



A SCHEME AND TRAINING MANUAL ON GOOD AGRICULTURE PRACTICES (GAP) FOR FRUITS AND VEGETABLES

Standard

STANDARD FOR GOOD AGRICULTURE PRACTICES (GAP): FRUITS AND VEGETABLES

1. OBJECTIVE

The fundamental objective of laying down this standard is to strengthen Good Agriculture Practices (GAP) for fruits and vegetables in countries. The challenges currently being faced by most countries include the absence of standards for good practices in the farming sector. Most of the food safety standards are focused on end products, whether mandatory technical standards or voluntary standards.

2. PURPOSE

The purpose of this document is to set out Good Agriculture Practices to be implemented by producers of fruits and vegetables to improve the safety and quality of their produce, while at the same time protecting the environment and safeguarding the health and safety of their workers.

3. SCOPE

This standard specifies the requirements of GAP with respect to all types of fresh fruits and vegetables covering activities such as production, harvesting and post-harvest handling of farm produce and packhouse operations for produce either for sale for direct human consumption or to be used for further processing by the food industry.

The standard may be used for all types of production systems, namely conventional production systems where produce are grown in the soil and hydroponic systems where produce are grown in inert media. Production may occur in the open or in a protected environment.

High-risk products such as sprouts and minimally processed produce such as cut fruits and vegetables are not covered by this standard. The standard does not provide any basis for certification of organic products or GMO free products, but these products can also be certified as GAP compliant in cases where GAP requirements are implemented. In some countries the regulatory policy does not permit cultivation of GM crops and therefore this aspect needs to be addressed accordingly.

This standard further categorizes the criteria/requirements, based on their importance, as “critical”, “major” or “minor”.

4. REFERENCES

Many standards, guidelines and certified systems for GAP from around the world were used as references to prepare this standard. The main sources of information were:

- ASEAN Secretariat. 2006. Good Agriculture Practices (GAP) for production of fresh fruits and vegetables in the ASEAN region.
- FAORAP. 2014. Training manual on implementing ASEAN GAP in the fruit and vegetable sector: its accreditation and certification.

- GLOBALG.A.P. 2015. Integrated farm assurance – all farm base – crops base – fruit and vegetables: control points and compliance criteria, version 5.0.

5. STRUCTURE OF THE STANDARD

5.1 This standard specifies the requirements, in the form of five modules, to be met with respect to GAP in the farms producing fruits and vegetables. The first four modules are stand-alone modules and may be implemented depending upon the objective to be met, namely food safety, environmental management, produce quality, and worker health, safety and welfare. A fifth module is on general requirements that need to be met by farm (single or as group) in addition to the four modules. It also contains criteria for internal control system for farms that seek to apply for recognition as a group or group certification. Each of the four modules can be used alone or in combination with other modules. This enables the progressive implementation of GAP module by module based on individual country/producer priorities. A comparison of the requirements in each module is given in Appendix 1.1.

5.2 Each module is designed as a complete section enumerating criteria/requirements for control that need to be implemented on a farm, whether a single unit or a group of farms coming under a common group with internal management. The module also gives a checklist in the form of a table that contains the verification indicator for each of the criteria or a checkpoint and can be used by the producer for self-checking or for checking by the auditor. This also includes a column allowing for comments.

5.3 The criteria/requirements have been categorized, based on their importance, as “critical”, “major” or “minor” as explained below:

- i. “Critical” requirements – these are required to maintain the integrity of the produce and failing to adhere to these may result in a serious food safety incident resulting from a breach in food safety and product integrity.
- ii. “Major” requirements – these are mandatory and must be followed.
- iii. “Minor” requirements – these are important but may not be essential depending upon the produce category.

Compliance criteria:

Critical – 100 percent compliance shall be compulsory.

Major – 90 percent compliance shall be compulsory.

Minor – 50 percent compliance shall be compulsory.

The term “shall” is used in this document to indicate those provisions that are mandatory, i.e. those that are categorized as “critical” or “major”. The term “should” is used in this document either for provisions that are categorized as “minor” or to indicate recognised means of meeting the requirements of the standard.

6. Glossary

A glossary defining various terms is given at Appendix 1.2.



Ministry of Agriculture and Animal Welfare / Maldives Food and Drug Authority

Velaanaage (7th floor), Ameer Ahmed Magu, Male', Republic of Maldives
Tel: 960 3033408; Email: info@agriculture.gov.mv Website: www.agriculture.gov.mv

7. FOOD SAFETY MODULE (FSM)

The purpose of this module is to minimize harmful effects of production and post-production practices on the safety of the produce. The good agricultural practices for controlling food safety hazards are grouped into ten elements (7.1–7.10).

7.1 Site history and management

- i. Site history shall be assessed to identify the risks of contamination to crops grown, from the previous use of chemical and/or biological hazards on the site or on adjoining sites and the risks shall be documented. **(Major)**
- ii. Where significant risks are identified, the site shall not be used for production of fresh produce without first taking some action to manage the risks. **(Critical)**
- iii. If remedial action is required to manage any risk, a monitoring programme shall be put in place to make sure that contamination of the produce does not occur and records of monitoring shall be maintained. **(Critical)**

7.2 Planting material (Propagation material)

- i. If planting material is produced on the farm, a record shall be kept of any fertilizers and/or chemicals used and the reason for usage. The records shall cover the treatments with dates, trade name, and active ingredient, name of operator, method of application, dosages and reason for its use. **(Major)**
- ii. A document that guarantees seed quality (free from injurious pests, diseases, virus, etc.) shall be on the farm. A record/certificate of seed quality shall be kept stating variety purity, variety name, batch number and seed vendor. **(Major)**
- iii. The planting material shall be free of visible signs of pest and disease. In case of in-house propagation, only quality rootstock and scion material shall be used. Alternatively, propagation material shall be sourced from a certified nursery (government / private nurseries / agricultural institutions / accredited tissue culture laboratories). **(Major)**
- iv. If seeds are treated with additives/pesticides (fungicides, insecticides, biocides and/or others), these shall be approved additives/pesticides. The treatment shall be done as per recommended technologies. **(Major)**
- v. If planting material is obtained from another farm or nursery, the name of the farm and date of supply shall be recorded. **(Major)**
- vi. Varieties known to be toxic to humans shall not be grown. **(Major)**

7.3 Genetically modified organisms (GMO)

- i. Planting or trials with GM crops shall be done if permitted by the applicable legislation in the country. **(Critical)**
- ii. If a producer is growing GM crops, as permitted by the country's legislation, this shall be documented. **(Critical)**

- iii. The producer shall inform clients about the status of the product with respect to GMOs. **(Critical)**
- iv. A written plan shall be available for handling GM material (crops and trials), setting out strategies to minimize contamination hazards (such as accidental mixing of adjacent non-GM crops) and maintain product integrity. **(Critical)**
- v. GM crops shall be stored separately from other crops before dispatches to avoid adventitious mixing. **(Critical)**

7.4 Fertilizers and soil additives (Plant nutrient management and fertilizer use)

- i. Assessment of the chemical and biological risks related to fertilizers and soil additives used for each crop grown shall be carried out and records of any significant hazards identified shall be maintained. **(Major)**.
- ii. If any significant hazards are identified, measures shall be taken to minimize the risk of contamination to produce. **(Critical)**
- iii. Application of fertilizers and soil additives should be based upon soil analysis and/or recommendations of National Soil Service Centre/technically competent personnel/institutions/authorities or based on own experience. **(Minor)**
- iv. Fertilizers and soil additives should be selected and applied so as to minimize the risk of heavy metal contamination to produce. **(Minor)**
- v. Fertilizers and soil additives should be applied through recommended application practices at appropriate stages of crop growth. **(Minor)**
- vi. Untreated organic materials shall not be applied where significant risk of contaminating produce is identified. If organic materials are treated on-farm, the method of application, date and duration of treatment shall be recorded. If organic material is obtained from outside the farm and there is a significant risk identified, documents shall be available from the supplier to show that the material has been treated to minimize the risk of contamination to produce. **(Major)**
- vii. Untreated human sewage shall not to be used for production of fresh produce. **(Critical)**
- viii. The facilities for storage, mixing and loading of fertilizer/soil additives and for composting of organic material shall be located and constructed and maintained in a manner to minimize the risk of contamination to production sites and water sources. **(Major)**
- ix. Records shall be maintained for fertilizers and soil additives detailing the source, product name, date and quantity obtained and also for the application detailing the date, name of product, rate and method of application and name of the operators. **(Major)**
- x. The inorganic and organic fertilizers shall be stored separately from harvested farm produce. **(Major)**

7.5 Water (Irrigation/Fertigation)

- i. The water available for irrigation/fertigation shall be free from harmful contaminants. **(Major)**
- ii. Assessment of the source of water used for irrigation, application of chemicals or handling, washing, treating the produce or cleaning and sanitation should be done at least annually to minimize the risks of chemical and biological contamination and records shall be kept. **(Minor)**

- iii. Where water testing is required to assess the risk of contamination, tests shall be conducted at a frequency appropriate to the conditions impacting the water supply and records shall be maintained. **(Critical)**
- iv. Where a significant risk is identified, either a safe alternative water source shall be used or the water treated before use. **(Major)**
- v. Untreated sewage water shall not be used during production or for post-harvest handling. Where treated water is permitted, the water quality shall comply with applicable national regulations. **(Critical)**
- vi. The farmer should maintain irrigation equipment as per manufacturer's guidelines/ manual. **(Minor)**
- vii. The farmer shall employ adequate measures to prevent the flow of water into the fields from undesirable sources such as municipal landfill areas, hospital and industry waste dump areas, etc. **(Major)**

7.6 Chemicals (Plant protection products or other agro and non-agrochemicals)

Chemicals used on the farm can be categorized as agrochemicals that are applied on the farm or produce such as fertilizers, pesticides, seed treatment material, plant growth regulators and additives, and non-agrochemicals such as grease, fuels and oils that are required for other purposes. The requirements for chemicals are:

- i. Only pesticides permitted under a country's regulations shall be used. **(Critical)**
- ii. Chemicals shall be purchased only from registered/licensed suppliers. **(Major)**
- iii. Mixing of two or more chemicals should not be done, unless recommended by technically competent personnel/institutions/authorities. **(Minor)**
- iv. The dosage as recommended by competent authorities shall be applied and excess chemicals shall not be used. **(Major)**
- v. Surplus chemicals shall be disposed of in a manner to avoid contamination to the produce. **(Major)**
- vi. Withholding periods for the interval between chemical application and harvest shall be maintained as per the preharvest interval mentioned on the label. **(Major)**
- vii. Equipment for applying chemicals shall be maintained in working condition and checked for effective operation by a technically competent person. **(Major)**
- viii. Equipment shall be washed properly after every use and washing water shall be disposed of in a manner to avoid contamination to produce. **(Major)**
- ix. Chemicals should be stored in a well-lit, sound and secure structure, which is located and constructed to minimize the risk of contaminating produce and equipped with notices and emergency facilities in the event of a chemical spill. **(Minor)**
- x. Liquid chemicals shall not be stored on shelves above powders. **(Major)**
- xi. Chemicals shall be stored in the original container with a legible label and according to label directions; if chemicals are transferred to another container, the container shall be clearly marked with the name of the chemicals, the dosage to be used and the withholding period. **(Major)**
- xii. Empty chemical containers shall not be reused and shall be collected in a secure place and properly disposed of according to the country's regulations and in a manner to avoid contamination of produce and the environment. **(Major)**

