv. Field or growing structure;

   v. Total yield or quantity harvested for that production unit (for reconciliation purposes).

d) Windfall fruits (such as apples and pears) that have come into contact with the ground must not be used as fresh produce or juiced products.

Information on the following will be collected by survey:

P23 The practice of leaving all crop trimmings and plant organic debris in the field (for subsequent incorporation in ploughing) during harvesting and grading operations.

M1.18 Produce Packed Directly at Point of Harvest

a) Harvested product and harvest containers must be kept off the ground.

b) Reusable harvest containers must be kept clean, used exclusively for harvested product and must not contaminate the harvested product.

c) Harvested product must not be left in the field / growing unit overnight.

d) Where there is short term storage of packed product at the farm, the stores must be fit for purpose, clean and the product must be stored in such a manner as to avoid contamination.

e) Any packaging waste, or other non-produce related waste, must be removed from the harvesting area (i.e. field/house/tunnel, etc.).

M1.19 Harvest Machinery and Equipment

a) All harvesting tools, equipment and vehicles must be kept clean to prevent contamination.

b) Where knives or similar tools (e.g. secateurs) are used for harvesting purposes, a system must be in place that will notify the Grower of loss or damage, and records maintained.

c) Field rigs must be in good repair and structurally sound to prevent contamination of product or compromise of product quality.

d) Where packing is conducted on field rigs, the packed produce must be kept off the ground.

Information on the following will be collected by survey:

P24 The tyre pressure monitoring and maintenance program on tractors, harvesters and transport trailers to maximise fuel efficiency and/or minimise soil compaction.

M1.20 Packaging and Packaging Storage

a) All packaging materials that come in contact with the product must have a certificate of suitability / conformance from the manufacturer and materials traceable back to the supplier.

b) Packaging materials must be kept clean and free from contamination.

c) Packaging materials must be stored in accordance with the following requirements:

   i. Stored in a dedicated area/room;

   ii. Kept off the ground/floor at all times;

   iii. Protected from potential contaminants;

   iv. Kept covered, where necessary.

d) Access to the packaging store must be controlled.

PART D: Post-Harvest Management

M1.21 Post-Harvest Produce Handling

a) Producers must have a documented and implemented procedure for post-harvest produce handling, which ensures the quality and safety of the product up to pre-farm gate release.

b) The relevant staff must have been trained in the post-harvest handling procedures.

Note: Record of training required under criteria M1.46.b.

M1.22 Post-Harvest Washing

a) Where Growers wash product prior to packing they must have a documented and implemented washing procedure to prevent contamination of the product.

b) A final rinse using potable water must take place prior to packing.

Note: Please see Section M1.7 for requirements associated with water used in the final rinse.

c) Producers must have a system for removing excess / free water from fruit and vegetables, after washing, and before processing / packaging.

d) Solid waste materials must be removed and disposed of in an appropriate manner.

M1.23 Post-Harvest (Pesticide) Treatments (PHT)

a) All applications of PHT must be recorded and the following information must be recorded:

i. Product used & PCS No.;
ii. Treatment date;
iii. Crop batch number (or other identifier);
iv. Interval between treatment and consumption ('utilisation interval');
v. Usage rate;
vi. Extent of use (area treated, volume of water treated or volume/weight of harvested crop treated);
vii. Quantity used;
viii. Justification for use;
ix. Operator name.

Note: Please see Section M1.7 for requirements associated with water used in the application of post-harvest treatment.

M1.24 Product Sampling

a) Where microbiological testing of product is carried out then the evidence of the testing must be available.

b) Where testing has been conducted and an MRL or microbiological limit exceeded then the following steps must be taken:

   i. Recall or withdrawal of product where necessary;

   ii. Notification (where recall/withdrawal deemed necessary) to the competent authority and Bord Bia;

   iii. Investigation of the reason for the exceedance;

   iv. Implementation of measures to prevent reoccurrence.

Note: Bord Bia reserves the right to sample produce for analysis, for control and monitoring purposes.

Information on the following will be collected by survey:

P25 The routine pesticide residue analysis carried out on produce, at a frequency based on Risk Assessment, and the laboratory used for sampling accredited to ISO 17025 for the appropriate method with results in compliance with MRL tolerance[13].

P26 The microbiological and chemical testing of product conducted, as determined by Risk Assessment and/or legislative requirements, and the ISO 17025 accredited laboratory where testing is taking place.

[13] EU Regulation 396 of 2005 controlling pesticide residues in food

M1.25 Transport of Harvested Product

Background Information:

Fresh produce must be adequately protected during transport to prevent damage and contamination. The type of containers used to transport fresh produce depends on the nature of the food and the conditions under which it has to be transported. Fresh produce may become contaminated, or may reach its destination in an unsuitable condition for consumption, unless effective control measures are taken during transport, even where adequate hygiene control measures have been taken earlier in the food chain. Where cold chain is required to maintain the quality and safety of the produce, it is the responsibility of both the producer and the transporter to maintain the required conditions during transport.

a) A clearly established system must be in place that prevents contamination/damage of the product during transport, loading and unloading (this includes the manner of transport and the hygiene/suitability of transport vehicles).

b) An effective cleaning and maintenance programme must be in place for all transport vehicles and cleaning records maintained (see vehicle cleaning & inspection record templates).

c) Records must be maintained to demonstrate the effectiveness of temperature control (where required) appropriate to the product during transit.

d) A contingency plan must be in place to deal with refrigerated delivery breakdown.

Water Transport Systems

e) The Grower must ensure that any water transport systems, where used, do not pose a contamination risk to the product and the transport system must be assessed as part of the risk assessment.

f) An effective system for removing excess/free water from produce, after water transport and before processing/packaging must be in place.

g) Solid waste materials within water transport systems must be removed and disposed of in an appropriate manner.

Part E: Hygiene and Security of Facilities and Equipment

Background Information

It is important that the farm meets a satisfactory level of cleanliness and tidiness, to maximise efficiencies and to prevent contamination of the product.

It is essential that organic material, spent compost/substrate, used containers, plastics and all general waste, are controlled on site and that documentation is kept on their disposal. Weeds growing between buildings and growing houses provide breeding sites for crop pests and diseases. Disused machinery and equipment provide harbourage sites for pests. Buildings on the site should be secure to prevent access by pests, and access should be restricted to authorised personnel. Domestic and feral animals and livestock need to be controlled, so as not to pose a threat to the crop and the harvested product. As with the management of crop pests, a pest control programme for the site requires an integrated approach which includes prevention, monitoring and observation, and treatment. The pest control, in particular rodent control, treatment itself, must be managed in such a way so as to avoid contamination of the product, the environment and other sensitive organisms.

M1.26 Growing House Structures

a) Growing houses / growing structures must be clean, fit for purpose and free from materials that may pose a contamination risk to the product.

b) Where glass houses / polytunnels are in use, the glass / plastic must be maintained clean and in good repair to ensure optimum light levels are achieved for food safety and quality purposes and records kept.

M1.27 Product Storage and Cold-chain Facilities

a) For all product storage and cold-chain facilities an effective cleaning programme to prevent contamination of the product must be in place and cleaning records maintained (See template Cleaning Schedule & Record).

b) For buildings where produce is stored the following apply:
   i. Kept in good repair;
   ii. Openings must be sealed, or protected to prevent animals (such as rodents, birds, pets, wildlife, etc.) entering.

c) The store/cold room/fridge door must also open from the inside.

d) Cold-chain facilities must have adequate lighting to permit the efficient movement of materials.

e) Where required on the basis of Risk Assessment, finished produce must be kept covered to minimise possibility of contamination.

f) Finished produce must be stored off the ground to minimise possibility of contamination.

g) Cold-chain facility temperature records must be maintained and up to date.

