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FINAL REPORT OF AN AUDIT

CARRIED OUT IN

SINGAPORE

FROM 18 TO 24 JUNE 2013

IN ORDER TO EVALUATE THE SYSTEM OF OFFICIAL CONTROLS FOR THE EXPORT OF
PLANTS TO THE EUROPEAN UNION

In response to information provided by the Competent Authority, any factual error noted in the draft report has been corrected; any clarification appears in the form of a footnote.

Executive Summary

This report describes the outcome of a audit carried out by the Food and Veterinary Office in Singapore, from 18 to 24 June 2013.

The objective of the audit was to evaluate the system of official controls for the export of plants regulated by Council Directive 2000/29/EC, originating and exported from Singapore to the European Union.

Particular emphasis was given to those regulated plants and plant products that are hosts of Bemisia tabaci, nematodes (Hirschmanniella sp., Radopholus sp. and Meloidogyne sp. etc.), Thrips palmi and other Thysanoptera, and Pomacea.

There is a clear structure and division of responsibilities within the national plant protection organisation. Staff are well trained and generally aware of the EU harmful organisms of concern and EU import requirements. The official laboratory is well equipped and is technically competent. There is a good communication with producers and exporters.

As a result of the continued interceptions in the EU, the Agri-Food & Veterinary Authority (AVA) reinforced the Assurance Certification Scheme (ACS) and several additional steps were taken, including the suspension of exports of seven species/genera of aquatic plants. These actions have reduced the number of EU interceptions of harmful organisms.

However, shortcomings were still identified during the audit:

Some EU plant health requirements are not respected. For exports of aquatic plants to the EU originating in another country, Singapore is issuing phytosanitary certificates with additional declarations for which the country of origin does not certify the fulfillment of the requirements in Annex IV, Part A, Section I of Council Directive 2000/29/EC. Furthermore, those requirements are not fulfilled in Singapore either, before export to the EU.

Plant health checks are not carried out appropriately, in particular for sampling and action taken in the case of infested aquatic plants.

Recommendations are made in this report to address the shortcomings found.

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ABBREVIATIONS AND DEFINITIONS USED IN THIS REPORT

Abbreviation	Explanation
ACS	Assurance Certification Scheme
AVA	Agri-Food & Veterinary Authority
Consignment	Defined in ISPM 5 as a quantity of plants, plant products and/or other articles being moved from one country to another and covered, when required, by a single phytosanitary certificate
eCLiPS	Electronic Certificates Licences System
EU	European Union
EUROPHYT	The European Union notification system for plant health interceptions
FVO	Food and Veterinary Office
Ha	Hectare
Harmful organism	Defined in Article 2 (e) of Council Directive 2000/29/EC as any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products.
iFAST	Intelligent Fast Approval and Safety Tracking System
IPPC	International Plant Protection Convention
ISO	International Organisation for Standardisation
ISPM	International Standards for Phytosanitary Measures
Lot	Defined in ISPM 5 as a unit of a single commodity, identifiable by its homogeneity of composition, origin, etc., forming part of a consignment
NPPO	National Plant Protection Organisation
Plants	Should be considered to mean 'all living plants and specified parts thereof, including seeds' as defined in Article 2(1)(a) of Council Directive 2000/29/EC
PHLD	Plant Health Laboratory Department
QIG	Quarantine and Inspection Group
SOP	Standard Operating Procedure
T	Tonne
Thysanoptera	Order of insect commonly called “thrips”

1 INTRODUCTION

This audit took place in Singapore from 18 to 24 June 2013 and was undertaken as part of the Food and Veterinary Office's (FVO) planned audit programme.

The audit team consisted of two auditors from the FVO and one National Expert from a European Union (EU) Member State. Representatives from the National Plant Protection Organisation (NPPO), the Agri-Food & Veterinary Authority (AVA), accompanied the FVO team during the audit.

An opening meeting was held on 18 June 2013 at the Plant Health Laboratory Department in Singapore, during which, the objectives, and itinerary for the audit were confirmed, and additional information necessary for the conduct of the audit, was requested.

2 OBJECTIVES

The objective of the audit was to evaluate the system of official controls for the export of plants regulated by Council Directive 2000/29/EC to the EU.