- xiii. Obsolete or expired chemicals shall be clearly identified and kept in a secure place till disposal. These shall be disposed of through official collection channels or in legal off-site areas. **(Major)**
- xiv. A record of chemicals obtained should be maintained, detailing the chemicals used, name of the supplier, date and quantity obtained, date of manufacture and expiry. **(Minor)**
- xv. A record of application for each crop shall be maintained giving details of chemical, reason for application, treatment location, dosage, method, date of application and name of operator. **(Major)**
- xvi. A record of chemicals held in storage shall be maintained detailing chemical name, date and quantities procured and date of complete use or disposal. **(Major)**
- xvii. If chemical residues in excess of maximum residue limits (MRL) are detected in the market where the product is traded or exported, the marketing of the product shall cease and the cause of contamination shall be investigated. Corrective actions shall be taken to prevent recurrence and a record kept of the incident and the actions taken. **(Major)**
- xviii. Non-agrochemicals shall be handled, stored and disposed of in a manner to avoid any risks to food safety. **(Major)**
- xix. Integrated Pest Management (IPM), if implemented, shall require careful consideration of available pest control techniques and the subsequent integration of appropriate measures to discourage the development of pest populations, while keeping the use of plant protection chemicals at minimal level. **(Major)**

7.7 Harvesting and handling produce

- i. Harvested produce shall not be placed directly on the soil, or on the floor of the handling, packing or storage areas. **(Major)**

Equipment, containers and materials

- ii. Equipment, containers and materials that come in contact with produce shall be made of material that will not contaminate the produce and is easy to clean. **(Major)**
- iii. The containers used for storage of chemicals, waste, and other dangerous substances shall be clearly identified and not be used to hold or store produce. **(Major)**
- iv. Equipment and containers shall be regularly maintained to minimize contamination of produce and shall be kept in areas separate from chemicals, fertilizers and soil additives to avoid cross contamination. **(Major)**
- v. Equipment, containers and material shall be checked for soundness and cleanliness before use and cleaned, repaired or discarded as required. **(Major)**.
- vi. The producer shall, at least once a year or as per the legal requirements of the country, have his measuring devices calibrated for ensuring correctness of measurement. **(Major)**

Buildings and structures

- vii. Buildings and structures used for growing, packing, handling and storage of produce shall be constructed and maintained to minimize the risk of contaminating produce. **(Major)**
- viii. Grease, oil, fuel and farm machinery should be segregated from handling, packing and storage areas to prevent contamination of produce. **(Minor)**

- ix. Sewage, waste disposal and drainage systems shall be constructed so as to minimize the risk of contaminating the production site and the water supply. **(Major)**
- x. Lights in the packinghouse or store should be shatter proof or protected with a shatterproof cover. **(Minor)**
- xi. Where equipment and tools that may be sources of physical hazards are located in the same building as handling, packing and storage areas, these should be isolated by a physical barrier or not used during the handling and packing of produce. **(Minor)**

Cleaning and sanitation

- xii. Equipment, tools, containers and materials that may be sources of contamination of produce should be identified and regularly cleaned and sanitized. **(Minor)**
- xiii. Appropriate cleaning and sanitation chemicals should be selected to minimize the risk of these chemicals contaminating produce. **(Minor)**

Animal and pest control

- xiv. Household and farm animals should be kept out of the production site (especially where crops are grown in or close to the ground. and around handling, packing and storage areas. **(Minor)**
- xv. Measures shall be taken to prevent the presence of pests in and around handling, packing and storage areas. **(Major)**
- xvi. Baits and traps used for pest control shall be located and maintained to minimize the risk of contaminating produce. The location of bait traps shall be recorded. **(Major)**

Personal hygiene

- xvii. Workers shall be trained in personal hygiene practices and training records kept. **(Major)**
- xviii. Written instructions on personal hygiene should be provided to workers and displayed in prominent locations. **(Minor)**
- xix. Toilets and hand washing facilities shall be available to workers and maintained in a hygienic condition. **(Major)**
- xx. Sewage shall be disposed of in a manner that minimizes of direct or indirect contamination to produce. **(Major)**

Produce treatment

- xxi. The quality of the water applied to the edible parts of produce shall be equivalent to that of drinking water. **(Major)**
- xxii. Chemicals applied for post-harvest and waxes shall follow the same practices as under the chemical section and shall comply with instructions and recommendations from competent authorities. **(Critical)**
- xxiii. Specific test on produce should be included if required by an importing country. **(Minor)**

Storage and transport

- xxiv. Produce shall be stored and transported separately from goods that are potential sources of chemical, biological or physical contamination. **(Major)**
- xxv. Produce should be stored in cool places and overloading should be avoided. Produce should be covered to reduce moisture loss during transportation. **(Minor)**.
- xxvi. Containers filled with produce shall not be placed in direct contact with soil, where there is a significant risk of contaminating produce from soil. Pallets, if used, shall be checked for cleanliness, chemical spills, foreign objects and pest infestation and rejected if there is any risk of contaminating produce. **(Major)**
- xxvii. Vehicles used for transporting produce shall be kept clean and maintained in good condition. These shall be checked before loading for cleanliness, chemical spills, foreign objects and pest infestation. **(Major)**

7.8 Traceability and recall

- ii. Production sites shall be identified by a name or code and recorded on a site map. **(Major)**
- iii. Packed produce shall be clearly marked with name and identification to enable traceability of the produce to the farm or site where the produce is grown. **(Major)**
- iv. A record detailing the date of delivery and destination of each produce consignment should be maintained. **(Minor)**
- v. Where produce is identified as contaminated or potentially contaminated, it shall be isolated, but if such identification is made after the produce is sold the buyers or consumers shall be notified immediately. **(Critical)**
- vi. The cause of contamination shall be investigated and corrective action taken to prevent its recurrence and a record kept of the incident and the action taken. **(Major)**

7.9 Training

- i. The farmers and workers shall be given sufficient training in the areas of responsibility relevant to GAP and records of training shall be kept. Some of the aspects that need to be included in any training are:
 - a. the proper purchase, handling, storage and use of chemicals, including labelling requirements, selection of chemicals or bio-pesticides, which are approved and recommended by the competent authorities for the crops grown **(Major)**;
 - b. the application of suitable Integrated Pest Management and avoidance of use of inorganic chemicals **(Major)**;
 - c. information and updates on the maximum residue limits (MRL) as specified in the national regulations, Codex standards or the importing country's standards where the produce is to be traded **(Minor)**;
 - d. checking that chemicals are used correctly and before shelf-life/expiry date. **(Minor)**; and
 - e. importance of testing for chemical residues at a frequency required by customers or the market and the method of drawing of samples for testing. **(Major)**.
- ii. The training needs shall be reviewed once a year.

7.10 Documents and records

- i. Records of GAP shall be kept for two years or more in accordance with statutory requirements, if any, or business requirements. **(Major)**
- ii. Obsolete (out-of-date) documents shall be discarded and only current versions shall be in use. **(Major)**

7.11 Review of practices

- i. A review to be carried out at least once a year to identify new or emerging risks related to food safety and actions to correct any deficiencies identified and corrective actions taken. **(Major)**
- ii. A record of the review undertaken and corrective action taken shall be kept. **(Major)**

OPTIONAL REQUIREMENTS

7.12 Fertilizers and soil additives (Plant nutrient management and fertilizer use)

- i. Documents should be made available to demonstrate that application of fertilizers/nutrients (organic or inorganic) is done by a competent/ trained person. **(Minor)**
- ii. Records should be made available to demonstrate that the types and dosages of fertilizers/nutrients are in tune with the soil test – crop response studies and/or recommendations of National Soil Service Centre/ National Research Centre (NRC)/other approved organizations for the crop. **(Minor)**
- iii. A record indicating competence of producer(s) should be maintained to demonstrate their competence and knowledge in determining types and dosages of fertilizers in case advisers are absent. **(Minor)**
- iv. A competent qualified adviser should make the recommendations on the type and quantity of fertilizers/nutrient being used. **(Major)**

7.13 Chemicals (Plant protection products or other agro and non- agrochemicals)

- i. It should be ensured that chemicals are applied correctly by testing produce (in an accredited laboratory) for chemical residues at a predetermined frequency in line with the competent authority requirement of the country where the produce is traded. **(Minor)**
- ii. Records for technical authorization of all chemicals applied along with their quantities should be maintained. **(Minor)**
- iii. A documented procedure should be available for correct handling and filling (as stated on the label) when mixing plant protection chemicals. **(Minor)**
- iv. The application of such formulations should be economically justified and have minimal adverse impact on the environment. **(Minor)**

7.14 Criteria/requirements control

The criteria referred to and levels of controls required with respect to each criteria/requirements of the Food Safety Module are given in the table below. The table also contains the verification indicator to verify the criteria that can be used for the self-assessment or the assessment by the auditor/inspector.

A column is also included for comments. The column “Compliance status” is required to be filled with “Yes” or “No”.

Food Safety Module (FSM)

Clause No.	Requirement (Category)	Verification indicators	Self /Auditor comments	Compliance status
7.	FOOD SAFETY MODULE			
7.1	Site history and management			
i.	Site history shall be assessed to identify the risk of contamination to crops grown from the previous use of chemical and/or biological hazards on the site or on adjoining sites and the risks shall be documented (Major)	Site history assessment record		
ii.	Where significant risks are identified, the site shall not be used for production of fresh produce without first taking some action to manage the risk (Major)	Records and visual evidence		
lii	If remedial action is required to manage any risk, a monitoring programme shall be put in place to make sure that contamination of the produce does not occur and records of monitoring shall be maintained (Major)	Monitoring programme and applicable records		
7.2	Planting material			
i	If planting material is produced on the farm, a record shall be kept of any fertilizers and/or chemicals used and the reason for usage. The records shall cover the treatments with dates, trade name, active ingredient, name of operator, method of application, dosages and reason for its use (Critical)	Records of on-farm planting material treatment		
li	A document that guarantees seed quality (free from injurious pests, diseases, virus, etc.) shall be on the farm. A record/certificate of seed quality shall be kept stating variety purity, variety name, batch number and seed vendor (Major)	Visual confirmation of planting material		
iii.	The planting material shall be free of visible signs of pest and disease. In case of in-house propagation, only quality	Visual check and certificates		

	rootstock and scion material shall be used. Alternatively, propagation material shall be sourced from a certified nursery (government / private nurseries / agricultural institutions / accredited tissue culture laboratories). (Minor)			
iv.	If seeds are treated with additives/pesticides (fungicides, insecticides, biocides and/or others), these shall be approved additives/pesticides and treatment done as per recommended technologies (Major)	Records of seed treatment		
v.	If planting material is obtained from another farm or nursery, the name of the farm and date of supply shall be recorded (Critical)	Traceability records of procured planting material		
vi.	No varieties known to be toxic to humans shall be grown (Major)	Varieties identified and records		
7.3	Genetically Modified Organisms (GMOs)			
i.	Planting or trials with GM crops shall be done if permitted by the applicable legislation in the country (Critical)	A copy of the country regulations and a compliance statement		
ii.	If producer is growing GM crops, as permitted by the country's legislation, this shall be documented (Critical)	GMOs documentation		
iii.	The producer shall inform clients about the status of the product with respect to GMOs (Critical)	Details of communication		
iv.	A written plan shall be available for handling GM material (crops and trials) setting out strategies to minimize contamination hazards, such as accidental mixing of adjacent non-GM crops and maintaining product integrity and the same shall be recorded (Critical)	Written plan and visual check		
v.	GM crops shall be stored separately from other crops before dispatches to avoid adventitious mixing (Critical)	Visual observation and dispatch records		
7.4	Fertilizers and soil additives (Plant nutrient management and fertilizer use)			