Information on the following will be collected by survey:

P27 The heat loss reduction measures in place for cold room stores. (e.g. – Insulation, Rapid action doors, heat efficient pack systems, heat recovery, advanced heating controls)

M1.28 Exterior Areas

a) The site must be free of any accumulated rubbish, and be clear of any obstructions and machinery that might attract or be potential breeding sites of vermin.

b) All necessary fencing and boundaries must be maintained intact (e.g. fencing for security and safety purposes around reservoirs).

c) The grounds must be kept free of stagnant water.

d) Farm and domestic animals must be controlled to prevent contamination of the produce.

e) The apron / yard area must be fit for purpose and maintained in good repair.

Information on the following will be collected by survey:

P28 The application of buffer areas, physical barriers, fences, etc. to prevent unauthorised access of humans and animals to the growing and packing areas.

M1.29 Site Security and Visitors (including sub-contractors)

a) Producers must ensure that before entry to the site, all visitors and subcontractors are required to sign a visitors book acknowledging that they are:

   i. Aware of safety procedures;

   ii. Aware of the hygiene procedures;

   iii. Understand and are willing to observe biosecurity measures.

Note: See Illustrative Visitors Policy

b) Access to growing, production, cold chain and storage facilities must be restricted to appropriate personnel.

c) A sign/Signs containing the following information must be displayed at a prominent location on entry to the site:

   i. Please observe the biosecurity measures;

   ii. A farm safety statement is available on request;

   iii. No unauthorised access.

d) The following signage must be on display throughout the site, where appropriate:

   i. Hygiene;

   ii. Health & Safety.

e) Producers must ensure that recognised symbols/signage are used where staff cannot read English.

Information on the following will be collected by survey:

P29 The security of growing, production, cold chain and storage facilities outside operation hours.

M.30 Waste Management and Recycling

a) Producers must have a documented and implemented procedure for the management of organic and inorganic waste (e.g. fertiliser bags), which ensures that it does not pose a contamination risk to the product or environment, and evidence of the implementation of this procedure must be visible on site.

Note: Please see EPA booklet "Farming the Environment" for guidance on waste management and a sample waste management checklist.

b) Waste must not be allowed to accumulate on site.

c) Potential pollutants (silage, fuel, oil, waste materials, etc.) must be stored appropriately to prevent pollution and spread of disease.

d) Waste containers used at the growing unit must be:

   i. Clearly identified so they cannot be mistaken for produce containers;

   ii. Available at appropriate locations and be of appropriate size for the facility;

   iii. Regularly/routinely emptied to prevent overloading.

e) Producers must ensure that only licenced waste hauliers are used for waste collection and records of collection agreement maintained.

f) Where organic wastes are composted on the farm all measures must be taken to minimise the risk of contamination of the product.

Information on the following will be collected by survey:

P30 The planning and implementation of measures to prevent, reduce, reuse and recycle waste where possible (See Sample Waste Management Policy).

P31 The system for identification, segregation and compaction of waste streams.

M1.31 Glass Breakage Record and Procedure

a) A documented and implemented procedure for handling glass/hard plastics breakages must be in place for all growing, produce handling and storage areas.

b) Where glass/hard plastics are present, a register must be maintained, and all items inspected, at least monthly and records of breakages maintained.

c) Where used, light fittings must be protected by shatterproof materials, to avoid possible contamination of produce and packaging.

M1.32 Site Pest Control

a) There must be an effective pest control programme to ensure food/product safety.

Note: Please see the recommendations made in the CRRU Ireland best practice requirements for rodent control and safe use of rodenticides.

b) A rodent baiting programme, where used, must reflect the label instructions for the rodenticide selected, and include the following:

i. Measures to ensure bait is not exposed to non-target species, and does not contaminate product or water;

ii. Measures to ensure that, where used, all bait stations are secured and clearly identified on a site map;

iii. Record of regular inspections and replenishment of bait points;

iv. Measures to ensure that only products with a valid PCS number are used;

v. Schedule of routine collection of dead rodents and safe disposal as per product label instructions.

Note: Please see M1.2.b, M1.7.s, M1.35.c for other criteria where features are required to be included on a map.

c) Where baiting supplies are stored on site, the store must be kept locked.

d) Where Electronic Fly Killers are in use:

i. They must be located away from packaging equipment or packaging operations;

ii. They must not be located close to or above exposed unpacked product;

iii. Light tubes must be shatterproof;

iv. Bulbs must be changed at frequency as determined by the manufacturer's instructions.

e) Producers must review the effectiveness of rodent prevention / control systems, which should consider an assessment of bait takes and location of bait points. This review must be conducted on an annual basis at a minimum.

f) Where an external pest control contractor is not used, staff involved in the control of pests must have formal training in creating an effective pest control program and the handling of rodenticides where used, with records maintained.

M1.33 General Equipment / Tools Maintenance

Background Information

Preventative maintenance and timely service of equipment used in the production process, prevents more costly repairs in the future and will also help to reduce the risk of contamination of the product. Failure of equipment during crucial times in the season, can be very costly to a business and can adversely affect the quality and safety of the product. Equipment calibrations and checks help ensure the accuracy of the process, which is an important aspect of cost control and environmental protection. Implementing a properly controlled maintenance and calibration programme will help prevent equipment failure before it occurs and help ensure accuracy of process.

a) All equipment (e.g. crates, trolleys, buckets, knives, secateurs, size gauges, scales, boilers etc.) used in any production related activities, must be clean, fit for purpose and effectively maintained according to a procedure and schedule and records maintained.

b) Where water is used to clean equipment, it must be included in the water Risk Assessment.

c) Work surfaces and containers used for harvested crops must be made of non-splintering material (exception made for wooden bulk containers that are in good condition) that is easy to clean, and the cleaning of such surfaces and containers must be included in the cleaning schedule and records maintained.

Information on the following will be collected by survey:

P32 The equipment maintenance program in place to reduce breakdowns and to prolong the useful life of all equipment.

M1.34 Control of Measuring Equipment

a) All produce monitoring and measuring equipment (weighing scales, thermometers, etc.) in use must be uniquely identified.

b) A programme for the calibration (at least annually) of all measuring equipment used as a reference for operational checks must be in place where the calibrations are traceable to National standards.

c) A calibration record must be maintained up to date which includes:

   i. Identity / location;

   ii. Current use / purpose of the equipment;

   iii. Calibration frequency and responsibility;

   iv. Operational checking (e.g. start-up checks for functionality) to ensure continuing accuracy.

d) When a device is found to be out of calibration, an assessment must be made of the validity of previous results and the likely impact of inaccurate results and the appropriate corrective actions must be determined and recorded.

e) Operational checks must be conducted on monitoring and measuring equipment at a frequency determined by the Producer and commensurate to the risk, to ensure continuing accuracy.

PART F: Environment

Background Information

Producers should be aware of good maintenance procedures/good practices as set out in this Standard and adhering to the relevant planning legislation for any new buildings.

Horticulture production impacts the surrounding environment. It is essential that producers have a responsible attitude toward conservation and preservation of the countryside and local wildlife and plant habitats, in order to make the impact a positive one. The first step is to determine the impact the business has on the surrounding area, and from this assessment, introduce actions which will mitigate any negative effects, enhance the local ecosystem and help increase biodiversity.

Responsible management and good practice regarding the use of farm chemicals, including fuel, fertilizers etc., and the use and disposal of growing media/substrates, will help prevent pollution to groundwater, water courses, air and wildlife and plant-life habitats. Management and judicial use of fertilisers will not only help the soil and the environment, but will result in reduced cost to the producer.

The criteria below are in addition to the Environmental Protection criteria integrated throughout the Standard.