The audit was undertaken due to the ongoing interceptions of harmful organisms notified by EU Member states in EUROPHYT, the EU notification system for plant health interceptions (see section 4.1). Particular emphasis was given to those regulated plants and plant products that are hosts of *Bemisia tabaci*, nematodes (*Hirschmanniella* sp., *Radopholus* sp. and *Meloidogyne* sp. Etc.). In addition, the production of host plants of *Thrips palmi* and other Thysanoptera, and of *Pomacea* (Island apple snail) exported to the EU, were also covered by the audit.

The table below lists sites visited and meetings held in order to achieve these objectives:

Meetings/visits		No.	Comments
Competent Authorities	Central	3	Agri-Food & Veterinary Authority
	Laboratories	1	Plant Health Laboratory Department
Plant health control sites			
Production sites		3	Aquatic plants and orchid cut flowers
Wood packaging facilities		1	Authorised to apply ISPM 15 mark

3 LEGAL BASIS

The audit was carried out under the mandate of Articles 21 and 27a of Council Directive 2000/29/EC, and with the agreement of the NPPO of Singapore.

3.1 RELEVANT EU LEGISLATION

Council Directive 2000/29/EC provides for protective measures against the introduction into and spread within the EU organisms harmful to plants or plants products. The legal reference for this Directive is listed in Annex I.

Commission Implementing Decision 2012/697/EU of 8 November 2012 as regards measures to prevent the introduction into and the spread within the Union of the genus *Pomacea* (Perry).

References to EU legislation are to the latest amended version, where applicable.

3.2 INTERNATIONAL STANDARDS

Article X (4) of the International Plant Protection Convention (IPPC) establishes that contracting parties should take into account, as appropriate, international standards when undertaking activities related to the Convention. The International Standards for Phytosanitary Measures (ISPM) issued by the IPPC thus provide a basis, in addition to the EU import requirements, for evaluating official export controls in contracting parties. Singapore is a contracting party to the IPPC since 2010.

The full text of all adopted ISPMs is available on the International Phytosanitary Portal of the International Plant Protection Convention (<https://www.ippc.int>). The ISPMs that were of particular relevance to this audit are listed in Annex II.

4 BACKGROUND

This was the first audit carried out by the FVO in Singapore in relation to plant health.

4.1 NOTIFICATIONS OF INTERCEPTIONS

Between 1 January 2008 to 30 June 2013, EU Member States notified a total of 342 interceptions on consignments exported from Singapore, in EUROPHYT. As detailed in table 1 below, 201 of these interceptions were due to the presence of a harmful organism. The remaining 141 were due mainly to missing or non-compliant phytosanitary certificates.

Table 1: Summary of notifications of interception by EU Member States (source EUROPHYT)

Reason	2008	2009	2010	2011	2012	2013 (until 30/06)
Presence of harmful organism	32	27	20	52	67	3
Other reasons, including documentary reasons.	51	36	17	16	16	5
Total	83	63	37	68	83	8

In 2012, the most commonly intercepted harmful organisms included: *Bemisia tabaci* with 58 interceptions and nematodes (*Hirschmanniella* sp. and *Meloidogyne* sp.) with 6 interceptions.

Bemisia tabaci and nematodes were mainly intercepted on aquatic plants.

From the second semester of 2012 onwards the number of EU interceptions has been reducing and in 2013, the total number of interceptions until 30/06/13 was eight, three due to the presence of harmful organisms and five relating to problems detected on phytosanitary certificates. This most probably reflect changes of the export system for aquatic plants and the phytosanitary measures taken in response to the non-compliances (see section 5.6.2)

Details on the status of harmful organisms of concern to the EU are provided in section 5.2 below.

4.2 PRODUCTION AND TRADE INFORMATION

Unless specified otherwise, the data quoted in the following sections and elsewhere in the report, was provided by the NPPO.

4.2.1 Production

Agricultural production in Singapore is very limited, with no significant production of fruits and vegetables.

The main commodity of concern to this audit are aquatic plants. These include emerged plants (grown outside water) and submerged plants (grown inside water). The total production area of aquatic plants in Singapore is 7 ha and around 2,000t are produced every year. Some companies are producing tissue culture aquatic plants in order to increase the production of plants in a short period of time.

