

MINISTRY OF AGRICULTURE & RURAL DEVELOPMENT



**Good Agricultural Practices for production
of fresh fruit and vegetables in Vietnam**

Hà Nội, 2008

Copyright : ©VietGAP

Copyright protects this VietGAP publication. Except for purposes permitted by the Copyright Act, this document is protected and any other reproduction by whatsoever means is prohibited without the prior written permission of the Ministry of Agricultura & Rural Development.

Chapter I

INTRODUCTION

1. Scope and target of VietGAP

1.1. Scope of VietGAP: The Vietnamese Good Agricultural Practice for production of fresh fruit and vegetables is aimed at preventing or minimising the risk of hazards which occur during the production, harvesting and postharvest handling. The hazards covered in VietGAP include food safety, produce quality, environmental impacts and health, safety and welfare for Vietnamese workers (VietGAP).

1.2. Target application: VietGAP is designed to assist individual and/or organisation inside or outside Vietnam to produce, assess and certify the safety of fruit and vegetables which are produced in Vietnam under the guidelines of Vietnamese good agricultural practices.

1.3. The purposes of implementation of VietGAP for production of fresh fruit and vegetables are:

1.3.1. to enhance the responsibility in production and management of food safety of individual and/or organisation.

1.3.2. to create the approval feasibility of VietGAP food safety for individual and/or organisation.

1.3.3. to ensure the transparency, traceability and recall of produce.

1.3.4. to enhance the produce quality and economic efficiency of fruit and vegetable production in Vietnam.

2. Glossary

2.1. VietGAP are standards and guidelines to assist individuals and/or organisations, producers and consumers to prevent risks of food safety, produce quality and workers in production, harvesting and postharvest handling of fresh fruit and vegetables. These also serve to protect environment and use for product identification, traceability and recall.

2.2. VietGAP for production of fresh fruit and vegetables which was based on ASEANGAP, EUREPGAP/GLOBALGAP and FRESHCARES is intended to enhance the harmonization of product standards and facilitate the trade of fruit and vegetables in ASEAN and the world, towards the establishment of sustainable agriculture in Vietnam.

2.3. Individual and/or organisation means business, trading company, co-op, union and farmer/grower who produces, trades, audits and certifies commodity of fruit and vegetables in large-scale under the guidelines of VietGAP.

Chapter II

GOOD AGRICULTURAL PRACTICES FOR PRODUCTION OF FRESH FRUIT AND VEGETABLE (VietGAP)

1. Site assessment and selection

- 1.1. The risk of contaminating produce with chemical, biological and physical hazards of the site or from adjoining sites for VietGAP fresh produce is investigated, assessed and conforms to the law and regulation requirements of local and central governments of Vietnam.
- 1.2. Site selection: Site for VietGAP fresh produce is satisfied by the Vietnam's laws and regulations in terms of environment, soil and water. In the case the site where is unsuitable for production of fresh produce, remedial action based on scientific knowledge is taken to manage the risk.
- 1.3. If the risk of contaminating produce with chemical, biological and physical hazards of the site is high, unsuitable and unable to control, the site will not be used for VietGAP production of fresh produce.

2. Planting material

- 1.1. Planting material is guaranteed for high quality and supplied from licensed suppliers.
- 1.2. If planting material is produced on a farm, a record is kept of any seed treatment, seedling treatment, chemical treatment, reasons for use, the date of treatment and operator name. If planting material is obtained from another farm or nursery, a record is kept of the name of supplier, the date of supply, quantity of supply and any chemical treatment.

3. Soil and substrates

- 3.1. The risk of potential hazards in the soil and substrates shall be analysed and assessed yearly and will conform to criteria of Vietnam's environmental legislations.
- 3.2. Cultivation practices that minimize soil erosion and degradation shall be used and a record is kept.
- 3.3. If the soil and substrates need to be treated, the method of treatment is consulted by advisers (proof of their technical competence is available) and a record is kept.
- 3.4. Domestic and farm animal that will contaminate ground and water source are excluded from the production site. If required, domestic and farm animals shall be provided suitable facilities and a waste management plan is documented to minimise the risk of contamination of environment and produce.

4. Fertilisers and soil additives

- 4.1. The risk of chemical, biological and physical contamination of produce from the use of fertilisers or soil additives is assessed for each crop grown and a record is kept. If a significant hazard from the use of fertilisers or soil additives is identified, measures are taken to minimise the risk of contamination of produce.
- 4.2. Fertilisers and soil additives are selected to minimise the risk of chemical, biological and physical contamination of produce. Fertilisers and soil additives used on crops are approved by Vietnamese competent authority where crops are grown and intended to be traded.

- 4.3. Untreated organic fertilisers are not applied. Where an organic material is treated on the farm before application, the method, date and duration of the treatment is recorded. If the product containing organic materials is obtained from off the farm, documentation is available from the supplier to show that material has been treated to minimise the risk of contaminating the produce, the method of treatment and date of supply.
- 4.4. Equipment used to apply fertilisers and soil additives is maintained in clean, working condition and checked for effective operation frequently (by a technically competent person).
- 4.5. Areas or facilities for storage, mixing, packaging and loading of fertilisers and soil additives are located, constructed and maintained to minimise the risk of contamination of production sites and water sources.
- 4.6. A record of fertilisers and soil additives obtained is kept, detailing the source, product name, date and quantity obtained.
- 4.7. The application of fertilisers and soil additives is recorded, detailing the date, name of product or material used, treatment location, application rate, application method, and operator name.