M1.35 Environmental Protection

a) A risk assessment must be conducted identifying any pollution risks, and measures implemented to control these risks (e.g. wastewater from washing of produce on site).

Note: See relevant regulations set out in S.I. no. 31 of 2014 EU (Good Agricultural Practice for Protection of Waters) Regulations 2014.

b) All fuel stored on site must be in fully bunded facilities or double skinned tanks (with outlet protected where gravity fed tanks are used), in order to minimise the risk of spillage and/or contamination in the event of a breach.

c) A detailed map indicating any areas of environmental sensitivity must be in place.

Note: Areas to be included where applicable are Special Protection Areas (SPA) Natural Heritage Area (NHA), proposed Natural Heritage Area (pNHAs), Special Area of Conservation (SAC), other features to be included, but not limited to are water courses, geological features (e.g. karst, eskers, turloughs, active raised bogs, blanket bogs (if active), fens/wetlands, etc.).

Note: Please see M1.2.b, M1.7.s, M1.32.b.ii for other criteria where features are required to be included on a map.

d) Measures must be implemented to encourage an increase in biodiversity where possible (e.g. setting aside unproductive areas, planting hedgerows, etc.).

e) All significant sources of air, odour and noise emissions must be identified and measures put in place to reduce any negative effects. (See Sample Pollution Prevention Policy)

Information on the following will be collected by survey:

P33 The presence of a baseline assessment of the impact of the farm on the surrounding environment, to ensure areas of existing habitat (hedges, field margins, ponds, water courses, ditches, etc.) are responsibly managed and maintained.

P34 The policy of intercropping (with multiple crops or areas with pollen sources and habitats for pollinators, beneficial predators, etc.) to make use of resources that would otherwise not be utilised by a single crop.

P35 Participation in existing environmental development / protection scheme(s) (e.g. AEOS).

M1.36 Disposal of Spent Growing Media

a) Spent Mushroom Substrate, or plant growing media, must be disposed of in line with the Teagasc SMC Guidelines and/or the Nitrates Directive, and records of disposal maintained.

b) Non-organic growing medium must be collected and controlled pending appropriate re-use or disposal through a registered waste contractor with records of disposal maintained.

Information on the following will be collected by survey:

P36 The re-use of spent growing media, following evaluation and subject to Risk Assessment.

P37 The composting of spent growing media where re-use is not possible.

M1.37 Sustainable Use of Energy Resources

Information on the following will be collected by survey:

P38 The regular monitoring and recording of energy usage (electricity, fuel, etc.), to facilitate assessment of reduction initiatives.

P39 The regular evaluation of all equipment and installations with significant energy usage, to identify areas where energy savings might be made.

P40 The evaluation of all production related activities, to identify areas where energy savings might be made.

P41 The assessment of on farm energy generation (such as solar, wind, bio-gas or water powered, or via a Combined Heat and Power (CHP) facility).

P42 Quantities maintained and analysed by growers for key inputs / resources annually. For example:

- Growing media used in growing produce (by product p.a.);
- Seed/planting material used in growing produce (p.a.);
- Percentage of packaging that is sourced from sustainable sources (p.a.);
- Packaging (kgs) used / disposed (p.a.);
- Water usage (p.a.);
- Fertiliser usage (p.a.);
- Fuel usage (p.a.);
- Electricity Usage (p.a.);
- Refrigerant gas used for replacement / top-up for chill rooms only (p.a.);
- Labour Hours (p.a.);
- Hectares and yield for each production unit;
- Waste Materials (type/volume).

Note: This assessment would typically examine aspects of the market & customer demand for the product, diversity of income streams, optimal yields, profitability, existing resources, overheads, future investment requirements, etc.

PART G: Health & Safety, Staff Welfare, Social Responsibility & Personal Hygiene

Background Information

Producers with less than 3 employees will be aware of their legal responsibility to have a completed Farm Safety Risk Assessment (FSRA) on the farm. Where there are more than three employees, a Farm Safety Statement (FSS) is required. Producers will be aware that the FSRA or FSS assessment needs to be reviewed and communicated to staff and visitors.

There are many agencies which provide a service to assist with the writing of a FSRA/FSS. In addition, publications are available from various sources (Health and Safety Authority of Ireland (HSA), Teagasc, Farming Organisations, Insurance providers, etc.) giving guidance in this area.

Farmers who require a replacement copy of the FSRA, can download it from the HSA website, or alternatively, use the facilities/links on the HSA website to create a new FSRA. Also see www.hsa.ie and http://besmart.ie.

Note: See Safety, Health and Welfare at Work Act 2005 No. 10 2005 and S.I 299 of 2007.

M1.38 Farm Safety

a) Producers must ensure that all avoidable hazards are controlled: these include open / unfenced lagoons, open wells, excessively low or insecure electric wiring, poorly, inadequately protected machinery, etc.

b) An up to date FSRA/FSS must be available that identifies specific hazards on the farm, assesses the risk of injury, and specifies how these risks are to be controlled (www.hsa.ie and http://besmart.ie).

c) A copy of the safety statement signed by the farm manager (or safety officer where present) must be maintained and its implementation must be evident.

d) The FSRA/FSS must be available to all people who visit and work on the farm, such as Farm Workers, Farm Relief Personnel, Contractors, etc.

e) If the FSRA/FSS is not immediately available to hand, a notice must be displayed that is visible to all visitors advising of the availability of the FSRA/FSS on request.

f) The Producer must demonstrate that staff who handle pesticides have been informed that they have the right to request medical surveillance, in relation pesticide hazards.

Note: By law, workplace accidents, where an employee is absent due to injury for 3 consecutive days, must be reported to the HSA

Information on the following will be collected by survey:

P43 The design of the working environment to ensure that workers are comfortable and safe[14].

[14] Please see Health and Safety at Work Act 2005 for further information.

M1.39 First Aid Facilities and Accident & Emergency Plan

a) An emergency procedure/plan for dealing with emergencies (such as personal injury, fire, flood or power failure) must be in place and displayed in a prominent location. (See sample Accident & Emergency Plan Guideline)

b) The plan must have been communicated to all staff, and must contain the following information in the predominant language(s) required, if an accident were to occur:

   i. Farm location, address (including Eircode) and directions;

   ii. Contact person(s);

   iii. Name of First Aid Certificate holder on site;

   iv. An up to date list of relevant phone numbers e.g., Gardaí, hospital, fire brigade, etc.;

   v. Location of fire extinguishers;

   vi. Emergency cut-off procedure for electricity, gas, water.

c) First aid kits, that include blue plasters, must be located close to the working areas, so that they are easily accessible in the case of an accident.

d) An accident record book must be maintained and made available for inspection.

e) At least one member of staff (who is ordinarily on site during production hours) must be qualified in occupational first aid, or be a currently registered health professional with first aid, and hold a valid certificate/professional qualification.

f) Where an occupational first aider is absent, there must be a person designated to take charge to ensure that medical assistance is obtained, if required.

M1.40 Employment Contracts

a) There must be an employee welfare policy that includes respect and fair treatment in the workplace and worker wellbeing and development and this must be communicated to all employees (See Sample Employee Welfare Policy).

b) There must be a named and competent individual responsible for ensuring employees' rights are respected as outlined in the employee welfare policy and obligations are met under national employment law.

Information on the following will be collected by survey:

P44 The presence of written contracts to all employees, which specifies their rate of pay, and the full terms and conditions (sick pay, holiday pay, etc.) of their employment.

M1.41 Community Engagement/Social Audits

Information on the following will be collected by survey:

P45 The engagement with the local, regional and national community activities (charity donations, sports, tidy towns, hosting school/college visits, etc.).

P46 The contribution of the farm to the local community (sourcing labour locally, supporting local business, etc.).