I	Assessment of the chemical and biological risks related to fertilizers and soil additives used for each crop grown shall be carried out and records of any significant hazards identified maintained (Minor)	Risk assessment documentation		
li	If any significant hazards are identified, measures shall be taken to minimize the risk of contamination to produce (Critical)	Measures taken and visual assessment		
lii	Application of fertilizers and soil additives should be based upon soil analysis and/or recommendations of technically competent personnel/ institutions/ authorities or based on own experience (Minor)	Application records and recommendation		
Iv	Fertilizers and soil additives should be selected and applied so as to minimize the risk of heavy metal contamination to produce (Minor)	Application records		
v.	Fertilizers and soil additives should be applied through recommended application practices at appropriate stages of crop growth (Minor)	Application records		
Vi	Untreated organic materials shall not be applied where significant risk of contaminating produce is identified. If organic materials are treated on farm, the method of application, date and duration of treatment shall be recorded. If organic material is obtained from outside the farm and there is a significant risk identified, documents shall be available from the supplier to show that the material has been treated to minimize the risk of contamination to produce (Major)	Documentary evidence of compliance		
Vii	Untreated human sewage shall not to be used for production of fresh produce (Critical)	Visual inspection		
viii	The facilities for storage, mixing and loading of fertilizer/soil additives and for composting of organic material shall be	Visual inspection		

	located, constructed and maintained in a manner to minimize the risk of contamination to production sites and water sources (Major)			
Xi	Records shall be maintained for fertilizers and soil additives detailing the source, product name, date and quantity obtained and also for the application detailing the date, name of product, rate and method of application and name of the operators (Major)	Farm dairy/records verified		
x	The inorganic and organic fertilizers shall be stored separately from harvested farm produce (Major)	Visual verification		
7.5	Water (Irrigation/Fertigation)			
i.	The water available for irrigation/fertigation shall be free from harmful contaminants (Major)	Verify		
ii.	Assessment of the source of water used for irrigation, application of chemicals or handling, washing, treating the produce or cleaning and sanitation should be done at least annually to minimize the risks of chemical and biological contamination and records shall be kept (Minor)	Annual assessment records		
iii.	Where water testing is required to assess the risk of contamination, tests shall be conducted at a frequency appropriate to the conditions impacting the water supply and records shall be maintained (Critical)	Test reports		
iv.	Where a significant risk is identified, either a safe alternative water source shall be used or the water treated before use (Major)	Check for safe alternative/ water treatment records		
v.	Untreated sewage water shall not be used during production or for post-harvest handling. Where treated water is permitted, the water quality shall comply with the national regulations (Critical)	Visually/ water quality test reports		

vi.	The farmer should maintain irrigation equipment as per manufacturer guidelines/manual (Minor)	Maintenance schedule		
vii.	The farmer shall employ adequate measures to prevent flow of water into the fields from undesirable sources such as municipal landfill areas, hospital and industry waste dump areas, etc. (Major)	Physical structure present		
7.6	Chemicals (Plant protection products or other agro and non-agrochemicals)			
i	Only pesticides permitted under a country's regulations shall be used (Critical)	List of permitted pesticides and application records		
ii	Chemicals shall be purchased only from registered/licensed suppliers (Major)	Invoices and/or proof of purchase		
iii	Mixing of two or more chemicals should not be done, unless recommended by technically competent personnel/ institutions/authorities (Minor)	Mixing protocols documents		
iv	The dosage as recommended by competent authorities shall be applied and excess chemicals shall not be used (Major)	Recommendations		
v	Surplus chemicals shall be disposed of in a manner to avoid contamination to the produce (Major)	Disposal records		
vi	Withholding periods for the interval between chemical application and harvest shall be maintained as per the preharvest interval mentioned on the label (Major)	Application and harvesting records		
vii	Equipment for applying chemicals shall be maintained in working condition and checked for effective operation by a technically competent person (Major)	Physical verification of equipment and maintenance records		
viii	Equipment shall be washed properly after every use and washing water shall be disposed of in a manner to avoid contamination to produce (Major)	Cleaning records		

ix	Chemicals should be stored in a well-lit, sound and secure structure, which is located and constructed to minimize the risk of contaminating produce and equipped with notices and emergency facilities in the event of a chemical spill (Minor)	Visual inspection on construction, notices and emergency services		
x	Liquid chemicals shall not be stored on shelves above powders (Major)	Physical verification		
xi	Chemicals shall be stored in the original container with a legible label and according to label directions; if chemicals are transferred to another container, the container shall be clearly marked with the name of the chemicals, the dosage to be used and the withholding period (Major)	Physical verification		
xii	Empty chemical containers shall not be reused and shall be collected in a secure place and properly disposed of according to the country's regulations and in a manner to avoid contamination of produce and the environment (Major)	Standard operating procedure (SOP), on-site check and interviews		
xiii	Obsolete or expired chemicals shall be clearly identified and kept in a secure place till disposal. These shall be disposed of through official collection channels or in legal off-site areas (Major)	Ministry of Agriculture with service providers and SOP carried out by farms		
xiv	A record of chemicals obtained should be maintained, detailing the chemicals used, name of the supplier, date and quantity obtained, date of manufacture and expiry (Minor)	Farm diary and proof of purchase		
xv	A record of application for each crop shall be maintained giving details of chemical, reason for application, treatment location, dosage, method, date of application and name of operator (Major)	Application records		
xvi	A record of chemicals held in storage shall be maintained, detailing chemical	Storage records		

	name, date and quantities procured and date of complete use or disposal (Major)			
xvii	If chemical residues in excess of MRL are detected in the market where the product is traded or exported, the marketing of the product shall cease and the cause of contamination shall be investigated. Corrective actions shall be taken to prevent recurrence and a record kept of the incident and the actions taken (Major)	Check for any such case and corrective and preventive action record		
xviii	Non-agrochemicals shall be handled, stored and disposed of in a manner to avoid any risks to food safety (Major)	SOP and on-site verification		
xix	Integrated Pest Management (IPM), if implemented, shall require careful consideration of available pest control techniques and the subsequent integration of appropriate measures to discourage the development of pest population while keeping the use of plant protection chemicals at minimal level (Major)	IPM policy and records		
7.7	Harvesting and handling produce			
i.	Harvested produce shall not be placed directly on the soil, or on the floor of the handling, packing or storage areas (Major)	Physical verification of practices		
	<i>Equipment, containers and materials</i>			
ii.	Equipment, containers and materials that come in contact with produce shall be made of material that will not contaminate the produce and is easy to clean (Major)	Visual inspection		
iii.	The containers used for storage of chemicals, waste, and other dangerous substances shall be clearly identified and not be used to hold or store produce (Major)	Containers present and labeled		
iv.	Equipment and containers shall be regularly maintained to minimize contamination of produce and shall be	Maintenance schedule or visually		

	kept in areas separate from chemicals, fertilizers and soil additives to avoid cross contamination (Major)			
v.	Equipment, containers and material shall be checked for soundness and cleanliness before use and cleaned, repaired or discarded as required (Major)	Visual check		
vi.	The producer shall, at least once a year or as per the legal requirements of the country, have his measuring devices calibrated for ensuring correctness of measurement (Major)	Calibration report		
<i>Buildings and structures</i>				
vii	Buildings and structures used for growing, packing, handling and storage of produce shall be constructed and maintained to minimize the risk of contaminating produce (Major)	Verification of building and structure		
viii	Grease, oil, fuel and farm machinery should be segregated from handling, packing and storage areas to prevent contamination of produce (Minor)	Visual check of segregation		
xi	Sewage, waste disposal and drainage systems shall be constructed so as to minimize the risk of contaminating the production site and the water supply (Major)	Visual verification of drainage systems		
x	Lights in the packing house or store should be shatter proof or protected with a shatter proof cover (Minor)	Shatter proof material		
xi	Where equipment and tools that may be sources of physical hazards are located in the same building as handling, packing and storage areas, these should be isolated by a physical barrier or not used during the handling and packing of produce (Minor)	Isolation of physical hazards		
<i>Cleaning and sanitation</i>				
xii	Equipment, tools, containers and materials that may be sources of contamination of produce should be	Cleaning/sanitization records and visual check		

	identified and regularly cleaned and sanitized (Minor)			
xiii	Appropriate cleaning and sanitation chemicals should be selected to minimize the risk of these chemicals contaminating produce (Minor)	List of chemicals		
	<i>Animal and pest control</i>			
xiv	Household and farm animals should be kept out of the production site (especially where crops are grown in or close to the ground and around handling, packing and storage areas (Minor))	On-site verification		
xv	Measures shall be taken to prevent the presence of pests in and around handling, packing and storage areas (Major)	Pest control records		
xvi	Baits and traps used for pest control shall be located and maintained to minimize the risk of contaminating produce. The location of bait traps shall be recorded (Major)	Visual check and records		
	<i>Personal hygiene</i>			
xvii	Workers shall be trained in personal hygiene practices and training records kept (Major)	Training records		
xviii	Written instructions on personal hygiene should be provided to workers and displayed in prominent locations (Minor)	Written instructions displayed		
xix	Toilets and hand washing facilities shall be available to workers and maintained in a hygienic condition (Major)	Availability of facilities		
xx	Sewage shall be disposed of in a manner that minimizes of direct or indirect contamination to produce (Major)	Manner of disposal of sewage		
	<i>Produce treatment</i>			
xxi.	The quality of the water applied to the edible parts of produce shall be equivalent to that of drinking water (Major)	Test reports		
xxii	Chemicals applied for post-harvest and waxes shall follow the same practices as	Chemical list		

	under the chemical section and shall comply with instructions and recommendations from competent authorities (Critical)			
xxiii	Specific test on produce should be included if required by importing country (Minor)	Test report		
	Storage and transport			
xxiv	Produce shall be stored and transported separately from goods that are potential sources of chemical, biological or physical contamination (Major)	On-site segregation		
xxv	Produce should be stored in cool places and overloading should be avoided. Produce should be covered to reduce moisture loss during transportation. (Minor)	Visual check		
xxvi	Containers filled with produce shall not be placed in direct contact with soil where there is a significant risk of contaminating produce from soil. Pallets, if used, shall be checked for cleanliness, chemical spills, foreign objects and pest infestation and rejected if there is any risk of contaminating produce (Major)	SOP and visual check		
xxvii	Vehicles used for transporting produce shall be kept clean and maintained in good condition. These shall be checked before loading for cleanliness, chemical spills, foreign objects and pest infestation (Major)	Maintenance and cleaning records		
7.8	Traceability and recall			
i	Production sites shall be identified by a name or code and recorded on a site map (Major)	Code and site map		
ii	Packed produce shall be clearly marked with name and identification to enable traceability of the produce to the farm or site where the produce is grown (Major)	Visual check for markings		
iii.	A record detailing the date of delivery and destination of each produce	Records		

	consignment should be maintained (Minor)			
iv	Where produce is identified as contaminated or potentially contaminated, it shall be isolated, but if such identification is made after the produce is sold the buyers or consumers shall be notified immediately (Critical)	SOP and mock drills		
v	The cause of contamination shall be investigated and corrective action taken to prevent its recurrence and a record kept of the incident and the action taken (Major)	Root cause analysis and corrective action records		
7.9	Training			
i. a.	The proper purchase, handling, storage and use of chemicals, including labelling requirements, selection of chemicals or bio-pesticides, which are approved and recommended by the competent authorities for the crops grown (Major)	Records and recommendations		
i.b.	The application of suitable Integrated Pest Management and avoidance of use of inorganic chemicals (Major)	Pest management documented verified		
i.c.	Information and updates on the maximum residue limits (MRL) as specified in the national regulations, Codex standards or the importing country's standards where the produce is to be traded (Minor)	List of permitted MRLs		
i d	Checking that chemicals are used correctly and before shelf-life/expiry date (Minor)	Usage record/label instructions		
i e	Importance of testing for chemical residues at a frequency required by customers or the market and the method of drawing of samples for testing. (Major) .	Test produce frequency with reports		
ii	The training needs shall be reviewed once a year	Review report		
7.10	Documents and records			
I	Records of GAP shall be kept for two years or more in accordance with			

	statutory requirements, if any, or business requirements (Major)	Records retention policy, visual check of records		
li	Obsolete (out-of-date) documents shall be discarded and only current versions shall be in use (Major)	Visual check		
7.11	Review of practices			
i.	A review to be carried out at least once a year to identify new or emerging risks related to food safety and actions to correct any deficiencies identified and corrective actions taken (Major)	Review records		
ii.	A record of the review undertaken and corrective action taken shall be kept (Major)	Review and corrective action records		
	OPTIONAL REQUIREMENTS			
7.12	Fertilizers and soil additives (Plant nutrient management and fertilizer use)			
i.	Documents should be made available to demonstrate that application of fertilizers / nutrients (organic or inorganic) is done by a competent/ trained person (Minor)	Competence records		
ii.	Records should be made available to demonstrate that the types and dosages of fertilizers/nutrients are in tune with the soil test – crop response studies and/or recommendations of National Soil Service Centre/ National Research Centre (NRC)/other approved organizations for the crop (Minor)	Records of type and dosage of inputs		
iii.	A record indicating competence of producer(s) should be maintained to demonstrate their competence and knowledge in determining types and dosages of fertilizers in case advisers are absent (Minor)	Records and knowledge assessed by interviews		
iv.	The recommendations on the type and quantity of fertilizers/nutrients being used should be done by a competent qualified adviser (Major)	Record of type and quantities prescribed by adviser		