5. Water

- 5.1. Quality of water used for irrigation and postharvest handling is managed to comply with country regulatory requirements.
- 5.2. Water testing is required to assess the risk of chemical and biological contamination of water used for: irrigation, fertigation, applying chemicals/pesticides for postharvest handling, processing, produce treatment, washing, cleaning and sanitation. A record is kept of any significant hazards identified.
- 5.3. If the quality of water is not suitable, either a safe alternative water source is used or the water is treated and monitored. A record is kept of the treatment method and monitoring results.
- 5.4. Sewage water or water discharged from industrial, hospital, property, animal farm, abattoir and toilet including faeces/urine areas is not used during production and postharvest handling of produce.

6. Chemicals (including pesticides)

- 6.1. Workers and employers have been trained to a level appropriate to their area of responsibility for chemical use.
- 6.2. If a choice of chemical products needs to be made, an adviser will be consulted (proof of their technical competence is available).
- 6.3. Measures of Integrated Pest Management (IPM) and Integrated Crop Management (ICM) are applied to minimise the application of chemicals.
- 6.4. Chemicals are only obtained from licensed suppliers.
- 6.5. Chemicals and biopesticides used on crops are approved by a competent authority in Vietnam where the crop is grown and intended to be traded.

- 6.6. Chemicals are applied according to label directions or a permit issued by a competent authority to prevent residue levels exceeding the MRL for the production site and in the products.
- 6.7. Withholding periods for the interval between chemical application and harvest are observed according to label directions.
- 6.8. Surplus application mixes are disposed of in a manner that does not present a risk of contaminating the produce and environment.
- 6.9. Equipment used to apply chemicals is washed after each use and maintained in working condition and checked frequently for effective operation. Washing waste is disposed of in a manner that does not present a risk of contaminating the produce and environment.
- 6.10. Chemicals are stored in a well lit, sound and secure structure with a lock. Written internal regulations, instructions on chemical and first aid are provided to workers or displayed in prominent locations. Only authorised people are allowed access.
- 6.11. Liquid formulations of chemicals are not stored on shelves above powders.
- 6.12. Chemicals are stored in the original container with a legible label and according to label directions or instructions from a competent authority. If a chemical is transferred to another container, the new container is clearly marked with the brand name, rate of use and withholding period.
- 6.13. Obsolete chemicals that are out of date or no longer approved are clearly identified and kept secure until disposal conforms to country regulations.
- 6.14. The application of chemicals is recorded for each crop, detailing the chemical used, reason for application, application site, date, application rate, method of application, withholding period and name of operator.
- 6.15. A record of chemicals obtained and/or used is kept, detailing chemical name, supplier of chemical, date and quantity obtained and/or used, and expiry or manufacture date.
- 6.16. Empty chemical containers are not re-used and are kept secure until disposal conforms to country regulations.
- 6.17. If chemical residues in excess of the MRL are detected, harvesting and/or marketing of the produce is ceased. The cause of the contamination is investigated and corrective action taken to prevent re-occurrence. A record is kept of the incident and action taken.
- 6.18. Fuels, oils, and other non-agro-chemicals are handled, stored and disposed of in a manner that minimises the risk of contaminating produce.
- 6.19. All practices and application of chemicals are frequently reviewed if required by government legislation or customers. The Codex MRL criteria for chemical residues shall be assessed at national/international key laboratories.

7. Harvesting and handling produce

7.1. Equipment, materials and containers

- 7.1.1. Harvested produce is not placed in direct contact with soil.
- 7.1.2. Equipment, containers and materials that contact produce are made of materials that will not contaminate produce.
- 7.1.3. Equipment, containers and materials are checked for soundness and cleanliness before use.

- 7.1.4. Containers used for storage of waste, chemicals, and other dangerous substances are clearly identified and are not used for holding produce.
- 7.1.5. Equipment and containers are regularly maintained to minimise contamination of produce.
- 7.1.6. Equipment, containers and materials are stored in areas separated from chemicals, fertilisers and soil additives and measures are taken to minimise contamination of produce.

7.2. Buildings and structures

- 7.2.1. Buildings and structures used for growing, packing, handling and storage of produce are constructed and maintained to minimise the risk of contaminating produce.
- 7.2.2. Grease, oil, fuel and farm machinery are segregated from handling, packing and storage areas to prevent contamination of produce.
- 7.2.3. Sewage, waste disposal and drainage systems are constructed to minimise the risk of contaminating the production site and water supply.
- 7.2.4. Lights above areas where produce and packing containers and materials are exposed, are either shatter proof or protected with shatter proof covers. In the event of a light breaking, exposed produce is rejected and equipment, packing containers and materials are cleaned..
- 7.2.5. Equipment and tools for handling and packing are screened with a physical barrier to prevent contamination of produce.

7.3. Cleaning and sanitation

- 7.3.1. Appropriate cleaning and sanitation chemicals are selected to minimise the risk of these chemicals causing contamination of produce and environment.
- 7.3.2. Packing, handling and storage areas, equipment and tools, containers and materials are regularly cleaned and sanitised.

7.4. Animal and pest control

- 7.4.1. Domestic and farm animals are excluded from the production site, handling, packing and storage areas.
- 7.4.2. Measures are taken to prevent the presence of pests in and around the production site, handling, packing and storage areas.
- 7.4.3. Baits and traps used for pest control are located and maintained to minimise the risk of contaminating the produce and packing containers and materials. The location of baits and traps is recorded.