M1.42 Staff Facilities

a) All personnel facilities must be included in the cleaning programme and maintained in a clean condition.

b) Where accommodation is provided, adequate living conditions must be provided for the number of people involved.

Note: Please see 'A Guide to Minimum Standard in Rented Accommodation', published by the Department of Environment, Community and Local Government, for further information.

c) Smoking, eating and drinking must only be permitted in designated areas away from the production, handling or storage of product and there must be clear signs to this effect.

Note: Drinking water for personal use may be permitted in production areas.

d) The canteen must have sufficient and appropriate equipment and furnishings for the number of employees.

e) Food and drink for personal use must not be stored in any area used for production, handling or storage of the product.

M1.43 Toilet and Hand Washing Facilities

a) Employees must have access to clean, ventilated toilets and hand washing facilities in the vicinity of their work, including off-site work (harvesting, planting, etc.) (Critical). ✓

b) Toilets must have a supply of non-perfumed, liquid soap, clean water and hand drying facilities.

Note: Hand sanitisers may be used in addition to adequate hand washing facilities.

c) Toilet facilities must not open directly onto any food handling area.

d) Hand washing signs must be displayed, instructing workers how to effectively wash their hands to remove microbial flora & other contaminants before entering/returning to the product handling facilities.

Information on the following will be collected by survey:

P47 The provision of adequate facilities to employees e.g. at least one toilet per 15 male and per 10 female employees.

M1.44 Protective Clothing/Jewellery

a) Suitable hygiene protective clothing must be available for all staff, where identified as required by risk assessment.

b) Protective clothing must be clean and in good repair.

c) Where disposable gloves and other disposable clothing are used, they must be used only once.

d) When handling produce, jewellery (except smooth single bands) must not be worn.

M1.45 Personal Hygiene

a) A procedure must be in place to ensure that no person who is likely to be a carrier of, or suffering from a disease or infection which can be transmitted through food, is permitted to handle food or enter any food-handling area in any capacity.

b) Employees are required to wash their hands after any activity which may cause contamination of the product (e.g. smoking, eating).

c) A hygiene policy must be in place that includes policies regarding visitors, subcontractors and all employees (See Sample Hygiene Policy).

M1.46 Staff Training

Background Information:

Effective staff training is essential in the management of any business. Personnel handling food must be made aware of, understand and implement hygiene principles necessary to keep food safe. Induction and ongoing training of staff, ensures that the business can consistently meet its obligations and remain viable.

Access to training, and acquisition of new skills by staff, improves productivity, increases safety of the workplace, and enables the competitive business to adapt to the changing demands of customers. An annual training needs assessment will identify the gaps in skills and knowledge which need to be addressed. Training can involve the use of outside agencies or experts, or, where the appropriate skills are available in-house, it may be fulfilled by internal coaching.

a) The person with responsibility for staff training must review the training records of all staff an annual basis to assess training needs and ensure that training is up to date.

b) Staff must be provided with training to ensure that they are competent to carry out their responsibilities and the following training records or certification must be available for each employee, where applicable:

   i. Staff Induction (All Staff);
   ii. Specific Job Responsibilities (All Staff) (Including complex equipment / product knowledge training);
   iii. Fertiliser Application Advisor Qualifications (Applicable Staff);
   iv. Valid Pesticide Spraying Certification (Applicable Staff); See criteria M1.11.h
   v. Harvest Hygiene Procedure (Applicable Staff); See criteria M1.17.b
   vi. Post-Harvest Handling Procedures (Applicable Staff);
   vii. Product & Personal Hygiene (All Staff);
   viii. Health & Safety (All Staff);
   ix. Valid First Aid Certification (Applicable Staff).

PART H: Quality Management System

Background Information

In order for a quality management system to be successful, it is essential that it is fully supported by senior management. Senior management must take an active role in, and support the decision-making process, employed by the quality personnel who implement the system. It is essential also that the required resources are provided to facilitate the implementation of the quality system. Individual employees and quality teams must be given the required training.

M1.47 Regulatory Registration

a) Evidence must be available to prove that the Producer is registered with the competent authority (e.g. DAFM). ✓

Note: Please see M1.9.b, M1.11.e, M1.11.h, M1.11.i and M1.16.b for other criteria where regulatory registration/authorisation is required.

M1.48 Product Safety and Quality Policy

a) The Producer must have a policy which states the commitment of management to ensuring quality and safety of the product and their commitment to meeting the requirements of this scheme and to continuous improvement. (See Sample Quality Policy.)

M1.49 Management Responsibility

Note: The requirements (a to c) below must be documented if there are over 3 permanent full time employees working in the organisation. Where there are 3 or less permanent full-time employees then the auditee will be asked to give an adequate verbal response to each of the requirements (a to c) below.

a) An organisation chart must be maintained showing the company structure. (See sample Organisational Chart)

b) Management must define the person(s) with responsibility for:

i. Hygiene and biosecurity;
ii. Food/Product Safety and Quality Management;
iii. Production decisions (including crop production plan/schedule);
iv. Non-conforming product management;
v. Product recall;
vi. Managing complaints;
vii. Managing suppliers;
viii. Chemical selection and use;
ix. Health and safety;
x. Staff training

c) Where the person responsible for quality management changes, Bord Bia must be notified.

d) Management must conduct an annual assessment of the business activities to identify and set at least one documented target for improvement in each of the following areas:

   i. Raw material sourcing (e.g. seed, plant, growing media, etc.);

   ii. Resource efficiency (e.g. product use, water use, energy use, etc.);

   iii. Social sustainability;

   iv. Environmental/Biodiversity measures (e.g. reduce food waste, general waste).

Note: The assessment should examine aspects of the market & customer demand for the product, diversity of income streams, optimal yields, profitability, existing resources, reduction of waste, overheads, future investment requirements, environmental impact, biodiversity improvements, etc. The Additional Performance Criteria Benchmarking report provided by Bord Bia after the audit may be used as the basis for setting targets.

e) Management must track and document performance against defined improvement targets set out against requirement M1.49.d above.

Information on the following will be collected by survey:

P48 The use of financial planning tools/expert advice to assess the economic sustainability (e.g. optimum profitability through efficient use of existing resources) of the business.

P49 The frequency and scope of management meetings to review all quality system data (with minutes of this meeting retained) to establish and assign responsibility for improvements including:

- Audit Reports;
- Customer Complaints;
- Customer Satisfaction data;
- Process and Non-conformance data;
- Staff Training requirements;
- Quality improvement objectives for the next year.

Note: Please see Sample Management Review Procedure for reference.

M1.50 Quality Documentation and Records

a) Quality documentation must be made available and understood by personnel as appropriate to their responsibilities.

b) All records must be signed and dated, and must be available for inspection at audits (or in the case of archived records, maintained at a secure and easily accessible location) for a minimum period of three years, unless an alternative longer retention period is required by legislation. (See summary list of all records, procedures and policies required in this module in Appendix 6).

Note: For Producers new to the Bord Bia Scheme, a minimum of 3 months records must be available prior to audit to demonstrate a pattern of compliance.

M1.51 Internal Auditing and Reporting

a) The Bord Bia additional performance criteria survey (available through qas.bordbia.ie) must be completed/updated prior to each audit and made available for inspection.

b) Prior to each announced audit the Producer must complete / update their self-assessment (paper or online version) against all requirements for each applicable SHAS module and make this available for inspection. The self-assessment must be reflective of actual farm practices, with non-compliances raised where observed.

Note: Please contact Bord Bia for any queries relating to the above.

c) All non-compliances defined in these self-assessment audits, must be assigned and tracked, until completed by the target completion dates.

d) <u>In the event that a critical non-compliance is identified during internal audits or routine checks, Members must immediately notify Bord Bia and implement the relevant procedures (including recall where necessary) (Critical).</u> ✓

e) Where an environmental or health & safety (e.g. reportable accident or dangerous occurrence) incident has occurred on the site, the Producer must inform Bord Bia and records of this communication must be maintained.