The area for cut flowers production covers 8.86 ha and around 750,000 stalks are produced yearly. There is no production of cut foliage.

4.2.2 Exports

The exports of aquatic plants, cut flowers and cut foliage represent a total value of around EUR 425 million from which around EUR 12 million is the value of the products destined to the EU. From a total of 17,000 phytosanitary certificates issued by Singapore in 2012, around 3,265 were issued for the EU Member states.

In 2012, the main EU Member States importing from Singapore were, aquatic plants: United Kingdom, Germany and Denmark; cut flowers: Greece, Italy and Hungary; cut foliage: Hungary, United Kingdom and Italy.

Singapore is a trade hub, therefore many consignments are transiting or are re-exported. In the case of aquatic plants, cut flowers and cut foliage, large quantities are brought in from neighbouring countries and re-exported to the EU.

The NPPO stated that the concept of export is used when a consignment is brought in from another country and is processed (selected, graded, treated and repacked) in Singapore and later exported to the EU. However, no phytosanitary certificates for re-export are issued.

The export and re-export of aquatic plants, cut flowers and cut foliage to the EU between 2008 and 2012 is detailed in tables 2 and 3 below.

Table 2: Exports of aquatic plants, cut flowers and cut foliage to the EU between 2008 and 2012 (in units).

Plants/Plant Parts	2008	2009	2010	2011	2012
Aquatic plants	29,467,786	27,999,059	26,023,583	23,201,925	19,174,363
Cut flowers	2,798,527	1,722,316	1,250,522	1,292,491	965,628

Table 3: Re-exports of aquatic plants, cut flowers and cut foliage to the EU between 2008 and 2012 (in units).

Plants/Plant Parts	2008	2009	2010	2011	2012
Aquatic plants	18,587,146	18,142,765	17,008,722	15,506,856	12,628,801
Cut flowers	653,283	629,341	635,415	710,489	703,665
Cut foliage	3,617,434	2,601,871	3,070,596	3,704,860	2,788,395

The AVA stated that the main reasons for the decrease of exports and re-exports of aquatic plants to the EU were: the additional measures imposed by the AVA in 2012, the increase in competition in the region and the prevalent European economic crisis.

All aquatic plants, cut flowers and cut foliage exported to the EU are transported by air from Changi International Airport. The NPPO informed the audit team that export certification formalities (including plant health inspection) are conducted at the premises of the exporters or in the NPPO office and not at the airport.

5 FINDINGS AND CONCLUSIONS

5.1 ORGANISATIONAL ASPECTS OF PLANT HEALTH CONTROLS

Legal requirements

Article 2(1)(i) of Directive 2000/29/EC establishes the requirements for a measure or statement, to be considered as 'official'. In particular, '...if it is made by representatives of the official national plant protection organisation of a third country, or, under their responsibility, by other public officers who are technically qualified and duly authorised...'

ISPM 7 describes the basic elements of the phytosanitary certification process and the requirements for a certification system to fulfil these functions. Sections 1 (Legal Authority), 2 (Management responsibility), 3 (Resources), 4.3 (Procedures), 5 (Communication) and 6 (Review mechanism) are of particular relevance.

ISPM 23 describes the objectives and requirements for inspections. Of particular relevance here, are sections 1.3 (responsibility for inspection) and 1.4 (requirements for inspectors).

Findings

5.1.1 National Plant Protection Organisation

The AVA, under the Ministry of National Development, is the National Plant Protection Organisation for Singapore. The AVA is involved in the plant health controls to safeguard plant health and facilitate agri-trade in Singapore. In addition, the AVA (<http://www.ava.gov.sg/>) is the food safety and animal health regulatory agency.

Plant health matters involve mainly two AVA sectors: the Plant Health Laboratory Department (PHLD), under the Laboratories Group and the Quarantine and Inspection Group (QIG).

The Director of PHLD is the programme chief for plant health and is also the IPPC contact point for Singapore. PHLD provides technical expertise in plant health, diagnostic services, pest management strategies and plant health surveillance programme to support the phytosanitary functions of the two QIG departments.

The QIG is responsible for the regulation of controlled products, inspection, risk assessment, accreditation of exporters and quarantine pest surveillance. These tasks are undertaken by two departments: Import and Export Regulation Department and the Inspection Department.