7.5. Personal hygiene

- 7.5.1. Workers have appropriate knowledge or are trained and provided documentation in personal hygiene practices. A record of training is kept.
- 7.5.2. Written instructions on personal hygiene practices are displayed in prominent locations.
- 7.5.3. Toilet and hand washing facilities are readily available to workers and are maintained in a hygienic condition.
- 7.5.4. Sewage is disposed of in a manner that minimises the risk of contamination of produce.

7.6. Produce treatment

- 7.6.1. Use only chemicals, pesticides and wax used for handling produce that are approved by a competent authority.
- 7.6.2. The final water applied to the edible parts of produce is equivalent in quality to country water standards.

7.7 Storage and transport

- 7.7.1. Containers filled with produce are not placed in direct contact with soil to minimise the risk of contamination of produce.
- 7.7.2. Containers are checked before use for cleanliness and are cleaned if there is a significant risk of contaminating produce. .
- 7.7.3. Transport vehicles are checked before use for cleanliness and cleaned if there is a significant risk of contaminating produce.
- 7.7.4. Produce is stored and transported separate from goods that are a potential source of chemical, biological and physical contamination.
- 7.7.5. Storage areas and transport vehicles are regularly sterilized for cleaning and sanitation.

8. Waste management and treatment

- 8.1. Measures are taken to manage and treat waste products from production, handling and storage.

9. Workers

9.1. Safe working

- 9.1.1. Workers have been trained to a level appropriate to their area of responsibility for chemical use and recording skills.
- 9.1.2. Workers are provided suitable protective clothing and equipment. Facilities and first aid measures are available to treat workers contaminated with chemicals on farm and/or closest hospital if required.
- 9.1.3. Written instructions on first aid measures are provided to workers or displayed at chemical storage areas and/or in prominent locations.
- 9.1.4. Workers handling and applying chemicals and entering newly sprayed sites are equipped with suitable protective clothing and equipment for the chemical used.
- 9.1.5. Protected clothing is cleaned and stored separately from crop protection products.
- 9.1.6. Newly chemical spray sites are marked with warning signs.

9.2. Working conditions

- 9.2.1. Working places are suitable for workers with a rational number of workers.
- 9.2.2. Working conditions are fitted for worker's health and protective clothing is supplied where conditions are hazardous to workers.
- 9.2.3. All farm vehicles, equipment and tools, including electrical and mechanical devices, are adequately guarded and maintained and inspected on a regular basis for potential hazards to users.
- 9.2.4. Safe manual handling practices are followed to minimise the risk of injury from lifting heavy objects and excessive twisting and reaching movements.

9.3. Worker welfare

- 9.3.1. The minimum working age shall comply with Vietnam's laws and regulations.
- 9.3.2. Where provided by an employer, living quarters for workers are suitable for human habitation and contain basic services and facilities.
- 9.3.3. Wages and rewards for workers shall be reasonable and comply with Vietnam's Labour laws and regulations.

9.4. Training

- 9.4.1. New workers are informed about the risk associated with health and safety when starting at the worksite.
- 9.4.2. Workers have appropriate knowledge or are trained to a level appropriate to their area of responsibility in the following areas:
 - Operating equipment and tools.
 - Accident and emergency procedures.
 - Safe use of chemicals and personal hygiene.

10. Documents and Records, Traceability and Recall

- 10.1. Records of all good agricultural practices (VietGAP) including production, chemicals used, fertilizers, trading etc... shall be kept.
- 10.2. The internal audits shall be carried out by individual businesses and/or certification bodies to ensure that all practices and records are done correctly. If not, action is taken and a record is kept.
- 10.3. A detailed record for each good agricultural practice is kept of the production site.
- 10.4. Records of VietGAP are kept for a minimum period of at least two years or for a longer period if required by government legislation or customers.
- 10.5. GAP production sites shall be identified by name or code. The site name or code is recorded on all documents and kept.
- 10.6. Packed containers are clearly marked with an identification to enable traceability of the produce to the farm or site where the produce is grown.
- 10.7. A record is kept of the date of supply, quantity of produce and destination for each consignment of produce.
- 10.8. When produce is identified as being contaminated or potentially contaminated, the produce is isolated and distribution prevented or if sold, the buyer is immediately notified.
- 10.9. The cause of any contamination is investigated and corrective actions are taken to prevent re-occurrence and a record is kept of the incident and actions taken.

11. Internal audit

- 11.1. All practices are reviewed and an internal audit carried out at least once each year.
- 11.2. The review and internal audits which is based on a review checklist carried out and signed by individual businesses and/or certification bodies. A record of the internal audit and review is kept.
- 11.3. A record is kept to show the competent authority that all practices have been reviewed and any corrective actions taken are documented. .

12. Complaint and resolve complaint

12.1. A complaint form is available at any time when required.

12.2. If a complaint is lodged, VietGAP's producer has a responsibility to resolve the complaint according to Vietnam's laws and regulations. A record is kept of the complaint and actions taken.