PART I: Supplier and Customer-Related Issues

Background Information

Crop specifications and documented customer requirements, where applicable, should be reviewed regularly. This should enable Producers to improve productivity, by minimising sales and production wastage.

Producers will be aware of the importance of customer service, in terms of delivering the product as specified, in a timely manner, as well as having a mechanism in place to deal with customer complaints in a thorough manner.

Article 18 of Regulation EC 178/2002, requires that full traceability for the product, and any substance incorporated into the food product, must be maintained at all times. Traceability to suppliers and to customers must be also be maintained. Article 19 requires that effective Withdraw and Recall procedures are in place.

M1.52 Supplier & Customer Management / Product Specification

a) The Grower must maintain an up to date list of all suppliers (with contact details) that have been approved to supply any materials and services that could affect product quality and / or safety.

b) A documented product specification must be available for each product produced.

c) Growers must actively engage with customers to develop a good understanding of their customers' requirements and future plans (e.g. through regular meetings).

M1.53 Product Traceability

a) <u>There must be a documented traceability procedure in place. (Critical)</u> ✓

b) Documentation must be maintained to demonstrate the traceability of all produce through each stage of production and forward to the immediate customer.

c) Where the Producer supplements his/her own produce, a system must be in place to verify the certification status of the supplier.

Note: Produce may be supplemented to ensure continuity of supply throughout the season.

d) Where a supplier of supplemented product is not Bord Bia approved, a system must be in place, which clearly identifies how certified and non-certified produce streams are segregated, and how the customer is informed of the certification status of the product.

e) There must be adequate records to permit a clear reconciliation of all produce.

Note: Reconciliation will include produce sown, purchased for re-sale, harvested, wasted, re-worked, etc.

M1.54 Withdrawal and Recall

Note: See FSAI Guidance Notes 10 on Product Recall and Traceability www.fsai.ie/resources_publications.html

Note: See also 1.24.b (Recall following MRL & microbiological limit exceedance).

a) The Producer must have a documented and effective procedure for product withdrawal & recall (See Sample Product Recall Withdrawal Procedure). ✓

b) Where product withdrawal or recall has occurred, records must be maintained and the Producer must inform Bord Bia immediately (See template Product Recall Withdrawal Record).

c) This procedure must be tested on an annual basis and records of the test maintained.

M1.55 Complaints Handling

a) The Producer must have a documented complaints procedure that ensures that complaints are recorded, followed up and analysed, and records must be available of all complaints, as well as the actions taken on their basis.

M1.56 Management of Non-Conforming and Waste Product

a) The Producer must have a system in place to identify and record crop losses and must review and implement strategies to reduce crop/food waste at all stages of the process annually.

b) There must be a system to ensure that produce that does not conform to requirements (e.g. held, returned, withdrawn, recalled or rework), is managed appropriately to prevent unintended use or release. (See Sample Non-Conforming Products Policy.)

M1.57 Subcontractors

a) Where subcontractors are used for any activity on the farm they must be made aware and confirm understanding of the compliance criteria of this Scheme applicable to their area of activity.

b) Where activities have been undertaken by a subcontractor and records/documentation are required by the associated compliance criteria of this Scheme, then these records must be available.

M1.58 Allergens[15]

a) Where allergens are produced/handled (e.g. celery, mustard seeds, dairy products, nuts), a documented procedure must be in place, and available, to all staff, subcontractors and visitors, informing them of the possible allergen risks and the preventative measures to be taken.

[15] 'Allergens' mean those listed in Annex II of Regulation (EU) No 1169/2011 of the European Parliament and of The Council of 25 October 2011

Module 2: Produce Handling & Packing

M2. Produce Handling & Packing Module

Module Introduction

IMPORTANT NOTE: Producers who wish to gain certification under this module must also be audited against the M1 – Growing Module as a pre-requisite.

The Bord Bia Sustainable Horticulture Assurance Scheme (SHAS) is a voluntary scheme open to all producers of product relevant to the applicable modules of the Scheme. The Standard (and the scheme based on the standard) is accredited to the International Standard for Product Certification ISO 17065:2012 by the Irish National Accreditation Board.

This module contains the specific criteria for Produce Handling and Packing activities of those horticulture producers who pack their own fresh produce that were grown **predominantly**[1] on the Grower's own farm.

Note: Businesses that are involved in the packing of fresh produce from multiple producers must be audited against M3 - Packer Distributor Module to become certified under the SHAS.

A qualified auditor will, during a Bord Bia farm audit, determine whether the auditee complies with the compliance criteria set out in this module.

Abbreviations / Definitions specific to this module

For a full list of definitions and abbreviations relevant to the SHAS please refer to Section 1.6 in the Scheme Introduction.

Produce Handler: An individual grower, company or other organisation that is involved in the packing of fresh fruit and vegetables under the Scheme that were grown predominantly1 on the Grower's own farm.

Distributor: An individual, company or other organisation sourcing produce from multiple growers, that is involved in the produce handling, packing and distribution of fresh fruit and vegetables.

Module Layout

This Module sets out the various criteria in panels as follows:

Background Text

The blue text sets out the context of the subsequent criteria in the sub-section and is presented for information purposes only.

Compliance Criteria

Black text on a clear background sets out the compliance criteria under which the Producers compliance (will be assessed. These are numbered a), b), c), etc. Compliance with these compliance criteria (as set out in full detail in the Scheme Regulations) is required to be eligible for certification under the scheme as a Horticulture Producer.

Note: A brief summary of the above layout can be seen at the bottom of each page within this module.

[1] More than 75% of product grown on Producers own farm

PART A: General Management

Background Information

Producers who wish to gain certification under this module must also be audited against the M1 – Growing Module as a pre-requisite.

Businesses that are involved in the packing of fresh produce from multiple Producers must be audited against M3 - Packer Distributor Module to become certified under the SHAS.

M2.1 Produce Handling

a) The produce handling and packing activities must be included in the Risk Assessment as per criteria M1.1.a.

b) Producers must implement a produce handling and packing procedure which highlights the hygiene aspects from the risk assessment.

M2.2 Pack-house Hygiene and Management

a) All facilities and equipment involved in the packing operation must be kept clean so as not to pose a risk of contamination to the produce.

b) There must be an established and effective pack-house cleaning routine and a cleaning schedule record must be kept.

c) Water used for cleaning surfaces that may come in contact with the produce must be in compliance with the microbiological and chemical parameters listed in Appendix 5.

d) All cleaning agents and other chemicals (detergents, lubricants, etc.) used in the pack-house must be approved for use in the food industry and evidence maintained (i.e. through material safety data sheets).

e) When not in use, cleaning agents must be stored securely in a clean and dry place separate from produce and packaging.

f) Where controlled environment is required to preserve quality and safety of the produce, environmental readings must be monitored and records must be maintained (e.g. humidity, temperature).

g) When the pack-house building / room is in use for packing it must be:

   i. Used only for activities that are directly related to the packing of fresh produce;

   ii. Free of potential contaminants (e.g. non-food grade oil / paint etc.).

h) Access to the pack-house must be restricted to prevent ingress by animals or unauthorised personnel/visitors.

M2.3 Measuring Equipment

a) Measuring equipment (at a minimum, all equipment used to validate the unit of sale) must be compliant to national standards and calibrations traceable to National standards[2].

Note: Information observed through audit of the following sections will be used for reconciliation purposes in addition to information seen following audit of section M1.53 Product Traceability.