7.13	Chemicals (Plant protection products or other agro and non- agrochemicals)			
i.	It should be ensured that chemicals are applied correctly by testing produce (in an accredited laboratory) for chemical residues at a predetermined frequency in line with the competent authority requirement of the country where produce is traded (Minor)	Chemical application dosage records along with test reports		
ii.	Records for technical authorization of all chemicals applied along with their quantities should be maintained (Minor)	Authorization records		
iii.	A documented procedure should be available for correct handling and filling (as stated on the label) when mixing plant protection chemicals (Minor)	Availability of procedure		
iv	The application of such formulations should be economically justified and have minimal adverse impact on the environment (Minor)	Formulation and application records		



Ministry of Agriculture and Animal Welfare / Maldives Food and Drug Authority

Velaanaage (7th floor), Ameer Ahmed Magu, Male', Republic of Maldives
Tel: 960 3033408; Email: info@agriculture.gov.mv Website: www.agriculture.gov.mv

8. ENVIRONMENTAL MANAGEMENT MODULE (EMM)

This section deals with good agricultural practices to be implemented in order to minimize harmful effects of production and production practices on the environment. When addressing these, consideration shall be given to the country's **National Environmental Policy**. These practices are grouped into 13 elements.

8.1 Site history and management

- i. Sites used for production shall comply with the country's recommendations to restrict production on steep slopes. **(Major)**
- ii. For new sites, the risk of causing environmental harm on and off the site shall be assessed and a record kept of the hazards assessed. The risk assessment shall take into consideration prior use of a site, the potential impact of crop production and post-harvest handling on and off the site, and the potential impact of adjacent sites on the new site. If there is a significant risk to the environment identified, the new site shall either not be used for crop production and post-harvest handling or measures to prevent or minimize these potential hazards shall be taken before use. **(Critical)**
- iii. Highly degraded areas shall be managed to avoid further degradation. **(Major)**
- iv. Management of the site activity shall conform to the country's environmental conditions covering air, water, noise, soil, biodiversity and other environmental issues. **(Major)**
- v. A farm layout map shall be maintained showing the crop production sites, environmentally sensitive or degraded areas (if any), storage and mixing areas of chemicals, water storage, watercourse and drains, building structures and roads. **(Major)**

8.2 Planting material

- i. Diseases or pest-resistant planting material should be selected to minimize the use of chemicals. **(Minor)**
- ii. The planting material should be selected based on compatibility with soil type, soil fertility and so that the use of additional nutrient supplying chemicals is avoided. **(Minor)**

8.3 Soil and substrates (Substrate management)

- i. The production practices selected shall be suitable for the soil type and not increase the risk of environmental degradation. **(Major)**
- ii. Where possible soil maps should be used to plan for crop rotation, or a fallow period to increase soil fertility should be encouraged. **(Minor)**
- iii. Production practices to improve and maintain soil structure as well as soil compaction shall be used to avoid erosion. **(Major)**
- iv. If chemicals are used to sterilize soils and substrates, a record shall be kept detailing the site name, name of the product or material, name of the chemicals, the date of application, dosage and method of application and operator's name. **(Critical)**

8.4 Fertilizers and soil additives

- i. Fertilizers and soil additives shall be applied according to the recommendation of the National Soil Service Centre or any other competent source and also considering the crop and soil type to avoid nutrient run-off or leaching. **(Major)**
- ii. Facilities for storage, mixing or loading of fertilizer and soil additives and for composting of organic matter should be located, constructed and maintained to minimize the risk of environmental pollution on and off the site and of pollution of water sources. **(Minor)**
- iii. The equipment used to apply fertilizers and soil additives should be maintained in good condition and annually checked by a technically competent person. **(Minor)**
- iv. The application of fertilizers and soil additives shall be recorded detailing the name of the fertilizer or soil additive, location, date, rate and method of application and the operator's name. **(Major)**

8.5 Water

- i. Irrigation shall be based on crop water requirements, availability of water and soil moisture levels. The irrigation system shall be checked and maintained in good condition to ensure its efficiency during irrigation and to minimize wastage of water. **(Major)**
- ii. Water collection, storage and use shall be managed in accordance with national regulations and a record shall be kept of irrigation use, detailing crop, date, location and volume of water irrigated or duration of irrigation. **(Major)**
- iii. To minimize the risk to the environment, any water discharge or wastewater shall be treated. **(Major)**
- iv. A water management plan to optimize water usage and reduce waste shall be made available. **(Major)**

8.6 Chemicals (Plant protection products and other inputs)

- i. Farmers or workers shall be trained to a level appropriate to their area of responsibility for chemical application. **(Major)**
- ii. Chemicals used for crop protection shall be selected so as to minimize the negative effect on the environment and antagonist organisms of pests and diseases. **(Major)**
- iii. Crop protection measures shall be based on the recommendations of competent authorities or a plant protection organization. **(Major)**
- iv. The use of chemicals shall be minimized by the application of Integrated Pest Management (IPM) and biological control products. **(Major)**
- v. Only chemicals obtained from licensed suppliers and approved by a competent authority for the crop grown shall be used. **(Major)**
- vi. Chemicals shall be applied according to the label directions and guidance from the competent authority. **(Critical)**
- vii. A rotation strategy for chemical application and crop protection measures should be used to avoid pests and diseases resistance. **(Minor)**
- viii. Appropriate volumes of chemicals shall be mixed to minimize the amount of surplus chemical after application. **(Major)**
- ix. Surplus chemical mixes and tank washings shall be disposed of in a manner that minimizes the risk of environmental harm on and off the site. Empty chemical containers shall be collected and disposed of according to national regulations. **(Major)**
- x. Obsolete chemicals shall be identified clearly, kept in secure places and disposed of through official collection systems. **(Critical)**
- xi. The application of chemicals shall be recorded for each crop, detailing the chemicals' names, the reason for application, date of application, location, dosage and method of application and name of operator and, where applicable, a record of chemicals held in storage shall be kept detailing the

chemicals' names, date and quantity of purchase and date when completely used or disposed of. **(Major)**

- xii. Chemicals used for post-harvesting and handling produce shall be stored and disposed of according to national regulations, so as to minimize the risk to the environment. **(Major)**

8.7 Waste management

- i. A waste management procedure shall be documented and followed, including identification of waste products generated during production, harvesting and handling produce, using practices to minimize waste generation, to reuse, recycle waste and dispose of waste. **(Major)**

8.8 Energy efficiency

- i. The use of electricity and fuel shall be reviewed to ensure that efficient operation practices are implemented. **(Major)**
- ii. Machines and equipment should be maintained in good condition to ensure the efficiency of operation and to save energy. **(Minor)**

8.9 Biodiversity

- i. The production plan shall comply with national regulations covering protected plant and animal species and to preserve native plant and animal species, including native vegetation areas, wildlife corridors and vegetation areas on or near the banks of waterways. **(Major)**
- ii. Measures should be applied to control/protect feral animals. **(Minor)**

8.10 Air/Noise

If an offensive odour, or smoke, dust or noise is generated from production practices, management action shall be taken to minimize the impact on neighbouring property and surrounding areas. **(Major)**

8.11 Training

Farmers and workers shall be trained to have appropriate knowledge in their areas of responsibility related to GAP and training records shall be kept. **(Major)**

8.12 Documents and records

- i. Records of GAP shall be kept for two years or more in accordance with statutory requirements, if any, or business requirements. **(Major)**
- ii. Obsolete (out-of-date) documents shall be discarded and only current versions shall be in use. **(Major)**

8.13 Review of practices

- i. A review shall be carried out at least once a year to identify any new and emerging hazards resulting from inputs, processes or hazards affecting the environment. **(Major)**
- ii. A record of the review undertaken and the corrective actions taken shall be kept. **(Major)**

OPTIONAL REQUIREMENTS

8.14 Site history and management

- i. Each producer should maintain a management and conservation plan for protecting biodiversity and wildlife impacted as a result of farming activities. The plan should include a baseline audit to understand biodiversity, identify action to avoid damage and deterioration of habitats and detail measures to enhance biodiversity on the farm. **(Minor)**
- ii. The producer should have a policy and should consider improving the environment for the benefit of the local community and flora and fauna. **(Minor)**

8.15 Soil and substrates (Substrate management)

- i. The producer should participate in substrate recycling programmes for substrates where available. **(Minor)**
- ii. There should be written justification for the use of soil fumigants. **(Minor)**
- iii. A pre-planting interval should be identified and it should comply with the requirements of soil fumigation. **(Minor)**

8.16 Criteria/requirements control

The criteria referred to and levels of controls required with respect to each criteria/requirements of the Environmental Management Module (EMM) are given in the table below. The table also contains the verification indicator to verify the criteria that can be used for the self assessment or the assessment by the auditor/inspector. A column is also included for comments. The “Compliance status” column is required to be filled by “Yes” or “No”.