The AVA has delegated tasks through the Assurance Certification Scheme (ACS), based on an integrate systems approach to exporting companies, these include: maintain a traceable management system on the processing of regulated articles for export, responding to any notifications of non-compliance and, for pre-departure treatments and pre-export checks.

The AVA has established an International Advisory Committee of Experts to conduct a regular external assessment of its functions. The plant health component was covered in 2003 (2nd review) and 2008 (4th review).

The inspection procedures under QIG were at the time of the FVO audit, undergoing audit by the Ministry of National Development as part of the overall scheduled internal auditing of the AVA.

5.1.2 Legislation

The basic pieces of legislation covering the plant health policy related to exports in Singapore are the 'Control of Plants Act' and 'Phytosanitary Certification Rules'. Both cover export and phytosanitary certification, such as: general powers of officers (enter premises, inspect, collect samples etc.), access to documents and records, issue phytosanitary certificates, penalties and offenses.

Additionally, there are subsidiary rules covering analysis and inspection fees.

5.1.3 Resources

As indicated in section 5.1.1 above, two sectors are involved in plant health: QIG and PHLD. In QIG there are 19 professional staff, from which nine are plant health inspectors. PHLD has 15 professional staff.

The minimum education level for the plant health inspectors is secondary education.

5.1.4 Guidelines and training

Guidelines and work instructions are available to staff performing checks in the export chain. These include the 'Phytosanitary Manual' and Standard Operating Procedures (SOP), both relate to certification and inspection of plant and plant products. In addition, ISPMs and the import requirements of the major importing countries are also available.

Training has been provided to the AVA plant health inspectors regarding ISPMs, treatments and

SOPs. In 2012, and in order to strengthen the Assurance Certification Scheme (ACS) (see section 5.6.2 below) dedicated training was provided to the AVA inspectors on field inspections and identification of harmful organisms.

Under the ACS, eight sessions of training (including a proficiency assessment) were provided to the inspectors of the companies exporting aquatic plants, cut flowers and foliage to the EU.

The FVO team noted that the 'Phytosanitary Manual' provides general information on import and export procedures, including the EU import requirements. Guidance on the symptoms of harmful organisms is also available. During the field visits, the AVA inspectors had specific guidelines and working instructions for inspection and they were aware of the EU harmful organisms of concern and EU requirements.

5.1.5 Laboratories and technical support

PHLD acts as the reference laboratory for plant health. The laboratories are ISO 17025 accredited for 19 tests. The laboratory carries out diagnostic and analytical testing and provides scientific advice and internal and external training. It is also involved in research and development, and risk assessment. It also develops new testing technology and pest management strategies.

The plant health laboratories are annually audited by the Singapore Accreditation Council under the ISO 17025 General Requirements for the Competence of Testing and Calibration Laboratories. PHLD has maintained the accreditation status under ISO 17025 since 2005. In addition, PHLD also undergoes annual internal audit by trained ISO 17025 auditors (AVA officers).

The audit team visited the PHLD and met staff. It was noted that the laboratory has adequate equipment for performing analysis, including bio-molecular techniques. In 2012, 406 samples were processed resulting in 494 tests (299 for entomology, 119 nematology and 76 pathology). In 21 tests, harmful organisms were found, mainly nematodes and thrips.

5.1.6 Communication with stakeholders

In Singapore, there are six main exporters of aquatic plants and four exporters of orchid cut flowers and the AVA communicates with these through emails, dialogue sessions/consultations, circulars and via the AVA website.

Conclusions on organisational aspects of plant health controls

The organisation of the NPPO is clear and staff has clear responsibilities and their tasks are well defined. There is an internal and external assessment of the AVA. Legislation addressing export control and export procedures is in place. Guidelines and training are provided to the AVA inspectors and certified inspectors. The official laboratory is well equipped and technically competent. There is a good communication with stakeholders.

5.2 PLANT HEALTH STATUS

Legal requirements

Part A of Annexes I and II to Council Directive 2000/29/EC lists those harmful organisms whose introduction and movement within the EU is banned. Those of particular relevance to this audit include *Bemisia tabaci*, nematodes (*Hirschmanniella* sp., *Radopholus* sp. and *Meloidogyne* sp. etc.) and *Thrips palmi* and other Thysanoptera.