Annexes 1: Review of Viet GAP for Fresh vegetables and fruit

Report No. 1. Assessment of VietGAP for safe and fresh vegetable and fruits					
No	Item	Type of risk/hazard	Comment	Proposed change(s)	Note
1.0 Site assessment and selection					
1.1	The risk of contaminating produce with chemical, biological and physical hazards of the site for VietGAP fresh produce is investigated, assessed the suitability of practical production that conforms to the law and regulation requirements of Vietnam's government. In case the site is unsuitable for production of fresh produce, remedial action based on scientific knowledge is taken to manage the risk and/or minimize the potential hazards.	ATTP MT CLSP H HH SH		It is suggested to remove the word "physical" (hazards)", so that the paragraph can be read as follow: The risk of contaminating produce with chemical and biological hazards of the site for VietGAP fresh produce is investigated, assessed the suitability of practical production that conforms to the law and regulation requirements of Vietnam's government. In case the site is unsuitable for production of fresh produce, remedial action based on scientific knowledge is taken to manage the risk and/or minimize the potential hazards.	There is no direct link with physical hazards in this case.
1.2	If the risk of contaminating produce with chemical, biological and physical hazards of the site is high, unsuitable and unable to control, the site will not be used for VietGAP production of fresh	ATTP MT CLSP HH,	Note: There might be a case when the site is unsuitable according to VietGAP criteria, but the	It is suggested to change to: If the risk of contaminating produce with chemical and biological hazards of the site is high,	The physical hazards are not direct ones.

	produce.	SH	production method is safe (e.g. hydroponic farming) and can resist chemical and biological hazards	unsuitable and unable to control, the site will not be used for VietGAP production of fresh produce.	
2.0 Planting material					
2.1	Planting material is guaranteed for original source, and supplied from licensed suppliers.	ATTP, CLSP SH			
2.2	If planting material is produced on a farm, a record is kept of any seed treatment, seedling treatment, chemical treatment, date of treatment, operator name and reasons for treatment. If planting material is obtained from another farm or nursery, a record is kept of the name and address of supplier, date of supply, quantity, variety and any chemical treatment on seedling and/or grafted seedling (if any).	CLSP SH			
3.0 Soil and substrates					
3.1	The risk of potential hazards in the soil and substrates shall be analysed and assessed yearly and will conform to criteria of Vietnam's legislations.	CLSP , ATTP, MT HH, SH	Standards for soils are available, but there are not any standards on substrates.	.	It is suggested to develop criteria for MRL on substrates if not available yet in Vietnam.
3.2	Cultivation practices that minimize soil erosion and degradation shall be used and a record is kept.	MT VL, HH			
3.3	If the potential hazards in soil and substrates need to be treated, the method of treatment is consulted by technical advisers (proof of their technical competence is available) and a record of treatments is kept.	ATTP, MT, CLSP HH, SH			
3.4	Domestic and farm animals that will contaminate ground and water source are excluded from the production site. If required, domestic and farm animals shall be provided suitable facilities and a waste management plan is documented to guarantee no risk of contamination of environment and produce.	ATTP, MT, CLSP , SKNL D HH,			This practice is feasible but difficult for small farmers where poultry are usually raised together with vegetables. Or, there can be the risk of failure to control contamination sources from the neighbour.

		SH			
4.0 Fertilizers and soil additives					
4.1	The risk of chemical, biological and physical contamination of produce from the use of fertilisers and soil additives is assessed for each crop grown and a record is kept. If a significant hazard from the use of fertilisers and soil additives is identified, measures are taken to minimise the risk of contamination of produce.	ATTP, MT, CLSP HH, SH		It is also suggested to remove the word "physical" (hazards) so as to read the paragraph as follow: The risk of chemical and biological contamination of produce from the use of fertilisers and soil additives is assessed for each crop grown and a record is kept. If a significant hazard from the use of fertilisers and soil additives is identified, measures are taken to minimise the risk of contamination of produce.	There is no physical hazard due to the use of fertilizers or soil additives.
4.2	Fertilisers and soil additives are selected to minimise the risk of contamination of produce. Use only fertilisers in the list which is approved by competent authority for producing and trading in Vietnam.	ATTP, MT, CLSP HH, SH			
4.3	Untreated organic fertilisers are not applied. Where an organic fertilizers are treated on the farm before application, the date, duration and method of treatment are recorded. If organic fertilizers are obtained from off the farm, documentation is available from the supplier to show the name and address of producer, date of supply, supply quantitative, variety of fertilizer and method of treatment.	ATTP, MT, CLSP HH, SH	Human sewage are not used for production of fresh produce.	It is suggested to add: Human sewage are not used for production of fresh produce.	It should be clearly indicated that the human sewage are absolutely unallowable.
4.4	Equipment used to apply fertilisers is maintained in clean, working condition and frequently checked for effective operation.	ATTP, CLSP HH, SH			
4.5	Areas or facilities for storage of fertilizers and/or equipment for mixing and packaging of fertilisers and soil additives are located, constructed and maintained to minimise the risk of contamination of production sites and water sources.	ATTP, MT, CLSP , SKNL D HH, SH		It is suggested to make changes to read as follow: Areas for composting organic fertilizers and areas or facilities for storage of fertilizers and/or equipment for mixing and packaging of fertilisers and soil additives are located, constructed and maintained to minimise	During the production process, there can be risks of contamination from the areas where organic fertilizers are composted.