Environmental Management Module (EMM)

Clause No.	Requirement (Category)	Verification indicators	Self/Auditor comments	Compliance status
8.	ENVIRONMENTAL MANAGEMENT MODULE (EMM)			
8.1	Site history and management			
i	Sites used for production shall comply with the country's recommendations to restrict production on steep slopes (Major)	Site assessed with respect to country regulations		
ii	For new sites, the risk of causing environmental harm on and off the site shall be assessed and a record kept of the hazards assessed; the risk assessment shall take into consideration prior use of a site, the potential impact of crop production and post-harvest handling on and off the site, and potential impact of adjacent sites on the new site; if there is a significant risk to the environment identified, the new site shall either	Risk assessment conducted and hazards recorded		

	not be used for crop production and post-harvest handling or measures to prevent or minimize these potential hazards shall be taken before use (Critical)			
iii	Highly degraded areas shall be managed to avoid further degradation (Major)	Management of degraded areas documented		
iv	Management of the site activity shall conform to the country requirements for environmental conditions covering air, water, noise, soil, biodiversity and other environmental issues (Major)	Records to demonstrate conformity		
v	A farm layout map shall be maintained showing the crop production sites, environmentally sensitive or degraded areas (if any), storage and mixing areas of chemicals, water storage, watercourse and drains, building structures and roads (Major)	Farm layout map with legends/ markings		
8.2	Planting material			
i	Diseases or pest-resistant planting material should be selected to minimize the use of chemicals (Minor)	Selection criteria available		
ii	The planting material should be selected based on compatibility with soil type, soil fertility and so that the use of additional nutrient supplying chemicals is avoided (Minor)	Criteria of planting material recorded/ visual/ interviews		
8.3	Soils and substrate			
i	The production practices selected shall be suitable for the soil type and not increase the risk of environmental degradation (Major)	Verify production practices		
ii	Where possible soil maps should be used to plan for crop rotation, or a fallow period to increase soil fertility should be encouraged (Minor)	Plans based on soil maps		
iii	Production practices to improve and maintain soil structure as well	Visual check		

	as soil compaction shall be used to avoid erosion (Major)			
iv	If chemicals are used to sterilize soils and substrates, a record shall be kept detailing the site name, name of the product or material, name of the chemicals, the date of application, dosage and method of application and operator's name (Critical)	Records		
8.4	Fertilizers and soil additives			
i	Fertilizers and soil additives shall be applied according to the recommendation of competent authorities or any other competent source and also considering the crop and soil type to avoid nutrient run-off or leaching (Major)	Basis of applications and application records		
ii	Facilities for storage, mixing or loading of fertilizer and soil additives and for composting of organic matter should be located, constructed and maintained to minimize the risk of environmental pollution on production related sites and of water sources (Minor)	Visual check		
iii	The equipment used to apply fertilizers and soil additives should be maintained in good condition and annually checked by a technically competent person (Minor)	Equipment maintenance records		
iv	The application of fertilizers and soil additives shall be recorded detailing the name of the fertilizer or soil additive, location, date, rate and method of application and the operator's name (Major)	Fertilizer application records		
8.5	Water			
i.	Irrigation shall be based on crop water requirements, availability of water and soil moisture levels. The irrigation system shall be checked and maintained in good condition to ensure its efficiency during	Irrigation schedule and details Soil moisture may be checked physically		

	irrigation and to minimize wastage of water (Major)			
ii	Water collection, storage and use shall be managed in accordance with country regulations and a record shall be kept of irrigation use, detailing crop, date, location and volume of water irrigated or duration of irrigation (Major)	Irrigation system records		
iii	To minimize the risk to the environment, any water discharge or wastewater shall be treated (Major)	Treatment process and record		
iv	A water management plan to optimize water usage and reduce waste shall be made available (Major)	Water management plan		
8.6	Chemicals (Plant protection products and other inputs)			
i	Farmers or workers shall be trained to a level appropriate to their area of responsibility for chemical application (Major)	Interviews/training records		
ii	Chemicals used for crop protection shall be selected so as to minimize the negative effect on the environment and antagonist organisms of pests and diseases (Major)	Chemical application records		
iii	Crop protection measures shall be based on the recommendations of competent authorities or a plant protection organization (Major)	Recommendation of measures and source of recommendation		
iv	The use of chemicals shall be minimized by the application of Integrated Pest Management (IPM) and biological control products (Major)	IPM effectiveness records		
v	Only chemicals obtained from licensed suppliers and approved by a competent authority for the crop grown shall be used (Major)	Invoice and/or proof of procurement		
vi	Chemicals shall be applied according to the label directions and guidance from the competent authority (Critical)	Application records		

vii	A rotation strategy for chemical application and crop protection measures should be used to avoid pests and diseases resistance (Minor)	Application records		
viii	Appropriate volumes of chemicals shall be mixed to minimize the amount of surplus chemical after application (Major)	Application records		
ix	Surplus chemical mixes and tank washings shall be disposed of in a manner that minimizes the risk of environmental harm on and off the site; empty chemical containers shall be collected and disposed of according to country regulations (Major)	Disposal on-site verification		
x	Obsolete chemicals shall be identified clearly, kept in secure places and disposed of through official collection systems (Critical)	On-site verification		
xi	The application of chemicals shall be recorded for each crop, detailing the chemicals' names, the reason for application, date of application, location, dosage and method of application and name of operator and, where applicable, a record of chemicals held in storage shall be kept detailing the chemicals' names, date and quantity of purchase and date when completely used or disposed of (Major)	Chemical application records		
xii	Chemicals used for post-harvesting and handling produce shall be stored and disposed of according to country regulations (Major)	Visual verification/ interviews		
8.7	Waste management			
	A waste management procedure shall be documented and followed, which includes identification of waste products generated during production, harvesting and handling produce, using practices to minimize waste generation, to	Check procedure, visual inspection and records		

	reuse, recycle waste and dispose of waste (Major)			
8.8	Energy efficiency			
i	The use of electricity and fuel shall be reviewed to ensure that efficient operation practices are implemented (Major)	Electricity and fuel consumption records over time		
ii	Machine and equipment should be maintained in good condition to ensure the efficiency of operation and to save energy (Minor)	Maintenance records/ fuel consumption records		
8.9	Biodiversity			
i	The production plan shall comply with country regulations covering protected plant and animal species and to preserve native plant and animal species, including native vegetation areas, wildlife corridors and vegetation areas on or near the bank of waterways (Major)	Production plan		
ii	Measures should be applied to control/protect feral animals (Minor)	Visual inspection and interview		
8.10	Air/Noise			
i	If an offensive odour, or smoke, dust or noise is generated from production practices, management action shall be taken to minimize the impact on neighbouring property and surrounding areas (Major)	Mitigating action documentation, visual inspection and interview		
8.11	Training			
I	Farmers and workers shall be trained to have appropriate knowledge in their areas of responsibility related to GAP and training records shall be kept (Major)	Training records or Interview		
8.12	Documents and records			
I	Records of good agricultural practices shall be kept for two years or more in accordance with statutory requirements, if any, or business requirements (Major)	Records		

li	Obsolete (out-of-date) documents shall be discarded and only current versions shall be in use (Major)	Records and current documents in circulation		
8.13	Review of practices			
I	A review shall be carried out at least once a year to identify any new and emerging hazards resulting from inputs, processes or hazards affecting the environment (Major)	Review records		
li	A record of the review undertaken and the corrective actions taken shall be kept (Major)	Corrective actions records		
	OPTIONAL REQUIREMENTS			
8.14	Site history and management			
I	i. Each producer should maintain a management and conservation plan for protecting biodiversity and wildlife impacted as a result of farming activities and it should include a baseline audit to understand biodiversity, mention action to avoid damage and deterioration of habitats and detail measures to enhance biodiversity on the farm (Minor)	Conservation and management plan		
li	The producer should have a policy and should consider improving the environment for the benefit of the local community and flora and fauna (Minor)	Policy and implementation		
8.15	Soil and substrates (Substrate management)			
i	The producer should participate in substrate recycling programmes for substrates where available (Minor)	Records		
ii	There should be written justification for the use of soil fumigants (Minor)	Soil fumigation record		
iii	A pre-planting interval should be identified and it should comply with the requirements of soil fumigation (Minor)	Cross check records of soil fumigation and planting		



Ministry of Agriculture and Animal Welfare / Maldives Food and Drug Authority

Velaanaage (7th floor), Ameer Ahmed Magu, Male', Republic of Maldives
Tel: 960 3033408; Email: info@agriculture.gov.mv Website: www.agriculture.gov.mv

9. WORKER HEALTH, SAFETY AND WELFARE MODULE (WHSM)

This module addresses the issues of worker health, safety and welfare. The types of hazards encountered by workers include mechanical, chemical, biological, electrical, solar radiation, noise, stress and fatigue and welfare related. The GAP requirements for controlling hazards related to worker health, safety and welfare are grouped into six elements. Any person who works on the farm, including adult family members, permanent, temporary/casual/sub-contracted labour is considered to be a worker.

9.1 Chemicals

- i. Chemicals shall be handled and applied by trained workers with appropriate knowledge and skills. **(Critical)**
- ii. Chemicals shall be stored in well lit, sound and secure structures with access permitted to authorized persons only. The storage structures shall be such as to minimize the risk of contaminating workers and they shall be equipped with emergency facilities to deal with any chemical spills. **(Major)**
- iii. Chemicals shall be stored in their original containers with legible labels and instructions from competent authorities. If chemicals are transferred to another container, the new container shall be clearly marked with the brand name, dosage of use, and withholding period. **(Major)**
- iv. Reuse of empty chemical containers for purposes other than containing and transporting identical products shall not be permitted. **(Major)**
- v. The Material Safety Data Sheets (MSDS) of all chemicals shall be available. **(Major)**
- vi. Safety instructions shall be provided to workers and displayed in appropriate and readily accessible places. **(Major)**
- vii. First-aid measures shall be available and accessible to treat workers having injuries related to chemicals or other accidents. **(Major)**
- viii. Emergency instructions shall be documented and placed in prominent places within the chemical storage area. **(Major)**
- ix. The workers handling and applying chemicals or entering newly sprayed sites shall be equipped with suitable protective clothing and equipment. Clothes and protective equipment shall be cleaned and stored separately from crop protection chemicals. **(Major)**
- x. People shall not be allowed access to the sites where chemicals are being applied or have just been applied for the appropriate period depending on the type of chemical used, and if chemicals have been applied in public areas or areas to which the public have access, the site shall be marked with warning sign. **(Major)**

9.2 Working conditions

- i. Working conditions shall be suitable for workers but where hazardous conditions cannot be avoided entirely, protective equipment/ clothing shall be provided. **(Major)**

- ii. All farm vehicles, equipment and tools, including electrical and mechanical devices shall be adequately guarded and maintained in good condition to minimize the risk to workers. **(Major)**
- iii. A safety operation manual for operation of equipment, machinery, accessories and their handling practices shall be provided to workers and displayed in prominent places. **(Major)**

9.3 Personal hygiene

- i. Farmers and workers shall be trained on personal hygiene practices for ensuring their own health and well-being. Records of training shall be kept. **(Major)**
- ii. Written instructions on personal hygiene practices shall be provided to workers and displayed in prominent locations. **(Major)**
- iii. Medical check-up of workers should be done at six monthly/ yearly intervals and records kept for five years. **(Minor)**
- iv. Toilets and hand and body washing facilities shall be readily available and maintained in a hygienic condition. **(Major)**
- v. Sewage shall be disposed of in a manner to minimize the risk of contamination to workers. **(Major)**.
- vi. Where employers are to provide health cover to workers, any serious health issue shall be reported to the appropriate authorities. **(Major)**
- vii. Measures shall be applied to minimize the access of domestic and farm animals to production sites and around the handling, packing and storage areas. **(Major)**

9.4 Worker welfare

This is important both for the well being of workers and the productivity of the farm or the processing shed.