[2] http://www.nsai.ie/Our-Services/Measurement/Measuring-Instruments.aspx

M2.4 Purchasing, Supplier and Materials Control

a) Producers must maintain a record (e.g. delivery dockets) of crop inputs and packaging for each product received, with the following information retained at a minimum:
   i. Name of Supplier;
   ii. Address;
   iii. Product Description;
   iv. Date of Supply;
   v. Quantity Received.

b) An effective stock rotation of all produce must be in place, which need not be date dependent.

c) Incoming produce must be inspected and approved for use upon delivery and record of inspection maintained.

d) Produce imported from outside the EU must be clearly identified through all stages of the process.

M2.5 Product Release

a) An inspection process must be in place for all packed produce to ensure compliance with defined quality, labelling and logo use criteria prior to despatch and records kept.

b) For all products dispatched, a record of the following information must be maintained:
   i. Customer Name;
   ii. Product(s) supplied;
   iii. Quantity supplied;
   iv. Date(s) of supply.

M2.6 Labelling

a) Producers must be aware of the labelling requirements as described in the regulation on provision of food information to consumers[3] and as outlined in customer specifications. ✓

Note: See regulation No (EC) 543/2011 laying down detailed rules for the application of (EC) No 1234/2007 in respect of the fruit and vegetables and processed fruit and vegetables sectors, for more information.

b) An effective system for checking labels on outgoing product must be in place and records of these checks maintained.

c) A copy of each label for each batch of all outgoing product must be retained for a sufficient period (e.g. best before date + three months) to allow for effective product recall.

M2.7 Food Fraud

a) Producers must be aware of the potential for food fraud to occur and must have a documented food fraud policy outlining the measures in place to mitigate the risks.

Note: Food fraud may occur when suppliers provide products that do not match specifications. See Sample Food Fraud Policy available from Bord Bia.

[3] Regulation (EU) No 1169/2011 on the provision of food information to consumers.

M2.8 Use of the Bord Bia Logo

a) The use of the Quality Symbol / Bord Bia Logo must be in accordance with the Bord Bia conditions which govern its use (full policy published on www.bordbia.ie, please see Section 2.11 for further information).

b) Where the Bord Bia Logo is in use for a specific product, evidence of the approved application must be kept and made available for inspection.

4. Appendices

Appendix 1: Reference Information

Note: This is not intended as a definitive list of all relevant legislation and does not replace any applicable statutory requirement. It is the duty of producers to keep fully up to date with all legislation and legislation changes relevant to the sector.

All references are to be taken on an as amended basis.

Food Hygiene and Food Safety Legislation

- Regulation (EC) No 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety
- Regulation (EC) No 852/2004 on the hygiene of foodstuffs
- Regulation (EC) No 2073/2005 on microbiological criteria for foodstuffs
- Regulation (EC) No 396/2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC
- Regulation (EC) No 1881/2006 of 19 December 2006 setting maximum levels for certain contaminants in foodstuffs
- S.I. No. 432 of 2009 European Communities (Food and Feed Hygiene) Regulations 2009
- S.I.No. 587 of 2007 European Communities (Plastics and Other Materials) (Contact with Food) Regulations 2007

Farm Safety Legislation

- Safety, Health and Welfare at Work Act 2005 No. 10 2005
- S.I. 299 of 2007 Safety, Health and Welfare at Work (General Application) Regulations 2007

Environmental legislation

- S.I. 122 of 2014 European Union (Drinking Water) Regulations 2014
- S.I. 278 of 2007 European Communities (Drinking Water) Regulation 2007
- Local Government (Water Pollution) Act, 1977 and 1990
- Waste Management Act, 1996 and 2002
- Environmental Protection Agency Act, 1992

Fertiliser Application

- S.I. No. 610 of 2010 European communities (good agricultural practice for protection of waters) regulations 2010

Pesticide Legislation

- Directive 2009/128/EC establishing a framework for community action to achieve the sustainable use of pesticides
- Regulation (EC) No 1107/2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC
- S.I. No. 155 of 2012 European Communities (Sustainable Use of Pesticides) Regulations 2012

Pesticide Use Exclusion Areas

Water Source	Distance
Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 100m3 or more of water per day or serving 500 or more persons.	200 metres
Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 10m3 or more of water per day or serving 50 —500 persons.	100 metres
Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 1m3 to 10m3 of water per day or serving 10-50 persons.	25 metres
Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 1m3 or less of water per day or serving 10 or less persons.	Up to 5 metres

Table 1: Table indicating minimum pesticide use distances from open wells, open boreholes, water abstraction points

Labelling & Marketing Legislation

- Directive 2000/13/EC on the approximation of the laws of the Member States relating to the labelling, presentation and advertising of foodstuffs
- Directive 2003/89/EC amending Directive 2000/13/EC as regards indication of the ingredients present in foodstuffs
- Directive 2007/68/EC amending Annex IIIa to Directive 2000/13/EC as regards certain food ingredients.
- Regulation (EC) No 1169/2011 on the provision of food information to consumers
- Regulation (EC) 543/2011 laying down detailed rules for the application of (EC) No 1234/2007 in respect of the fruit and vegetables and processed fruit and vegetables sectors
- Regulation (EC) No 771/2009 amending Regulation (EC) No 1580/2007 as regards certain marketing standards in the fruit and vegetable sector

ISO Standards

- ISO 17065:2012: Conformity Assessment - Requirements for bodies certifying products, processes and services.

Other

- Data Protection Act, No 25 of 1988 and the Data Protection (Amendment) Act, No 6 of 2003

Useful References and Codes of Practice

- W.H.O. Guidelines for the Safe Use of Waste Water & Excreta in Agriculture & Aquaculture 1989
- FSAI Code of Practice No. 4 Code of Practice for Food Safety in the Fresh Produce Chain in Ireland
- FSAI Guidance Note No.10 – Product Recall and Traceability (Revision 2)
- FSAI Guidance Note No.11 – assessment of HACCP compliance
- FSAI document, Food Safety Implications of Land-spreading Agricultural, Municipal and Industrial Organic Materials on Agricultural Land used for Food Production in Ireland
- Storing and Using Plant Protection and Biocidal Products; September 2006 DAFM
- Bord Bia IPM Guidelines

- HSA Guidelines on Farm Safety Statements and Farm Safety Assessment documentation
- EPA: Waste Catalogue and Hazardous Waste List (see the EPA Website)
- EPA Drinking Water Advice Note No. 14: Borehole Construction and Wellhead Protection
- HSA Guidelines on Farm Safety Statements and Farm Safety Assessment documentation

Useful websites

- Department of Agriculture Food and the Marine: www.agriculture.ie
- Food Safety Authority of Ireland: www.fsai.ie
- Teagasc: www.teagasc.ie
- Pesticide Control Service: http://www.pcs.agriculture.gov.ie
- Irish Statute Book: www.irishstatutebook.ie
- Environmental Protection Agency: www.epa.ie
- Health and Safety Authority: www.hsa.ie
- The Fertiliser Association of Ireland: www.fertilizer-assoc.ie

Appendix 2: Participant Declaration

Start Declaration

- I undertake to abide by the conditions applicable to horticultural producers as laid down in the Bord Bia SHAS Scheme and applicable modules.
- I acknowledge having received a copy of the Scheme documentation.
- I agree to allow auditors access to my facility and relevant records at all reasonable times and to take samples for testing if required.
- I agree to provide full and accurate details of my practices that relate to the Bord Bia SHAS.
- I agree to permit Bord Bia to record relevant information
- I declare I am in compliance with the relevant statutory requirements with regard to the operation of my farm / facility.
- I understand that my participation in the Scheme is a demonstration of my commitment to achieving the highest standards in horticultural production and my responsibilities in the food chain.
- I grant permission to the Bord Bia auditor to take photographs during the audit to be used as objective evidence for certification purposes.
- I understand that photographs will only be used for audit purposes and be kept strictly confidential by Bord Bia and its agents.
- I agree to permit my name and Certification Bord Bia Status to be published on the SHAS register/database.
- I agree to inform Bord Bia immediately in the event of a conviction under legislation relating environmental protection, worker health and safety or any aspect of the Scheme.
- I agree that the information that I am providing is, to the best of my knowledge, true and correct.
- I agree to accept contact in relation to relevant SHAS events.