				the risk of contamination of production sites and water sources.	
4.6	A record of fertilisers and soil additives obtained is kept (detailing the source, product name, date and quantity obtained).	ATTP, MT, CLSP , SKNL D HH, SH			
4.7	The application of fertilisers and soil additives is recorded (detailing the application date, name of fertilizers, treatment location, application rate, application method and name of operator).	ATTP, MT, CLSP , SKNL D HH, SH			
5.0 IRRIGATION WATER				It is suggested to remove the word "irrigation" to make it to simply "Water".	This section 5 covers water demands not only for irrigation but also for postharvest handling.
5.1	Water used for irrigation and postharvest handling is managed to comply with country regulatory requirements and/or water standard that Vietnam has applied.	ATTP, MT, CLSP HH, SH			
5.2	Water testing is required to assess the risk of chemical and biological contamination of water used for: irrigation, applying chemicals/pesticides, postharvest handling, processing, produce treatment, washing, cleaning and sanitation and a record is kept.	ATTP, MT, CLSP HH, SH			Assessments of hazards of contamination must be done by recognized laboratories.
5.3	If the quality of water is not suitable, either a safe alternative water source is used or the water is treated and monitored. A record is kept of the treatment method and monitoring results.	ATTP, MT, CLSP HH, SH			
5.4	Sewage water or water discharged from industrial, hospital, property, animal farm, abattoir and toilet including faeces/urine areas is not used during production and postharvest handling of produce.	ATTP, MT, CLSP HH, SH			
6.0	Chemicals (incl.pesticides)				

6.1	Workers and employers have been trained to a level appropriate to their area of responsibility and safety for use of plant protection substances.	ATTP, MT, CLSP , SKNL D		It is suggested to replace the word “plant protection substances” with the word “chemical(s)”. The paragraph should be read as follow: Workers and employers have been trained to a level appropriate to their area of responsibility and safety for chemical use. A translator’s note: this suggestion seems to be applicable to the Vietnamese version.	The term “chemicals” included plant protection substances.. So it is suggested to use the term “chemicals”.
6.2	If a choice of chemical products and growth regulators needs to be made, a plant protection adviser will be consulted (proof of their technical competence is available).	ATTP, MT, CLSP , SKNL D			
6.3	Measures of Integrated Pest Management (IPM) and Integrated Crop Management (ICM) are applied to minimise the application of chemicals.	ATTP, SKNL D HH		It is suggested to change to: Measures of Integrated <u>Pest</u> Management (IPM) and Integrated Crop Management (ICM) are applied to minimise the application of <u>chemicals</u> . A translator’s note: this suggestion seems to be applicable to the Vietnamese version.	Pests can broadly refer to: insects, diseases, rats, weeds.
6.4	Chemicals are only obtained from liscenced suppliers.	ATTP, SKNL D HH		It is suggested to change to: Chemicals are only obtained from liscenced suppliers. A translator’s note: this suggestion seems to be applicable to the Vietnamese version, as there is an error of double typing of the word “licensed suppliers” in the Vietnamese version.	Meaningless repetition of the word “licensed suppliers”
6.5	Use only chemicals for each species of vegetable and fruit in the list which is approved by a competent authority in Vietnam.	ATTP, SKNL D			

		HH			
6.6	Chemicals are applied according to label directions or guidelines of competent authority to ensure the safety of the production site and the produce.	ATTP, SKNL D HH		It is suggested to add the word "the workers". The sentence should be read as follow: Chemicals are applied according to label directions or guidelines of competent authority to ensure the safety of <u>the workers</u> , the production site and the produce.	
6.7	Withholding periods for the interval between chemical application and harvest are observed according to label directions.	ATTP, CLSP HH			
6.8	Surplus application mixes are disposed of in a manner that does not present a risk of contaminating the environment.	ATTP, MT, HH		Add the word "and the produce" to change the sentence to: Surplus application mixes are disposed of in a manner that does not present a risk of contaminating the environment <u>and the produce</u> .	
6.9	Equipment used to apply chemicals is washed after each use and maintained in working condition and checked frequently for effective operation. Washing waste is disposed of in a manner that does not present a risk of contaminating the environment.	ATTP, MT, HH		Add the word "and the produce" to change the sentence to: Equipment used to apply chemicals is washed after each use and maintained in working condition and checked frequently for effective operation. Washing waste is disposed of in a manner that does not present a risk of contaminating the environment <u>and the produce</u> .	
6.10	Chemical store is built to comply with country regulatory requirements in a well lit, sound and secure structure with a lock. Written internal regulations, instructions on chemical and first aid are provided to workers or displayed in prominent locations. Only authorised people are allowed access.	ATTP, MT, SKNL D			
6.11	Liquid formulations of chemicals are not stored on shelves above powders.	MT, SKNL D			