- i. Workers shall be treated equally in all respects. **(Major)**
- ii. Workers shall not be exploited because of gender, age or other reasons. **(Major)**
- iii. Living quarters shall be suitable for human habitation and contain basic services and facilities – clean food storage areas, designated eating areas, hand washing facilities and drinking water. **(Major)**
- iv. The minimum working conditions including working hours and minimum wages shall comply with national regulations. **(Critical)**
- v. The workplace shall be secured from dangers of wild animals where these are a hazard. **(Major)**

9.5 Training

- i. Workers shall be informed about the risks with respect to health and safety when working at sites. **(Major)**
- ii. Workers shall be trained in safety requirements (safety drill), accident and emergency response measures, first-aid practices, safe use of chemicals and personal hygiene. **(Major)**
- iii. Workers shall be provided with appropriate training in areas of their responsibility such as vehicles, tools and equipment operation, handling and application of chemicals. **(Major)**
- iv. “Environmental Education and Awareness” programmes and “Human – Animal Coexistence Training” should be organized for all personnel working on the farm. **(Minor)**
- v. The training needs should be reviewed once a year. **(Minor)**

9.6 Documents and records

- i. Records of GAP shall be kept for two years or more in accordance with statutory requirements, if any, or business requirements. **(Major)**
- ii. Obsolete (out-of-date) documents shall be discarded and only current versions shall be in use. **(Major)**

9.7 Review of practices

- i. All practices affecting occupational health and safety of workers shall be reviewed at least once a year to ensure that they are done correctly and actions shall be taken to correct any deficiencies identified. **(Major)**
- ii. A record of the review undertaken and any corrective actions taken should be kept. **(Minor)**
- iii. Actions shall be taken to resolve complaints related to worker health, safety and welfare, and records kept on complaints and action taken. **(Major)**

OPTIONAL REQUIREMENTS

9.8 Worker welfare

- i. A member of management should be identified as responsible for workers' health, safety and welfare. **(Minor)**
- ii. Regular two-way communication meetings should take place between management and workers for which records should be kept and made available. **(Minor)**
- iii. All workers who have contact with plant protection products should be subjected to voluntarily annual health checks. **(Minor)**

9.9 Criteria/requirements control

The criteria referred to and levels of controls required with respect to each criteria/requirements of the Worker Health, Safety and Welfare Module (WSHM) are given in the table below. The table also contains the verification indicator to verify the criteria that can be used for the self assessment and also for the assessment carried out by the auditor/inspector. A column is also included for comments. The column "Compliance status" is required to be filled by "Yes" or "No".

Worker Health, Safety and Welfare Module (WSHM)

Clause No.	Requirement (Category)	Verification indicators	Self/Auditor comments	Compliance status
9.	WORKER HEALTH, SAFETY AND WELFARE MODULE (WSHM)			
9.1	Chemicals			
i	Chemical shall be handled and applied by trained workers with appropriate knowledge and skills (Critical)	Interviews or training records		
ii	Chemicals shall be stored in well lit, sound and secure structures with access permitted to authorized persons only. The storage structures shall be such as to minimize the risk of contaminating workers and they shall be equipped with emergency facilities to deal with cases of a chemical spill (Major)	Visual assessments and Interviews		

iii	Chemicals shall be stored in their original containers with legible labels and instructions from competent authorities. If chemicals are transferred to another container the new container shall be clearly marked with the brand name, dosage of use, and withholding period (Major)	Visual assessments and Interviews		
iv	Reuse of empty chemical containers for purposes other than containing and transporting identical products shall not be permitted (Major)	Visual assessments and interviews		
v	The Material Safety Data Sheets (MSDS) of all chemicals shall be available (Major)	MSDS availability		
vi	Safety instructions shall be provided to workers and displayed in appropriate and readily accessible places (Major)	Safety instruction documents and visual inspection		
vii	First-aid measures shall be available and accessible to treat workers having injuries related to chemicals or other accidents (Major)	First-aid kit availability and content		
viii	Emergency instructions shall be documented and placed in prominent places within the chemical storage area (Major)	Emergency instructions and visual assessment		
ix	The workers handling and applying chemicals or entering newly sprayed sites shall be equipped with suitable protective clothing and equipment. Clothes and protective equipment shall be cleaned and stored separately from crop protection chemicals (Major)	Visual assessment and interviews		
x	People shall not be allowed access to the sites where chemicals are being applied or have just been applied for the appropriate period depending on the type of chemical used, and if chemicals have been applied in public areas or areas to which public have access, the site shall be marked with a warning sign (Major)	Warning signs, visual assessment and interviews		
9.2 Working conditions				
i.	Working conditions shall be suitable for workers but where hazardous conditions cannot be avoided entirely, protective equipment/ clothing shall be provided (Major)	Working conditions and protective clothing visually assessed		
ii	All farm vehicles, equipment and tools, including electrical and mechanical devices			

	shall be adequately guarded and maintained in good condition to minimize the risk to workers (Major)	Visual and maintenance record		
iii	A safety operation manual for operation of equipment, machinery, accessories and handling practices shall be provided to workers and displayed in prominent places (Major)	Safety manual		
9.3	Personal hygiene			
i	Farmers and workers shall be trained on personal hygiene practices for ensuring their own health and well-being. The records of training shall be kept (Major)	Training records or Interviews		
ii	Written instructions on personal hygiene practices shall be provided to workers and displayed in prominent locations (Major)	Written instruction display		
iii	Medical checkup of workers should be carried out at six monthly/ yearly intervals and records kept for five years (Minor)	Records of medical checkup verified		
iv	Toilets and hand and body washing facilities shall be readily available and maintained in a hygienic condition (Major)	Visual assessment		
v	Sewage shall be disposed of in a manner to minimize the risk of contamination to workers (Critical)	Visual assessment and interviews		
vi	Where employers are to provide health cover to workers, any serious health issue shall be reported to the appropriate authorities (Major)	Records		
vii	Measures shall be applied to minimize the access of domestic and farm animals to production sites and around the handling, packing and storage areas (Major)	Visual assessment		
9.4	Worker welfare			
i	Workers shall be treated equally in all respects (Major)	Worker interviews		
ii	Workers shall not be exploited because of gender, age, race or other reasons (Major)	Worker Interviews		
iii	Living quarters shall be suitable for human habitation and contain basic services and facilities – clean food storage areas, designated eating areas, hand washing facilities and drinking water (Major)	Quarters visited		
iv	The minimum working conditions including working hours and minimum wages shall	Payment ledger and interviews of workers		

	comply with the county's regulations (Critical)			
V.	Work place shall be secured from dangers of wild animals where these are a hazard (Major)	Visual inspection and related records		
9.5	Training			
i	Workers shall be informed about the risks associated with health and safety when working at sites (Major)	Workers interview		
ii.	Workers shall be trained in safety requirements (safety drill), accident and emergency response measures, first-aid practices, safe use of chemicals and personal hygiene (Major)	Workers interview and demonstration		
ii	Workers shall be provided appropriate training in areas of their responsibility such as vehicles, tools and equipment operation, handling and application of chemicals (Major)	Training records or workers interviews		
iii	"Environmental education and awareness" programmes and "Human – Animal Coexistence Training" should be organized for all personnel working on the farm (Minor)	Training records		
iv	The training needs should be reviewed once a year (Minor)	Review records		
9.6	Documents and records			
i	Records of GAP shall be kept for two years or more in accordance with statutory requirements, if any, or business requirements (Major)	Records and documents		
ii	Obsolete (out-of-date) documents shall be discarded and only current versions shall be in use (Major)	Document update register/ Records and documents in circulation		
9.7	Review of practices			
i	All practices affecting occupational health and safety of workers shall be reviewed at least once a year to ensure that they are done correctly and actions shall be taken to correct any deficiencies identified (Major)	Records of review		

ii	A record of the review undertaken and any corrective actions taken should be kept (Minor)			
iii	Actions shall be taken to resolve complaints related to worker health, safety and welfare, and records kept on complaints and action taken (Major)	Action taken report		
OPTIONAL REQUIREMENTS				
9.8	Worker welfare			
i	A member of management should be identified as responsible for workers health, safety and welfare (Minor)	Written document on the responsibility/ declaration		
ii	Regular two-way communication meetings should take place between management and workers for which records are kept and made available (Minor)	Minutes/attendance of meeting and interviews		
iii	All workers who have contact with plant protection products should be subjected to voluntarily annual health checks (Minor)	Annual health check records		



Ministry of Agriculture and Animal Welfare / Maldives Food and Drug Authority

Velaanaage (7th floor), Ameer Ahmed Magu, Male', Republic of Maldives
Tel: 960 3033408; Email: info@agriculture.gov.mv Website: www.agriculture.gov.mv

10. PRODUCE QUALITY MODULE (PQM)

This module focuses on aspects that affect the produce quality. Produce quality relates to characteristics such as external appearance (colour, texture, shape and size), internal quality (total soluble solids, turgidity, water content) and hidden quality (nutritional value, shelf life). The producer needs to design its processes to address good agricultural practices to address produce quality. The practices can be grouped under the following ten headings:

10.1 Quality plan

A plan shall be maintained on practices that are critical to manage produce quality during the production, harvesting and post-harvesting stages. **(Major)**

10.2 Planting material

Vegetables and fruits planting material (seeds, rootstock, scion) should be obtained from farms or nurseries certified or recognized by the competent authority of the country of origin or other reliable sources to ensure the good quality and freedom from diseases to satisfy market requirements. Records of the planting material should be maintained. **(Minor)**

10.3 Fertilizers and soil additives

The application of fertilizers and soil additives shall be based on the crop grown and recommendations from the competent authority and shall be properly applied to ensure their effectiveness. The facilities used for composting shall be constructed and maintained so as to prevent cross contamination of the crop. Records of the application of fertilizers or soil additives shall be maintained giving details of quantity and date of application, the name of the person who applied the fertilizers and additives, and the provider. **(Major)**

10.4 Water

- i. Irrigation should be based on water requirements of the crop grown, water availability and soil moisture levels. Records detailing the date of irrigation, location, duration and volume of water applied shall be kept. **(Major)**

10.5 Chemicals

- i. Farmers or workers shall be trained to a level appropriate to their responsibility for chemicals application. **(Major)**
- ii. Chemicals shall be obtained from licensed suppliers and applied according to label directions or permit issued by a competent authority for the crop grown. **(Major)**
- iii. A chemical rotation strategy and other crop protection measures shall be practiced to avoid pest resistance to chemicals. **(Major)**
- iv. Equipment used to apply chemicals should be maintained in good condition and be working properly. **(Minor)**
- v. Records shall be maintained, giving the name of chemical applied, reason for application, date and dosage of application, method of application, weather condition and the name of person who applied the chemicals. **(Major)**

10.6 Harvesting and handling produce

These include the following aspects:

Harvesting

- i. A maturity index is used to determine the appropriate time to harvest produce. Harvesting shall be carried out at the coolest time of the day, namely early in the morning. **(Major)**
- ii. The equipment, containers, liners used shall be suitable for harvesting and shall be cleaned before using. The container shall not be overfilled. Liners should be used to cover the rough surfaces or other alternate means used to prevent bruising. Containers should be covered to reduce moisture loss. The containers shall not be stacked on top of each other unless these are specially designed to avoid produce damage when stacked. **(Major)**
- iii. Harvested produce shall be placed in the shade and leave the field as early as possible. **(Major)**.

Handling and packaging produce

- i. Clean water shall be used for handling, washing and treatment of produce and the water changed regularly to avoid spoilage organisms damaging the produce. **(Major)**
- ii. Excessive drops and impacts shall be avoided to minimize mechanical damage to the produce. **(Major)**
- iii. Packing and storing should take place in covered and in cool places. **(Minor)**
- iv. Produce shall not be placed directly on the soil or floor surfaces. **(Major)**
- v. Produce shall be graded and packed according to the customer or market requirements. **(Major)**

Storage and transport

- i. Produce shall be quickly transported to its destination. If there is to be a long wait for transport, produce should be held at the lowest temperature possible. **(Major)**
- ii. Produce shall be covered during transportation and maintained at appropriate temperature to avoid quality loss. **(Major)**
- iii. Checking for cleanliness and removing all sources of contamination should be done. Mixing incompatible produce during transport should be avoided. **(Minor)**

10.7 Traceability and recall system

- i. Produce from different sites shall be identified by name or code, and the same shall be placed on the containers and suitably recorded. **(Major)**
- ii. A record shall be kept of the date of supply, quantity of produce and destination of each consignment. **(Major)**

10.8 Training

Farmers and workers should be trained in the area of their responsibility relevant to GAP and a record of training kept. **(Minor)**

10.9 Documents and records

- i. Records of GAP shall be kept for two years or more in accordance with statutory requirements, if any, or business requirements. **(Major)**

- ii. Obsolete documents shall be discarded and only current versions shall be in use. **(Major)**

10.10 Review of practices

- i. All practices shall be reviewed once a year to ensure that they are done correctly and action shall be taken to correct any deficiencies identified. A record shall be kept to show that all practices have been reviewed and any corrective actions taken documented. **(Major)**
- ii. Action shall be taken to resolve complaints related to produce quality and a record kept of the action taken related to the complaint. **(Major)**

OPTIONAL REQUIREMENTS

10.11 Chemicals

- i. A documented procedure should be available for correct handling and filling as stated on the label when mixing plant protection products. **(Minor)**

10.12 Harvesting and handling produce

- i. When packed produce is stored on farm, temperature and humidity should be recorded. **(Minor)**

10.13 Criteria/requirements control

The criteria referred to and levels of controls required with respect to each criteria/requirements of the Produce Quality Module (PQM) are given in the table below. The table also contains the verification indicator to verify the criteria that can be used for the self-assessment and for the assessment by the auditor/inspector. A column is also included for comments. The column "Compliance status" is required to be filled by "Yes" or "No".