Signed: _____ **Date:** _____

End Declaration

- I understand that this audit is sample based and that therefore any non-compliances reported herein cannot be construed to include all such non-compliances.
- I confirm that the auditor has no conflict of interest in carrying out this audit (i.e. has not provided individual training, consultancy, or other services that would affect the integrity or impartiality of the audit process/or recommendation).
- I will close out the non-compliances by the agreed date.

Signed: _____ **Date:** _____

Appendix 3 Farm Safety Risk Assessment / Farm Safety Statement Guidelines

The main pieces of legislation governing occupational safety and health in the agriculture and forestry sector are the Safety Health and Welfare at Work Act 2005 and the Safety Health and Welfare at Work (General Application Regulations) 2007.

The risk assessment approach is at the core of this legislation. Employers with three or more staff have a legal duty to prepare a written health and safety document, which is referred to as a Safety Statement.

However, since the introduction of the 2005 Safety Health & Welfare at Work Act, employers with fewer than three employees can fulfil this legal duty by complying with an approved, sector specific Code of Practice / Farm Safety Risk Assessment.

An online Farm Safety Risk Assessment entitled the Farm Safety Code of Practice was recently launched, whereby farmers can complete and store their risk assessment on line – see www.farmsafely.com

A Farm Safety Risk Assessment / Farm Safety Statement is a practical written plan aimed at minimising the risk of injury or ill health for all who work on the farm, or who are affected by the work. The duty of preparing and implementing the document lies with the person in control of the farm. It is strongly recommended, however, that a Farm Safety expert is consulted in the preparing of the document.

The Farm Safety Risk Assessment / Safety Statement must be reviewed on a regular basis, according as farming conditions and activities change, and new machines and new hazards are brought onto the farm. The document must be retained by the farmer and brought to the attention of all who work on the farm.

Reference should be made to the 'Farm Safety Handbook' published by the Health and Safety Authority of Ireland, which is available from any of their offices throughout the country, through their website www.hsa.ie, or through their information phone number (see website).

Some common issues of concern that could be addressed in the Farm Safety Risk Assessment / Safety Statement, include the following:

Electrical

- Making safe all electrical appliances and the wiring associated with these (especially where such wiring is excessively low or insecure) in housing and buildings.
- Protection of electrical installations from water.
- Ensuring that overhead wires are at a sufficient height to avoid contact with machinery and tipping trailers.

Machinery

- Ensuring that all tractor PTO points are protected with approved guards at all times while in use.
- Erecting safety rails on top of the walls of open silage pits.
- Safe storage of machinery.
- Safe use of mechanical equipment and machinery (including PTO guards).

Children

- If children have access to the farm yard area, then a safe and secure play area should be designated.

Fire

- Where applicable, fire exits should be clearly marked.
- Fire extinguishers should be available and regularly serviced.
- The risk associated with hazardous chemicals usage should be assessed.
- Making contractors aware of the hazards prior to commencing work.

Note: The above is not a complete list nor does it represent a recommendation by Bord Bia, as it is each individual farmer's legal responsibility to assess and address the risks that pertain to his/her own farm.

Contact the HSA for further information (www.hsa.ie).

Appendix 4: Organic Material Application Matrix

The content of the following Appendix has been sourced from the FSAI document, Food Safety Implications of Land-spreading Agricultural, Municipal and Industrial Organic Materials on Agricultural Land used for Food Production in Ireland.

Organic materials (i.e. manures, soiled water, sludges and composts) are a valuable source of essential soil nutrients and conditioning and when used in an environmentally responsible manner can minimise the need for chemical fertiliser. These materials are also potential sources of pathogens (of both human and animal health significance) and chemical contaminants. Growers must ensure that materials used are both safe / suitable for use and are then managed in a way that minimises the risk to both animal health and/or food safety.

Treated or untreated sewage sludge is prohibited on Bord Bia quality assured farms (see Critical Criteria M1.8.j in Module 1) and this applies to all the land in the management of the Producer. Sludges are permitted where these are from industrial waste treatment (e.g. food processing) and where a current EPA licence is available that permits land spreading on food producing land.

The method, timing and rate of spreading organic fertilisers can affect the survival of pathogens. Land-spreading should only take place during the specific times of year, in accordance with application rates, minimum distance from water sources and other restrictions as set out under the European Union (Good Agricultural Practice for the Protection of Waters) Regulations 2014.

Below are suggested pre-planting and pre-harvest intervals for spreading of organic fertilisers on growing sites.

Source of Material	Non – High Risk Produce		Ready-to-eat Crops	
	Pre-planting Interval	Pre-harvest Interval	Pre-planting Interval	Pre-harvest Interval
Treated farm manure[1] / liquid manure	7 Days	Not permitted except pre planting	7 days	Not permitted except pre planting
Batch stored farm manure / liquid manure	7 Days	Not permitted except pre planting	7 days	Not permitted except pre planting
Untreated[2] farm manure / liquid manure	7 Days	Not permitted except pre planting	6 months	12 months (pre-harvest)

Table 1: Organic Material Application Matrix

[1] Manure is taken to include specifically animal by-product organic material.

[2] Untreated manure / liquid manure is taken to mean organic material that has not been stored for a minimum of 6 months or that has not been treated according to the treatment methods outlined in this Appendix.

Organic Materials Treatment Guidelines

To ensure the safety for food production of the product to be applied, it is recommended that all organic materials applied to crops would have been treated in one of the following ways:

Composting of solid manures is a particularly effective method of controlling microbial pathogens, but for best results the process needs to be actively managed. The manure should be treated as a batch and turned regularly (at least twice within the first 7 days) either with a front-end loader or preferably with a purpose-built compost turner. This should generate high temperatures over a period of time (e.g. above 55oC for 3 days) which are effective in killing pathogens and this temperature should be monitored. Allow the compost to mature as part of the treatment process. The whole process should last at least 3 months.

Lime treatment of liquid manure (addition of quick lime or slaked lime to raise the pH to 12 for at least 2 hours) is an effective method of inactivating bacterial pathogens. Allow the slurry to mature as part of the batch treatment process for at least 3 months prior to land spreading.

Batch storing farm manures and slurry organic materials should be stored as a batch for at least 3 and 6 months respectively (i.e. no additions of fresh manure are made to the store during this period) in order to be effective in killing pathogens. Farm manures, whether treated or untreated cannot be applied during the growing stage of the crop.

Other: Guidelines on safe use of organic materials is available from DAFM and Teagasc.

Appendix 5: Water Analysis

Water Supply Risk Assessment

When conducting a Risk Assessment of the water supply growers should look at the source of the water supply and the surrounding area to see if contamination is possible. Where applicable, the Risk Assessment should involve checks of the storage tanks, any treatment systems and the pipework. Risk Assessment aims to identify actual and potential hazards so that you can take action to make sure your water supply is safe.

The level of risk depends on several factors including: source of water (surface, ground, recycled, mains etc.), method of application during irrigation (overhead, furrow, drip etc.), the activity (irrigation, washing, misting etc.) and the type of crop (ready-to-eat, sometimes eaten raw, always cooked.) Wider conditions which can affect the quality of the water should also be considered, such as ongoing local water quality issues, flooding or pollution events, boil notices issued, farming practices in areas surrounding water sources, type and construction of borehole. For example, surface water is generally prone to temporary or intermittent contamination due to discharges of (treated) wastewater, storm water runoff, livestock or wildlife faeces etc.