		HH			
6.12	Chemicals are stored in the original pack or container with a legible label. If a chemical is transferred to another pack or container, the new pack or container are clearly marked with the brand name, rate of use and withholding period as they were in the original pack or container.	ATTP, MT, CLSP , SKNL D			
6.13	Obsolete chemicals that are out of date or no longer approved are clearly identified, recorded and kept secure until disposal conforms to country regulations.	ATTP, MT HH			
6.14	The application of chemicals is recorded for each crop grown (detailing the chemical used, reason for application, application site, date, application rate, method of application, withholding period and name of operator).	ATTP, MT, SKNL D HH			
6.15	A record of chemicals obtained and/or used is kept (detailing chemical name, supplier of chemical, obtained date, quantity obtained, period of use, date of manufacture and expiry).	ATTP, MT HH			
6.16	Empty chemical packs and/or containers are not re-used and are kept secure until disposal conforms to country regulations.	ATTP, MT, HH	Chemical packs and/or containers must not be re-used for containing water or the produce.		Add a clear explanation on how the disposal according to the state regulations should be done.
6.17	If chemical residues in excess of the MRL are detected, harvesting and/or marketing of the produce is immediately ceased. The cause of the contamination is investigated and corrective action taken to minimise contamination. A record is kept of the incident and action taken.	ATTP, MT, HH		It is suggested to change to: If chemical residues in excess of the MRL are detected, harvesting and/or marketing of the produce is immediately ceased. The cause of the contamination is investigated and corrective action taken to minimise <u>re-contamination</u> . A record is kept of the incident and action taken.	There should be actions to prevent re-contamination.
6.18	Fuels, oils, and other non-agro-chemicals are handled and stored in a manner that minimises the risk of contaminating produce.	ATTP, MT HH		It should be changed as follow: Fuels, oils, and other non-agro-chemicals are handled and stored in a manner that minimises the risk of contaminating the site	

				and the produce.	
6.19	All practices and application of chemicals are frequently reviewed if required by government legislation or customers. The criteria for chemical residues shall be assessed at national/international key laboratories.	ATTP, CLSP HH		Delete the word "frequently" and change the sentence to: All practices and application of chemicals are reviewed if required by government legislation or customers. The criteria for chemical residues shall be assessed at national/international key laboratories.	"Frequently reviewed" is difficult due to the limited financial resources.
7.0 Harvesting and handling produce					
7.1	Equipment, materials and containers				
7.1.1	Harvested produce is not placed in direct contact with soil and not stored overnight.	ATTP, CLSP SH			
7.1.2	Equipment, containers and materials that contact produce are made of materials that will not contaminate produce.	ATTP, CLSP HH, SH			Add regulations or explanations on "materials"
7.1.3	Equipment, containers and materials are checked for soundness and cleanliness before use.	ATTP, CLSP HH, SH			
7.1.4	Containers used for storage of waste, chemicals, and other dangerous substances are clearly identified and are not used for holding produce.	ATTP, CLSP HH, SH			
7.1.5	Equipment and containers are regularly checked and maintained to minimise contamination of produce.	ATTP, CLSP HH, SH			
7.1.6	Equipment, containers and materials holding or packing produce are stored in areas separated from chemicals, fertilisers and soil additives and measures are taken to minimise contamination of produce.	ATTP, CLSP HH, SH			Add the MOH's regulations on materials used for making containers and packs
7.2	Buildings and structures	It should be changed to Buildings, structures and			
	maintenance requirements				
7.2.1	Buildings and structures used for growing, treatment, packing, handling and storage of produce are designed, constructed and maintained to minimise the risk of contaminating produce.	ATTP, MT, CLSP HH, SH			There should be introduction on a designed model of a pilot farm
7.2.2	Grease, oil, fuel and farm machinery are segregated from handling, packing and storage areas to prevent contamination of produce.	ATTP, MT, CLSP HH, SH			There should be introduction on a designed model of a pilot farm
7.2.3	Sewage, waste disposal and drainage systems are constructed to minimise the risk of contaminating the production site and water supply.	ATTP, MT, CLSP HH,		Add "the produce" to change the sentence to:	

		SH		Sewage, waste disposal and drainage systems are constructed to minimise the risk of contaminating the production site and water supply <u>and the produce.</u>	
7.2.4	Lights above areas where produce and packing containers and materials are exposed are protected with shatter proof covers. In the event of a light breaking, exposed produce is rejected and equipment, packing containers and materials are cleaned.	ATTP, CLSP VL			
7.2.5	Equipment and tools for handling and packing produce are screened with a physical barrier to guarantee the safety.	ATTP, MT CLSP HH, SH		Add "the workers and the produce": Equipment and tools for handling and packing produce are screened with a physical barrier to guarantee the safety <u>of the workers and the produce.</u>	
7.3	Cleaning and sanitation				
7.3.1	Appropriate cleaning and sanitation chemicals are selected to minimise the risk of these chemicals causing contamination of produce and environment.	ATTP, MT CLSP HH			
7.3.2	Packing, handling and storage areas, equipment and tools, containers and materials are regularly cleaned and sanitised.	ATTP, MT CLSP HH, SH			There should be a sanitation program, and record keeping.
7.4	Animal and pest control				
7.4.1	Domestic and farm animals are excluded from the production site, handling, packing and storage areas.	ATTP, CLSP HH, SH			Need to check if the practice is actually followed.
7.4.2	Measures are taken to prevent the presence of pests in and around the production site, handling, packing and storage areas.	ATTP, CLSP HH, SH			
7.4.3	Baits and traps used for pest control are located and maintained to minimise the risk of contaminating the produce and packing containers and materials. The location of baits and traps is recorded.	ATTP, CLSP HH, SH			
7.5	Personal hygiene				
7.5.1	Workers have appropriate knowledge or are trained and provided documentation in personal hygiene practices. A record of training is kept.	ATTP, SKNL D HH, SH			
7.5.2	Written instructions on personal hygiene practices are displayed in prominent locations.	ATTP, SKNL D HH, SH			