Produce Quality Module (PQM)

Clause No.	Requirement (Category)	Verification statement	Self/Auditor comments	Compliance status
10	PRODUCE QUALITY MODULE (PQM)			
10.1	Quality plan			
i.	A plan shall be maintained on practices that are critical to manage produce quality during the production, harvesting and post-harvesting stages (Major)	Check the plan		
10.2	Planting material			
i.	Vegetables and fruits planting material (seeds, rootstock, scion) should be obtained from farms or nurseries certified or recognized by the Plant Health Office or other reliable sources to ensure the good quality and freedom from diseases to satisfy market requirements. Records of the planting material should be maintained (Minor)	Check Invoices/delivery notes for recognitions/ approvals Check records		
10.3	Fertilizers and soil additives			
i.	Fertilizers and soil additives shall be based on the crop grown and recommendations from the competent authority and shall be properly applied to ensure their effectiveness. The facilities used for composting shall be constructed and maintained so as to prevent cross contamination of the crop. Records of the application of fertilizers or soil additives shall be maintained giving details of quantity and date of application and the name of the person who applied the fertilizers and additives as well as the provider (Major)	Recommendations and application records and visual assessments.		
10.4	Water			
i.	Irrigation should be based on water requirements of the crop grown, water availability and soil moisture levels. Records detailing the date of irrigation, location, duration and volume of water applied shall be kept (Major)	Irrigation records		
10.5	Chemicals			

i	Farmers or workers shall be trained to a level appropriate to their responsibility for chemicals application (Major)	Training records and/or interviews		
ii	Chemicals shall be obtained from licensed suppliers and applied according to label directions or permit issued by a competent authority for the crop grown (Critical)	Invoices/delivery notes		
iii	A chemical rotation strategy and other crop protection measures shall be practiced to avoid pest resistance to chemicals (Major)	Rotation strategy and interviews		
iv	Equipment used to apply chemicals should be maintained in good conditions and should be working properly (Minor)	Equipment maintenance records and visual assessments		
v	Records shall be maintained, giving the name of chemical applied, reason for application, date and dosage of application, method of application, weather condition and the name of person who applied the chemicals (Major)	Chemical application records		
10.6	Harvesting and handling produce			
i	A maturity index is used to determine the appropriate time to harvest produce. Harvesting shall be carried out at the coolest time of the day, namely early in the morning (Major)	Maturity index available and harvesting records		
ii	The equipment, containers, liners used shall be suitable, used appropriately for harvesting and shall be cleaned before using. The container shall not be overfilled. Liners should be used to cover the rough surfaces or other alternate means used to prevent bruising. Containers should be covered to reduce moisture loss. The containers shall not be stacked on top of each other unless these are specially designed to avoid produce damage when stacked (Major)	Visual assessment		
iii	Harvested produce shall be placed in the shade and leave the field as early as possible (Major)	Visual assessment		
	Handling and packaging produce			
iv	Clean water shall be used for handling, washing and treatment of produce and the water changed regularly to avoid spoilage organisms damaging the produce (Major)	Visual observation		

v	Excessive drops and impacts shall be avoided to minimize mechanical damage to the produce (Major)	Visual assessment		
vi	Packing and storing should take place in covered and in cool places (Minor)	Visual assessment		
vii	Produce shall not be placed directly on the soil or floor surfaces (Major)			
viii	Produce shall be graded and packed according to the customer or market requirements (Major)	Packing QC records and visual assessment		
Storage and transport				
ix	Produce shall be quickly transported to its destination. If there is to be a long wait for transport, produce should be held at the lowest temperature possible (Major)	Visual assessment/Transport records		
x	Produce shall be covered during transportation and maintained at appropriate temperature to avoid quality loss (Major)	Visual checks/Transport records		
xi	Checking for cleanliness and removing all sources of contamination should be done. Mixing incompatible produce during transportation should be avoided (Minor)	Visual checks/Transport records		
10.7	Traceability and recall system			
i.	Produce from different sites (as applicable) shall be identified by name or code, and the same shall be placed on the containers and suitably recorded (Major)	Records of traceability and drawing sample to check one-step forward and one-step backward		
ii.	A record shall be kept of the date of supply, quantity of produce and destination of each consignment (Major)	Records available		
10.8	Training			
	Farmers and workers should be trained in the area of their responsibility relevant to GAP and a record of training kept (Minor)	Training records and interview		
10.9	Documents and records			
i	Records of GAP shall be kept for two years or more in accordance with statutory requirements, if any, or business requirements (Major)	Records		
ii	Obsolete documents shall be discarded and only current versions shall be in use (Major)	Records and documents		

10.10	Review of practices			
i	All practices shall be reviewed once a year to ensure that they are done correctly and action shall be taken to correct any deficiencies identified. A record shall be kept to show that all practices have been reviewed and any corrective actions taken documented (Major)	Records of review		
ii	Action shall be taken to resolve complaints related to produce quality and a record kept of the action taken related to the complaint (Major)	Action taken reports		
	OPTIONAL REQUIREMENTS			
10.11	Chemicals			
i	A documented procedure should be available for correct handling and filling as stated on the label when mixing plant protection products (Minor)	Check for procedure		
10.12	HARVESTING AND HANDLING PRODUCE			
	When packed produce is stored on farm, temperature and humidity should be recorded. (Minor)	Check records		

11. GENERAL REQUIREMENTS MODULE (GRM)

This module is on general requirements that needs to be met by farms (single or as group) in addition to the four modules. It also contains criteria for internal control system for farms that seek to apply for recognition as a group or group certification.

Section-A (At farm level)

11.1 Legal

The land under certification shall either be owned by the applicant, or an agreement between the legal owner of land and the applicant shall be in place granting authorization to the applicant to carry out the agricultural operation and certification. **(Major)**

11.2 Visitor requirements

Any visitors to the farm or place where operations are being carried out in relation to GAP shall follow the practices applicable to farm workers to ensure the safety of the produce as well their own safety. **(Major)**

11.3 Redressal of complaints

- i. All complaints shall be adequately registered and addressed. A record of action taken shall be maintained.
- ii. Each farm to address complaints effectively and a record of the same shall be available. **(Major)**

11.4 Site details

Each farm and production unit shall be referenced on a farm plan or map. **(Major)**

11.5 Internal inspection

. Internal inspection shall be carried out a minimum of once a year **(Major)**

11.6 Calibration

The producer shall, where applicable, have his equipment calibrated as per the legal requirements of the country. **(Major)**

Section B (Group requirements)

This section is applicable only if a number of growers organise themselves as a group for carrying out farming operation and wish to apply for recognition or certification as a single legal entity. They would be required to not only implement the requirements of the GAP standard but also to have an internal control system in place. All the requirements stipulated in this arrangement are required to be written in a formal contract accompanied with policies and procedures for the operation of group. The basic requirements to be implemented are as follows:

GAP/SO/DOC 01A Ver.0 Mar. 15

11.7 Legal requirements

- i. Documentation shall be available to demonstrate that the producer group is a registered/legal entity. **(Major)**
- ii. Producer group shall have a clearly defined structure to implement GAP and own responsibility for production and management of the produce. **(Major)**
- iii. The administrative/management structure of the producer group shall clearly establish relationships among members of the producer group. **(Major)**.

11.8 Written contract

A written signed contract shall be available between each member of the group and the group (legal entity), which shall cover individual details, farm details, obligations (to abide by the requirements laid by producer group and the GAP standard, sanctions in case of non-compliance with GAP/any other internal requirements. **(Major)**

11.9 Producer register

A register shall be maintained containing details of all members in the group with their current implementation status. This shall include details of producer group, registered planting/production area, crops cultivated, details of internal audit and its findings etc. **(Major)**

11.10 Structure of organization

- i. The organization structure shall demonstrate availability of appropriate resources to carry out operations as per the GAP standard. **(Major)**
- ii. The group shall assess key roles and responsibilities for maintaining requirements of the GAP standard. **(Major)**
- iii. The authority matrix for approval and decision-making shall be defined. **(Major)**

11.11 Competency and training to staff

- i. The group shall assess knowledge and competency of the key personnel managing the group certification such as the trainer, quality manager, internal auditor, group manager etc. **(Major)**
- ii. The group shall ensure that all staff assigned to operate the GAP certification are well trained and competent and capable of functioning according to requirements. **(Major)**
- iii. The group shall determine knowledge and competency, required training and qualification of designated staff, which shall be in line with GAP requirements and the group shall keep a record on qualifications and training of designated staff. **(Major)**
- iv. The group shall ensure that internal inspectors are trained and evaluated to ensure compliance with audit procedures and interpretation of GAP requirements. **(Major)**

11.12 Quality manual

- i. The group shall develop a “quality manual” to include the scope of certification, the management and internal control, policy and working procedures and policy for member registration and designated members. **(Critical)**
- ii. The manual shall be periodically verified and updated to ensure compliance with GAP/ other requirements of the producer group. **(Major)**
- iii. The group shall ensure that the system of updating information and awareness of developments, dissemination and legislative revision (latest version) in relation to GAP compliance is in place so that the manual doesn’t become obsolete. **(Major)**

11.13 Document control

- i. All documents shall be under a document control system. **(Critical)**
- ii. There shall be a master list of all documents as required by the GAP scheme such as the quality manual, working procedures, instructions, record formats and external origin documents. **(Major)**.
- iii. Records shall be available to demonstrate effective document control. **(Major)**
- iv. There shall be a procedure for using external origin documents if used as a part of the operational requirements. **(Major)**

11.14 Complaint handling

- i. A procedure for handling of all complaints regarding GAP shall be available which shall cover complaint receipt, registration, problem identification, analysis of the cause of the complaint, solution and follow-up. **(Major)**
- ii. There shall be a defined timeline for complaint handling. **(Major)**
- iii. Records relating to complaints shall be maintained. **(Major)**
- iv. There shall be provisions to maintain confidentiality, where applicable. **(Major)**

11.15 Internal audit

- i. A system to audit the compliance with GAP of each member and compliance with the requirements of the internal control system of the producer group shall be in place. **(Critical)**
- ii. The competency requirement of the internal auditor shall be defined. **(Major)**
- iii. A procedure documenting the internal audit procedure by an internal auditor, review and action taken on findings of the internal audit shall be available. **(Major)**

11.16 Non-compliance, corrective actions and sanctions

- i. A procedure for identifying and recording corrective actions shall be available and implemented. This shall include root cause analysis of non-compliance, responsibilities and time frame for corrective action. **(Critical)**
- ii. Sanctions and Infringement – Producer group shall have procedures for imposing sanctions on members not complying with requirements. These shall include prompt notification to certification body of suspension or revocation of its registered member. The

provision of sanctions and infringement shall be a part of the contract between each producer and producer group. **(Critical)**

- iii. All information pertaining to non-compliance, corrective action, and sanctions shall be recorded. **(Major)**

11.17 Product traceability and segregation

- i. All GAP certified products shall be traceable to individual registered producers and their farms. Effective systems and procedures shall be in place to reduce the risk of wrong labelling or mixing of GAP with non-GAP products. **(Critical)**
- ii. The harvesting area shall be managed for registered produce so that produce are identifiable and traceable from the purchase order through post-harvest handling, storage and distribution. **(Critical)**

11.18 Withdrawal of certified product

A system for product recall and withdrawal shall be in place and this shall be reviewed annually. **(Critical)**

11.19 Common packhouse

If the group has one or more common packhouse within its farming operation, then every packhouse shall be required to meet the GAP requirements. **(Critical)**

11.20 Agreement with buyer

A written agreement shall be entered into between a group and its buyers cautioning against misuse the of GAP certification claims, as applicable. **(Critical)**

11.21 Subcontracting

In case subcontractors are used, a subcontracting procedure shall be in place **(Critical)** ensuring:

- a. such external services are in compliance with GAP requirements;
- b. assessment of subcontractor competency and records of the assessment are maintained; and
- c. subcontractor operates in compliance with the group's quality system.