Commission Implementing Decision 2012/697/EU on measures to prevent the introduction into and spread within the Union of the genus *Pomacea* (Perry) requires that plants for planting that can only grow in water or soil that is permanently saturated with water, when introduced in the EU have to be accompanied by a phytosanitary certificate with an additional declaration stating that the plants have been found free from *Pomacea*.

Findings

The AVA stated that harmful organisms of concern to the EU are present in Singapore and are not considered as quarantine pests¹.

Bemisia tabaci and the nematode hosting aquatic plants are monitored under the general survey of the territory. The AVA stated that, *Bemisia tabaci* is widespread in Singapore, therefore all places of production in open air are infested with the pest.

Thrips palmi is monitored weekly in selected orchid farms and when a certain threshold is reached, the AVA issues a warning for farmers to start treating.

There is no information on the presence or distribution of the EU quarantine viruses transmitted by *Bemisia tabaci*.

The AVA stated that *Pomacea* is present in Singapore and after the publication of the EU Decision in November 2012, the snail is no longer exported to the EU together with ornamental fish.

Conclusion

The organisms of concern to the EU are present in Singapore and no statutory measures are in place.

5.3 EXPORT PROCEDURES

Legal requirements

Annex IV, Part A Section I establishes specific requirements for plants and plants products that must be met in order to be exported to the EU. These may vary depending on the status of the relevant harmful organism in the country of origin.

Annex V, Part B to Council Directive 2000/29/EC lists the plants, plant products and other objects

¹ In their response to the draft report the Competent Authority noted that *Bemisia tabaci* and *Thrips palmi* are listed as Regulated Non-Quarantine Pests under the Plant Importation Rules.

which must be subject to a plant health inspection in the country of origin or the consignor country, if originating outside the EU and accompanied by a phytosanitary certificate.

ISPM 7 describes the basic elements of the phytosanitary certification process and the requirements for a certification system to fulfil these functions.

Findings

The export procedure is based on the ACS, a voluntary scheme, offered by the AVA to all companies exporting plants, cut flowers and plant products.

The objective of the ACS is to have an ordered and coordinated quality control process in order to produce a product that consistently meets the AVA's phytosanitary export certification requirements as well as to comply with the phytosanitary requirements of the importing countries. The benefits for the exporter are mainly, to undertake specific phytosanitary activities, such activities are carried out in their own premises and they may be carried out at any time (instead of being limited to the AVA's operating hours). The companies can also enjoy financial savings (special fees).

The company has to follow prescribed requirements by the AVA in order to undertake phytosanitary activities on behalf of the AVA and, take into account the international requirements on commodities produced in their premises. How such activities are carried out is documented by the company in a ACS Manual. By implementing the Quality Management System prescribed in the ACS Manual the exporters minimize phytosanitary risks in inspection and certification activities delegated by the AVA. The AVA ensures that the Quality Management System is effective through periodic audits.

The company has to fulfil several minimum requirements to be eligible and before approval the AVA carries out an initial site audit. One of the requirements is that the company has no fewer than two AVA certified inspectors to conduct raw material and final export inspection. The certified inspectors are required to have successfully completed the course on Inspection Techniques and Pest Identification and Inspection conducted by PHLD (see section 5.1.4 above).

For companies exporting aquatic plants, cut flowers and cut foliage, the AVA carries out 3 audits per year. However, the AVA may decide to vary the frequency or intensity of the audits, after consideration of the company's performance, whether there are repeated interceptions from importing countries or changes in risk factors.

The company inspectors (certified inspectors) are responsible for phytosanitary issues, performing the required field inspections and for certifying consignments on behalf of the AVA. Under the normal ACS regime, the AVA is issuing the export phytosanitary certificates based on the final inspection carried out by the certified inspectors.

With the strengthening of the ACS and since April 2012, official pre-export inspections are carried out by AVA for aquatic plants exported to the EU. Regular pest monitoring is also carried out on the places of production of aquatic plants (see section 5.6.2 below). However, no official pre-export inspection is carried out for orchid cut flowers as required by the EU legislation (see section 5.4.3).

There is no formal registration of producers or exporters but, excluding Internet traders, they are known to the AVA.