7.5.3	Toilet and hand washing facilities are readily available to workers and are maintained in a hygienic condition.	ATTP, SKNL D HH, SH		Add the word “sufficiently” to change the sentence to: Toilet and hand washing facilities are <u>sufficiently</u> available to workers and are maintained in a hygienic condition.	
7.5.4	Sewage of toilet and hand washing facilities is treated.	ATTP, MT, SKNL D HH, SH		It is suggested to change to: Sewage of toilet and hand washing facilities is treated to <u>minimize the risk of contamination to the production site and the produce.</u>	
7.6	Produce treatment				
7.6.1	Use only chemicals, pesticides and wax used for handling produce that are approved by a competent authority.	ATTP, MT, SKNL D HH, SH	Add regulations on use, storage and disposal of chemicals used for postharvest handling, as shown in Section 6 – Chemicals.		It is required to make a clear list of chemicals, pesticides and wax that can be used for postharvest handling.
7.6.2	The final water applied to the postharvested produce is guaranteed to country’s water standards.	ATTP, MT, SKNL D HH, SH			
7.7.	Storage and transport				
7.7.1	Transport vehicles are checked before use for cleanliness and cleaned if there is a significant risk of contaminating before loading the produce.	ATTP, CLSP HH, SH		It is suggested to change the sentence to: Transport vehicles are checked before use for <u>suitability</u> and cleaned if there is a significant risk of contaminating before loading the produce.	
7.7.2	Produce is stored and transported separate from goods that are a potential source of contamination.	ATTP, CLSP HH, SH		Add the word “and animals” to change the sentence to: Produce is stored and transported separate from goods <u>and animals</u> that are a potential source of contamination.	
7.7.3	Storage areas and transport vehicles are regularly sterilized for cleaning and sanitation.	ATTP, CLSP HH, SH			Regulations on chemicals for sterilization need to be followed.
8.0	Waste management and treatment				
8.1	Measures are taken to manage and treat the sewage and waste water from the processes of production, handling and storage.	ATTP, MT, CLSP HH, SH			It is necessary to elaborate the measures for sewage and waste water treatment and management in the Manual.

9. Workers - This Technical group has a rather limited experience on this topic, so further consultations with other professionals are likely to bring added values.

9.1	Safe working				
9.1.1	Workers have been trained to a level appropriate to their area of responsibility for chemical use and recording skills.	ATTP, SKNLD HH			
9.1.2	Workers are provided suitable protective clothing, equipment and applied necessary first aid measures to treat workers contaminated with chemicals on farm and/or closest hospital if required.	ATTP, SKNLD HH			
9.1.3	Written instructions on first aid measures are provided to workers or displayed at chemical storage areas and/or in prominent locations.	ATTP, SKNLD HH			
9.1.4	Workers handling and applying chemicals and entering newly sprayed sites are equipped with suitable protective clothing and equipment for the chemical used.	ATTP, SKNLD HH			
9.1.5	Protected clothing is cleaned and stored separately from crop protection products.	ATTP, SKNLD HH		It is suggested to change to: Protected clothing <u>must be clean</u> and stored separately from chemicals.	
9.1.6	Newly chemical spray sites are marked with warning signs.	ATTP, CLSP, SKNLD HH			
9.2	Working conditions				
9.2.1	Working places are spacious and suitable for workers with a rational number of workers.	SKNLD			
9.2.2	Working conditions are fitted for worker's health and protective clothing is supplied where conditions are hazardous to workers.	SKNLD			The protective clothing must be appropriate to each stage of the production line.
9.2.3	All farm vehicles, equipment and tools, including electrical and mechanical devices, are adequately guarded and maintained and inspected on a regular basis for potential hazards to users.	SKNLD			
9.2.4	Safe manual handling practices are followed to minimise the risk of injury from excessive twisting and reaching movements and lifting heavy objects.	SKNLD			
9.3	Worker welfare				
9.3.1	The working age shall comply with Vietnam's laws and regulations.	SKNLD			
9.3.2	Living quarters for workers are suitable for human habitation and contain basic services and facilities.	SKNLD			
9.3.3	Wages and rewards for workers shall				

	be reasonable and comply with Vietnam's Labour laws and regulations.				
9.4	Training				
9.4.1	New workers are informed about the risk associated with health and safety when starting at the worksite.	SKNLD			
9.4.2	Workers have appropriate knowledge or are trained to a level appropriate to their area of responsibility in the following areas: <ul style="list-style-type: none"> - Operating equipment and tools. - Accident and emergency procedures. - Safe use of chemicals and personal hygiene. 	SKNLD		It is suggested to change the paragraph to: Workers have appropriate knowledge or are trained to a level appropriate to their area of responsibility in the following areas: <ul style="list-style-type: none"> - Operating equipment and tools. - Accident and emergency procedures. - Safe use of chemicals and personal hygiene. - Food safety and hygiene. 	