11.22 Criteria/requirements control

The criteria referred to and levels of controls required with respect to each criteria/requirements of the Produce Quality Module (PQM) are given in the table below. The table also contains the verification indicator to verify the criteria that can be used for the self-assessment and the assessment by the auditor/inspector. A column is also included for comments. The column "Compliance status" is required to be filled by "Yes" or "No".

General Requirements Module (GRM)

Clause No.	Requirement (Category)	Verification indicators	Self/Auditor comments	Compliance status
11. GENERAL REQUIREMENTS MODULE (GRM)				
	Section-A (At farm level)			
11.1	Legal The land under certification shall either be owned by the applicant, or an agreement between the legal owner of land and the applicant shall be in place authorizing applicant to carry out the agricultural operation and certification (Major)	Legal documents		
11.2	Visitor requirements Any visitors to the farm or place where operations are being carried out in relation to GAP, shall follow the practices applicable to farm workers to ensure the safety of the produce as well their own safety (Major)	Display of requirements for visitors including instructions		
11.3	Redressal of complaints			
i	All complaints shall be adequately registered and addressed. A record of action taken shall be maintained (Major)	Records of action taken		
ii	An effective complaints handling mechanism shall be available (Major)	Complaint handling mechanism		
11.4	Site details Each farm and production unit shall be referenced on a farm plan or map. (Major)	Farm map		
11.5	Internal inspection Internal inspection shall be carried out a minimum of once a year (Major)	Records		
11.6	Calibration The producers shall, where applicable, have their equipment calibrated as per the legal requirements of the country (Major)	Calibration reports/ certificates		
	Section B (Group requirements)			
11.7	Legal requirements			

i	Documentation shall be available to demonstrate that the producer group is a registered/legal entity (Major)	Legal documents		
ii	Producer group shall have a clearly defined structure to implement GAP and own responsibility for production and management of the produce (Major)	Organization structure		
lii	The administrative/management structure of the producer group shall clearly establish a relationship among members of the producer group (Major)	Organization structure showing relationships		
11.8	Written contract A written signed contract shall be available between each member of the group and the group (legal entity), which shall cover individual details, farm details, obligations to abide by the requirements laid down by producer group and the GAP standard, sanctions in case of non-compliance with GAP/any other internal requirements (Major)	Signed contracts		
11.9	Producer register			
	A register shall be maintained containing details of all the members in the group with their current implementation status and this shall include details of producer group, registered planting/production area, crops cultivated details of internal audit and its findings, etc (Major)	Member register		
11.10	Structure of organization			
i	The organization structure shall demonstrate availability of appropriate resources to carry out operations as per the GAP standard (Major)	Co-relation of organization structure with existing manpower		
ii	The group shall assess key roles and responsibilities for maintaining requirements of the GAP standard (Major)	Verification of roles and responsibilities		
iii	The authority matrix for approval and decision-making shall be defined (Major)	Authority matrix defined		
11.11	Competency and training of staff			
i	The group shall assess knowledge and competency requirement of the key personnel managing the group certification such as the trainer, quality manager, internal auditor, group manager (Major)	Records of competency assessment against defined requirements		

li	The group shall ensure that all staff assigned to operate on GAP certification are well trained and competent and capable of functioning according to requirements (Major)	Interviews and training records		
iii	The group shall determine knowledge and competency, required training and qualification of designated staff in line with GAP requirements and shall keep a record on qualifications and training of designated staff (Major)	Qualification Check records and interviews		
iv	The group shall ensure that internal inspectors are trained and evaluated to ensure compliance with audit procedures and interpretation of GAP requirements of internal and external auditor/inspector (Major)	Witness reports and training records		
11.12	Quality manual			
i	The group shall develop a quality manual to include the scope of certification, the management and internal control, policy and working procedures and policy for member registration and designated members (Critical)	Quality manual availability and completeness		
ii	The quality manual shall be periodically reviewed and updated to ensure compliance with GAP/ other requirements of the producer group (Major)	Check for review and updating of QM		
iii	The group shall ensure that the system of updating information and awareness on developments, dissemination and legislative revision (latest version) in relation to GAP compliance is in place (Major)	Interviews and documents		
	11.13 Document control			
i	All documents are under a document control system (Critical)	Check document identification system and randomly verify documents		
ii	There shall be a master list of all documents as required by the GAP scheme such as the quality manual, working procedures, instructions, record formats and external origin documents (Major)	Master list available for inspection		
iii	Records are available to demonstrate effective document control (Major)	Document control procedure		

iv	There shall be a procedure for using external origin documents if used as a part of their operational requirement (Major)	Procedure for using outside references/documents		
11.14	Complaint handling			
i	A procedure for handling of all complaints regarding GAP shall be available which shall cover complaint receiving, registering, problem identification, analysis of the cause of the complaint, solution and follow up (Major)	Complaint handling procedure		
ii	There shall be a defined timeline for complaint handling (Major)	Complaint handling procedure		
iii	Records relating to complaints shall be maintained (Major)	Records and formats		
iv	There shall be provisions to maintain confidentiality, where applicable (Major)	Verify provisions to ensure confidentiality		
11.15	Internal audit			
i	A system to audit the compliance with GAP of each member and compliance with the requirements of the internal control system of the producer group shall be in place (Critical)	internal inspection checklist and reports		
ii	The competency requirement of the internal auditor shall be defined (Major)	Documents		
iii	A procedure documenting the internal audit procedure by an internal auditor, review and action taken on findings of internal audit shall be available (Major)	Internal audit checklist of internal auditor and statement of corrective and preventive action		
11.16	Non-compliance, corrective actions and sanctions			
i	A procedure for recording of corrective actions shall be available and implemented. This shall include root cause analysis of non-compliance, responsibilities and time frame for corrective action (Critical)	Procedure for handling corrective actions		
ii	Sanctions and Infringement – producer group shall have procedures for imposing sanctions on members not complying with requirements. These shall include prompt notification to CB of suspension or revocation of its registered member. The provision of sanctions and infringement shall be a part of	Sanction and infringement mechanism		

	the contract between each producer and producer group (Critical)			
iii	All information pertaining to non-compliance, corrective action, and sanctions shall be recorded (Major)	Records available		
11.17	Product traceability and segregation			
i	All GAP certified products shall be traceable to individual registered producers and their farms. Effective systems and procedures shall be in place to reduce the risk of wrong labelling or mixing of GAP with non-GAP products (Critical)	Traceability systems and traceability exercise		
ii	The harvesting area shall be managed for registered produce so that produce are identifiable and traceable from the purchase order through post-harvest handling, storage and distribution (Critical)	Traceability systems		
11.18	Withdrawal of certified products A system for product recall and withdrawal shall be in place and this shall be reviewed annually (Critical)	Product recall and withdrawal mechanism available and reviewed		
11.19	Common packhouse If the group has one or more common packhouse within its farming operation, then every packhouse shall require to meet the GAP requirements (Critical)	Inspect all packhouses		
11.20	Agreement with buyer A written agreement shall be entered into between a group and each of their buyers cautioning against the misuse of GAP certification claims, as applicable (Critical)	Check agreement		
11.21	Subcontracting In case subcontractors are used, a subcontracting procedure shall be in place (Critical)	Subcontracting procedure		

Appendix 1.1

Integration of Modules

Standard requirement	Food Safety FSM	Environmental Management EMM	Workers Health Safety and Welfare WHSM	Produce Quality PQM
Site history and management	X	X		
Soils and substrates (substrate management)		X		
Quality plan				X
Planting material (propagation material)	X	X		X
Genetically modified organisms (GMOs)	X			
Fertilizers and soil additives	X	X		X
Water	X	X		X
Chemicals (plant protection product and other inputs)	X	X	X	X
Harvesting and handling produce	X			X
Traceability and recall system	X			X
Waste management		X		
Energy efficiency		X		
Biodiversity		X		
Air/noise		X		
Working conditions			X	
Personal hygiene			X	
Worker welfare			X	
Training	X	X	X	X
Documents and records	X	X	X	X
Review of practices	X	X	X	X

GLOSSARY

Audit – An audit is a systematic, independent and documented process for obtaining audit evidence (records, statements of fact, documents or other information that is relevant and verifiable) and evaluating it objectively to determine the extent to which the audit criteria (set of policies, procedures or scheme requirements) are fulfilled. In this scheme, audit and inspection terms are used synonymously.

Auditor – A person that is authorized to undertake audits. In this scheme, the terms auditor and inspector are used synonymously.

Composting – A managed process where organic materials are subjected to moisture, heat and micro-organisms for a specified period to produce a product known as compost.

Customer – A business or person who buys or receives produce, for example a packer, marketing group distributor, wholesaler, exporter, processor, retailer or consumer.

Environmental hazard – A source of environmental harm or a situation with the potential to cause harm to the environment.

Fertigation – The application of fertilizers/nutrients through an irrigation system.

Food safety hazard – Any chemical, biological, physical substance or property that can make fruit and/or vegetables unacceptable and may pose a health risk to consumers.

Fumigation – The application of a chemical to control pests in the soil or substrate, such as insects, diseases and weeds in a protected condition.

Hazard – An adverse effect or harm to produce, the environment or workers.

Integrated Pest Management – The careful consideration of all available pest control techniques and the subsequent integration of appropriate measures that discourage the development of pest populations and keep plant protection products and other interventions to levels that are economically justified and reduce or minimize hazards to human health and the environment.

Inspection – An inspection is an organized examination or formal evaluation exercise. The results are usually compared to specified requirements and standards for determining whether the item or activity is in line with the requirements. In this scheme, the terms audit and inspection are used synonymously.

Inspector – Any personnel that carry out an inspection. In this scheme, the terms auditor and inspector are used synonymously.

Intervention – If after the use of IPM techniques, monitoring shows a threshold has been reached then an intervention is needed by way of a chemical approach.

Maximum residue limit (MRL) – The maximum amount of a chemical that is permitted by a competent authority in fruit and vegetables for sale for human consumption.

Monitoring – This is the systematic inspection of crop and its surroundings for pests and diseases including its eggs and larvae so that preventive measures can be taken.

Obsolete chemical – A chemical that is no longer suitable for use. For example, approval for use of the chemical may be withdrawn, the chemical expiry date passed, the container may be damaged and the chemical soiled.

Prevention – This includes the adoption of cultivation techniques and management practices at farm level to prevent or reduce the incidence and/or intensity of pest, diseases and weeds.

Producer – The farmer, company or the person legally responsible for the production at farm level.

Producer group – A group of farmers coming together as a single unit for implementation and/or certification with respect to the requirements stipulated in the GAP standards.