The AVA stated that all producers exporting to the EU are included in the ACS. However, they may source plants from other producers not involved in the ACS.

During the audit the FVO audit noted:

- the certified inspectors are private individuals who are trained and accredited by the AVA and are employed by the producer;
- the certified inspectors are aware of the EU harmful organisms of concern and, under the ACS, they are in practice inspecting the consignments for exports whilst the AVA is only issuing the phytosanitary certificates (e.g. orchids).
- for aquatic plants official pre-export inspections and monitoring for *Bemisia tabaci* with yellow sticky traps once every two weeks, are now being carried out.

Conclusion

In the case of aquatic plants for export to the EU, there is now an official involvement from the AVA in the ACS to comply with the EU import requirements. After the strengthening of the ACS, official pre-export inspections and monitoring of *Bemisia tabaci* in the ACS companies are carried out, although they still do not meet EU requirements (see section 5.4.2). In addition, the EU requirements for orchid cut flowers are not met (see section 5.4.3).

5.4 EXPORT INSPECTIONS

Legal requirements

Annexes I and II Part A to Council Directive 2000/29/EC list those harmful organisms whose introduction and movement within the EU is banned.

Annex V, Part B lists the plants, plant products and other objects which must be subject to a plant health inspection in the country of origin or the consignor country, if originating outside the EU and accompanied by a phytosanitary certificate.

Annex IV, Part A Section I establishes specific requirements for plants and certain plants products, which must be met for exported to the EU. In particular, points 32.1, 32.3, 33, 36.1, 41, 44, 45.1, 46 and 36.2 lay down provisions for the export for plants for planting and orchid cut flowers. In particular:

- for aquatic plants and taking into account that *Bemisia tabaci* is prevalent in Singapore, point 45.1 of Annex IV, Part A, Section I of Council Directive 2000/29/EC is applicable. Therefore, the requirements are: official statement that the plants, in cases where *Bemisia tabaci* (non-European populations) has been found at the place of production, are held or produced in this place of production and have undergone an appropriate treatment to ensure freedom from *Bemisia tabaci* (non-European populations) and subsequently this place of production shall have been found free from *Bemisia tabaci* (non-European populations) as a consequence of the implementation of appropriate procedures aiming at eradicating *Bemisia tabaci* (non-European populations), in both official inspections carried out weekly during the nine weeks prior to export and in monitoring procedures throughout the said period. Details of the treatment shall be mentioned on the certificates referred to in Article 7 or 8 of

the Directive (phytosanitary certificates).

- for orchid cut flowers and taking into account that *Thrips palmi* is prevalent in Singapore, point 36.2 second indent of Annex IV, Part A, Section I of Council Directive 2000/29/EC is applicable. Therefore, the requirements are: official statement that the cut flowers, immediately prior to export have been officially inspected and found free from *Thrips palmi*.

Annex 1 of Decision 2012/697/EU lays down the requirements for the export of aquatic plants as regards freedom from *Pomacea* (Perry).

ISPM 23 establishes guidelines for inspection. Section 1.4 describes the requirements for inspectors, including access to appropriate inspection facilities, tools and equipment.

ISPM 31 provides methodologies for sampling of consignments.

Findings

5.4.1 Facilities for performing inspections

As referred in section 4.2.2, the pre-export inspection is carried out in the premises of the exporter and there is no inspection at the point of exit.

One of the requirements for the companies under the ACS is that they have to provide adequate infrastructure (premises and facilities), equipment and facilities to carry out inspections, consignment verification and waste disposal.

During the field visits, the FVO team noted that the facilities for performing export inspections were sufficient and lighting, inspection tables and appropriate areas for inspection were available.

Conclusion

Inspection facilities are appropriate for performing export checks of consignments equivalent to those laid down in ISPM 23.

5.4.2 Export inspection of aquatic plants

The FVO team visited two ACS producers of aquatic plants. One company exports around 40% of the production to the EU and the production is made of 70% local production and 30% imported from another country. The second company exports around 45% of the production to the EU and the production is made of 10% local production and 90% imported from another country. The plant material from another country may originate in accredited nurseries under a bilateral agreement scheme or sourced from producers not accredited under the agreement (see section 5.5 below).