Risks to the safety of the product from water must be identified and assessed prior to use, and where possible, measures put in place to control the hazards which lead to them. Where the identified risks are deemed unacceptable and where there is no reasonable control possible, an alternative water source must be used.

An online risk assessment tool is available to participants through a secure Bord Bia online interface.

Microbiological Parameters of Water Supply

Where a water test is required it should meet the minimum parameters outlined in Table 1 below.

MICROBIOLOGICAL PARAMETERS		
Parameter	**Concentration or value (maximum)**	**Units of measurement**
Enterococci	0	Number/100ml
Escherichia coli	0	Number/100ml

Table 1: Microbiological Parameters

Chemical Parameters of Water Supply

Where a water test is required it should meet the minimum parameters outlined in Table 2 below.

CHEMICAL PARAMETERS		
Parameter	**Concentration or value (maximum)**	**Units of measurement**
Ammonia	0.3 (0.23 as N)	NH4 mg/l
Nitrites	0.1 (0.03 as N)	NO2 mg/l
Nitrates	50 (11.3 as N)	NO3 mg/l

Table 2: Chemical Parameters

Frequency of water sampling for analysis

National guidelines[1] on the recommended timing and frequency of water sampling have been incorporated into the Scheme.

Growers should however consider taking water samples at appropriate times during the growing season of each fresh produce crop to cover the entire period during which water is use. The number of samples taken over the growing period should be based in risk assessment (note: annual testing is required at a minimum in this Scheme). For example, growers should consider increasing the frequency of water sampling for ready-to-eat crops or following an event such as heavy rainfall or flooding.

Sanitary criteria for 'Clean' water

'Clean' water is water that does not contain microorganisms, harmful substances or toxic marine plankton in quantities capable of directly or indirectly affecting the health quality of food. Clean water can be used by a grower if it can be demonstrated that the water does not contain microorganisms, chemical contaminants or other harmful substances at levels that could affect the safety of the produce[2, 3].

Limits for levels of Escherichia coli (as an indicator of faecal contamination), which determine the suitability of water for an intended for use in the primary production of fresh produce are set out in national guidelines[1].

This module and online risk assessment tool incorporates the recommendations of the national guidelines. This is available to participants through a secure Bord Bia online interface.

Improvements to water supply

The following are some examples of improvements that may need to be implemented:

- Installing an appropriate water treatment system to ensure satisfactory microbiological quality and where required, water filters (to remove iron, nitrates, manganese etc.);
- Repairing the system to prevent dirty water, animals or their droppings entering the water e.g. by:
    - sealing the roof slabs on collection chambers;
    - fencing around the source;
    - digging a drainage ditch to stop surface water or water just below the surface entering the supply.

[1] **FSAI (2016)** Guidance Note 31, Fresh Produce Safety in Primary Produce Production.
[2] **European Commission (2012)** Guidance Document on the Implementation of Certain Provisions of Regulation (EC) No 852/2004 on the Hygiene of Foodstuffs.
[3] **European Commission (2004)** Regulation (EC) No 852/2004 on the Hygiene of Foodstuffs

Appendix 6: Summary of Records, Procedures & Policies

Below are lists of all the records, procedure and policies referenced within Module 1 and Module 2 of this Standard and should be maintained up to date where relevant to your enterprise.

Records (Where Applicable)

Growing Module

Crop records

Propagation records

Seed information

Mushroom casing/substrate Bord Bia certification status

Mushroom substrate chemical sterilization record

Growing substrate thermal sterilization record

Water analysis record

Record of corrective action taken to correct irrigation water quality issue

Maintenance records of water systems

Organic materials usage record

Fertiliser inventory records

Fertiliser usage records

Fertiliser application equipment maintenance records

Bumblebee usage records

Pest control records

DAFM Integrated pest management record and Pesticide application record

Pesticide justification records

Pesticide inventory records

Pesticide purchase records

Pesticide usage records

Pesticide disposal records

Pesticide container disposal record

Spray equipment calibration record

Harvest records

Harvest equipment breakage / loss record

Post-harvest treatment record

Vehicle cleaning & inspection records

Temperature records of transport of harvested product

Cleaning programme record: cool chain

Cold room temperature record

Waste haulier collection record

Glass breakage record/register

Pest control records

General equipment maintenance record

Monitoring and measuring equipment calibration schedule and record

Disposal of SMC record

Disposal of non-organic growing medium

Accident/injury record

Staff training records

Significant environmental or health & safety incident record

Produce reconciliation records

Recall/withdrawal test record

Complaints handling records

Subcontractor records

Produce Handling and Packing Module

Pack-house cleaning record

Controlled environment records

Crop inputs records (e.g. delivery dockets)

Incoming Product record

Product dispatch inspection record

Procedures (Where Applicable)

Harvest hygiene procedure
Post-harvest produce handling procedure
Fruit and vegetable washing procedure
Waste management procedure
Farm Safety Statement (FSS)
Management of organic and inorganic waste
Handling glass / hard plastic breakages
Personal hygiene procedure
Dealing with emergencies procedure
Traceability procedure
Recall and withdrawal procedure
Complaints procedure
Allergens procedure (where required)

Policies

Growing Module
Sustainable Water Use Policy (APC)
Visitors Policy
Waste Management Policy (APC)
Employee Welfare Policy
Hygiene Policy
Quality Policy
Non-conforming Products Policy
Produce Handling and Packing Module
Food Fraud Policy

Appendix 7: Accident & Emergency Plan Guidelines

Guidelines

The priorities for site staff are:

- Maintenance of human life and the avoidance of situations likely to cause injury or harm to staff are paramount;
- Staff safety, health and welfare.

Each Participant should:

- Carry out a risk assessment on the premises / farm to identify the potential risks to your farm;
- Develop an emergency response procedure for predictable situations/identified risks such as:
    - Gas Leak;
    - Fire;
    - Power Failure;
    - Personal Injury;
    - Equipment Failure.

Farms are required to have a Safety Statement in place that deals with the procedures to be followed in emergencies.

Post a list of emergency telephone numbers beside a telephone (and near an exit) and a separate list of useful numbers nearby.

Emergency Telephone Numbers		
Emergency Services	999	
Doctor		
Local Fire Services		
Ambulance		
Gardaí		
Poisons information centre.	(01) 837 99566	
Health & Safety Authority (fatal/major incident line)		
EPA incident reporting line (24 hours) (major environmental incident)	1890 33 55 99	
Suppliers Telephone Numbers		
Electricity		
Gas		
Water		
Others (e.g. hauliers)		

When reporting and dealing with an incident, the reporting person might find it useful to have the information below easily to hand.

<table>
<tr><th colspan="2">Your Contact Information</th></tr>
<tr><td>Farm Address:

Postcode:
Farm map reference:</td><td>Farm Contact Name:

Farm Tel. No:

Mobile Contact No:</td></tr>
<tr><td colspan="2">Directions to farm from nearest main road/ village:</td></tr>
<tr><td>Location of nearest alternative water supply:

Location of fire extinguishers:

Location of washing facilities:</td><td>Location of isolation points for:

Gas:

Electricity:</td></tr>
<tr><td>Location of gas cylinders, fuel tanks and any highly flammable substances (e.g. fertilisers):</td><td>Location of any corrosive, poisonous or other noxious substances (pesticides, paints, preservatives, acids):</td></tr>
</table>

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Bord Bia
Irish Food Board

Bord Bia, Clanwilliam Court, Lower Mount Streen, Dublin 2, D02A 344
Tel: 01 668 5155 Fax: 01 688 7521 Web: www.bordbia.ie