10. Documents and Records, Traceability and Recall

10.1	Records of all good agricultural practices (VietGAP) including production, chemicals used, fertilizers, trading etc... shall be kept.	ATTP, CLSP, SKNLD HH, SH			There should be implementation instructions for farmers.
10.2	The internal audits shall be carried out by individual businesses and/or certification bodies to ensure that all practices and records are done correctly. If not, action is taken and a record is kept.	ATTP, CLSP, HH, SH	Audits are compulsory requirements.		Producers should be advised and trained on internal audit. There should be templates for documenting errors and proposed corrective measures.
10.3	A detailed record for each good agricultural practice is kept of the production site.	ATTP, CLSP, HH, SH			
10.4	Records (of VietGAP) are kept for a minimum period of at least two years or for a longer period if required by customers or government legislation.	ATTP, CLSP, HH, SH			
10.5	VietGAP production sites shall be identified by name or code. The site name or code is recorded on all documents and kept.	ATTP, CLSP, HH, SH		It is suggested to make the sentence clearer as follow: Every VietGAP farm or production site shall be identified by a particular code. The site location and code must be recorded on all documents and kept.	The use of the farm or site code should be specified in the Regulation on VietGAP certification.
10.6	Packs, containers are clearly marked with an identification to	ATTP, CLSP			It is necessary to follow the Gov.

	enable traceability of the produce to the farm or site where the produce is grown.	HH, SH			Decree No. 89/2006/ND-CP on trademarks.
10.7	A record is kept of the date of supply, destination for each consignment of produce.	ATTP, CLSP HH, SH			
10.8	When produce is identified as being contaminated or potentially contaminated, the produce is isolated and distribution prevented. If sold, the buyer is immediately notified.	ATTP, CLSP HH, SH			Please refer to Decree 163 on the producer's or dealer's responsibility of recalling substandard or unsafe food.
10.9	The cause of any contamination is investigated and corrective actions are taken to prevent re-occurrence and a record is kept of the incident and actions taken.	ATTP, CLSP HH, SH			There should be a Regulation on traceability.

11. Internal audit

11.1	All practices are reviewed and an internal audit carried out at least once each year.	ATTP, CLSP HH, SH			
11.2	The review and internal audits which is based on a review checklist carried out and signed by individual businesses and/or certification bodies. A record of the internal audit and audit (random and/or periodically audits) from competent authority is kept. .	ATTP, CLSP HH, SH			
11.3	A record is kept to show the competent authority if require that all VietGAP practices have been reviewed and any corrective actions taken are documented.	ATTP, CLSP HH, SH		It is suggested to change to: The internal audit reports should be kept and presented to the competent authority, if required, by the VietGAP individual and organization producers.	

12. Complaint and resolve complaint

12.1	A complaint form is available in VietGAP production site at any time when required.				It is suggested to add a complaint form in the Manual.
12.2	If a complaint is lodged, VietGAP's producer has a responsibility to resolve the complaint according to Vietnam's laws and regulations. A record is kept of the complaint and actions taken.				

Table 1 : General comments (taken from detailed version)

Scope of Viet GAP	The scope should be defined. A mention of the different production steps should be included. Questions to be answered: does it include
-------------------	--

	hydroponics' production, greenhouses production and transport to market place?
Critical control point identifications	A major CCP is missing: water use in post-harvest, based on recent food crisis in vegetables. The water use at that step must be potable.
CCP management	The critical control points on the food safety aspect must be managed with the HACCP principles, as the control measure must be defined and recorded. The corrective actions should include product recall if needed and preventive measures should be developed to prevent re-occurrence.
Limitation of animals around crops (3.4)	This practice will be difficult to apply in Vietnam according to our committee but this is an important source of contamination and mostly in Fresh product.
Water quality	Potable water is an important challenge in Vietnam. Although, the use of human sewage is not acceptable and should be mentioned.
Illegal use of chemicals	It also is applicable in the post-harvest section.
Better accuracy on wording	Although it may be difficult to judge because of the translation, some inconsistency in interpretation of terminology ((sections 4 to 6).
MRL and testing	As refer, those MRL and the testing should be determined by international methods.
Traceability	This section is very limited and would need more development in the future, as the buyers requested it.
Checklist	<p>The checklist does not cover all the items and issues of the Practice. Some points in the checklist have been unnecessarily simplified, leading to some missing aspects of the requirements of the Practice.</p> <p>Some levels of requirements in the checklist should be lessened to conform to the present and actual conditions. The checklist could consist of 3 levels of assessment , whereas A level means “entire (100%) compliance is compulsory”, B level also means “compulsory” but only requires $\leq 95\%$ compliance, and C level means “optional”.</p>
The templates proposed	The templates should be included in the Producer manual, rather than presented in the annexes of VietGAP.

Comparison of content of some GAP programs

FS= Food safety, EM= Environmental management, WHSW= Worker health and social welfare, PQ= Product quality

Region	GAP program	Hazards covered				Management
		FS	EM	WHSW	PQ	
UK/ Europe	GLOBALG.A.P. (formerly EUREPGAP)	✓	✓	✓		Company representing retailers and suppliers
	Assured Produce Scheme	✓	✓	✓		Industry organisation
	LEAF (Linking Environment and Farming)		✓			Industry organisation
	Natures Choice (Tesco)	✓	✓	✓		Retailer
	Field to Fork (Marks and Spencer)	✓	✓	✓		Retailer
Pacific	Freshcare (Australia)	✓	✓		✓	Industry organisation
	NZGAP (New Zealand)	✓	✓	✓		Industry organisation
Asia	ChinaGAP	✓	✓	✓		Government
	JGAP (Japan)	✓	✓	✓		Industry organisation
	IndiaGAP	✓	✓	✓		Government
South America	ChileGAP	✓	✓	✓		Industry organisation
North America	ProSafe (Davis Fresh Technologies)	✓				Company
	Mexico Supreme Quality GAP	✓	✓	✓		Industry organisation
	Canadian Horticulture council	✓	✓		✓	Industry organisation
Africa	Kenya GAP	✓	✓	✓		Industry organisation
Vietnam	Viet GAP	✓	✓	✓	✓	Government