The control system in both companies is similar. It is based on integrated measures comprising: monitoring of harmful organisms with yellow sticky traps around plots and tanks, routine alternate chemical sprays and application of specific active substances if *Bemisia tabaci* is detected in the place of production. Official inspections are carried out every two weeks.

Official samples for nematode detection are collected every two months by the AVA inspectors. If

nematodes are found, control measures are taken in order to eradicate the harmful organism. One producer, has basic equipment and is skilled in nematode detection on aquatic plants.

One of the companies indicated that they submerge aquarium plants under water for long periods as a control measure for *Bemisia tabaci*. In the same company, the use of mist is believed to prevent the infestation of *Bemisia tabaci* and it is routinely made for emerged plant species one week before export.

For plant material originated in another country the company certified inspectors perform an initial check of the plants. Later, plants are dipped in an insecticide solution, rinsed and jet washed to clean any snails or snail eggs that may be present. After packing, a final check is made by the certified inspector. If no harmful organisms are found, certification is requested to the AVA. The AVA inspector carries out an export inspection and a phytosanitary certificate is issued if no harmful organisms are found.

During the visits the audit team noted:

- in one place of production where exports were taking place to the EU, *Bemisia tabaci* was detected in yellow sticky traps by the AVA inspectors, but they took no specific action following these findings in the spot;
- for aquatic plants originating in another country the period between the order and the actual export is very short (1 to 4 days) therefore, the EU requirements are not fulfilled in Singapore before export;
- one of the companies is unable to submerge aquatic plants for a long time since they rot, therefore it was left with the option of exporting emerged plants (high risk plants);
- in the case of *Bemisia tabaci* infested places of production, no official inspections or monitoring procedures are carried out weekly during nine weeks prior to export;
- the places of production have not been found free from *Bemisia tabaci* after implementation of appropriate procedures aiming at eradicating *Bemisia tabaci*;
- exports of aquatic plants to the EU are taking place from places of production not free from *Bemisia tabaci*.
- the two month official sampling and testing for nematodes may be insufficient taking into account the life cycle of the pests however, an AVA pre-export inspection is carried out before export to check also for symptoms of the presence of nematodes.
- measures are in place to guarantee that the exported aquatic plants are free from snails of the genera *Pomacea*.

In addition, the audit team attended two official inspections of aquatic plants and noted:

- when a harmful organism is found only the intercepted plant species is removed from the consignment and the rest of the consignment is exported to the EU;
- the sample size taken from each lot is in line with ISPM 31 however, the lots for sampling were not homogeneous in respect of their origin.

Conclusion

The EU requirements in point 45.1 c) of Annex IV, Part A, Section I of Council Directive 2000/29/EC, for place of production freedom from *Bemisia tabaci* in aquatic plants are not respected. Decision 2012/697/EU is observed in Singapore.

No scientific information was provided on the efficacy of submerging high risk aquatic plants during 9 weeks. Although, the measure may provide freedom from *Bemisia tabaci*, this has to follow a procedure to be officially considered as equivalent to the EU requirements in place. Moreover, the measure is not applied consistently in Singapore and it does not cover all exported species.

When an harmful organism is found, only the infested plant species is removed and the consignment is exported, this is not in line with ISPM 23 and 31, or the EU import requirements for regulated articles. The inspected lots were not homogeneous in respect of their origin, this is not in line with ISPM 5 and ISPM 31.

5.4.3 Export inspection of orchid cut flowers

The audit team visited one ACS exporter of orchid cut flowers and cut foliage. The company exports around 40% of the production to the EU. The production is made of 5-10% local production and the rest imported from another country.

The AVA has in place a specific monitoring using blue sticky traps for *Thrips palmi*. Generally preventive chemical sprays are routinely applied but, if a certain threshold of thrips is reached in the traps the producer is informed by the AVA and, a more specific treatment is carried out.

When the cut flowers arrive in the premises they are checked by the certified inspector and if more than 3 insects are found the lot is rejected. In the next step, plants are dipped in an insecticide/fungicide solution. Before packaging a new visual check is carried out for detection of harmful organisms. The certified inspector carries out a final inspection on the boxes before shipment. If no harmful organisms are found, certification is requested to the AVA but no official pre-export inspection is carried out by the AVA inspector.

During the visit the FVO team noted:

- the company carries out field treatments in order to control *Thrips palmi* in the premises;
- the certified inspector carried out an appropriate inspection of orchid cut flowers, if no harmful organisms are found requests certification from the AVA;
- the AVA issues the phytosanitary certificate to be collected in their office by the company;
- no official inspection is carried out prior to export.

Conclusion:

Pre-export checks of orchid cut flowers are carried out, but they are not official as required in point 36.2 of Annex IV, Part A, section I of Council Directive 2000/29/EC.

5.5 PHYTOSANITARY CERTIFICATES

Legal requirements

Article 2(1)(i) of Council Directive 2000/29/EC establishes the requirements for a measure or statement, to be considered as 'official'. In particular, '...if it is made by representatives of the official national plant protection organisation of a third country, or, under their responsibility, by other public officers who are technically qualified and duly authorised...'

Paragraph 3 of Article 13a establishes requirements for the phytosanitary certificate, in particular its format, the information it should contain and its issuance. Paragraph (4) of the same Article contains requirements relating to the use of additional declaration on phytosanitary certificates.

Paragraph 4 c) and d) of Article 13a lays down the provisions for the phytosanitary certificate issued in the country of origin and consignor country.

Annex IV, Part A Section I establishes specific requirements which must be met in order to export plant and certain plant products to the EU.

ISPM 12 establishes guidelines for phytosanitary certificates.

Findings

The AVA stated that a phytosanitary certificate is always issued for consignments exported to the European Union.

Exporters will apply for export certification for their consignments through an online AVA system called 'eCLiPS'. The applications will be printed and passed to the inspectors. For applications that require additional declaration such as pest freedom, representative samples of the consignment will be collected during inspection. After inspection, the inspection results will be updated on the application form and in the inspection module of another AVA system 'iFAST'. The samples collected will be registered in the laboratory module in iFAST and submitted to PHLD for analysis. Inspectors from QIG will access the 'iFAST' for the laboratory results and complete verification before the issuance of the phytosanitary certificates.

Singapore requires that imported consignments of plants and cut foliage are accompanied by a phytosanitary certificate. In addition, for such imports there are specific import requirements if the plants originate in the South American tropics, where certification is required for freedom from *Microcyclus ulei* (South American Leaf Blight). For plants accompanied with growing media, certification is required for freedom from nematodes. Imported consignments of cut flowers do not need a phytosanitary certificate.

Singapore has a bilateral agreement scheme with another country that started in 2009. At the moment, there are 68 accredited nurseries in the scheme. Singapore and the partner country carry out annual audits together in nurseries under the bilateral agreement scheme.

For the companies under the bilateral agreement scheme, the exported consignments to Singapore do not need to be accompanied by a phytosanitary certificate, but only by commercial documents. For exports from non accredited producers outside the bilateral agreement scheme, Singapore requires that the partner country issues a phytosanitary certificate. There are no specific plant health

requirements for such phytosanitary certificates.

After strengthening of the ACS, the AVA inspectors perform a random 10% plant health inspection on plants originated from the partner country. This inspection covers mainly the presence of *Bemisia tabaci* and symptoms of nematodes.

During the visits the audit team noted:

- for consignments of aquatic plants originated in the partner country, there is no reference in any of the accompanying documents (commercial or phytosanitary certificates) to the fulfillment of EU requirements for aquatic plants (official field inspections). The requirements are not fulfilled in Singapore either, before export to the EU;
- the same consignments of aquatic plants are exported to the EU with a phytosanitary certificate issued by Singapore including an additional declaration that the requirements of point 45.1 c) of Annex IV, Part A, Section I of Council Directive 2000/29/EC have been met.
- the audit team checked several phytosanitary certificates addressed to the EU Member States and noted that the additional declarations on the phytosanitary certificate issued by Singapore for aquatic plants were missing and therefore, not in line with the EU legislation²;
- from the documents checked, it is possible to trace back and identify the farms implicated in EU interceptions, starting from the phytosanitary certificate number.

Conclusions

Singapore issues phytosanitary certificates for export of aquatic plants to the EU originated in another country for which, the country of origin, does not certify the fulfilment of the EU requirements of Council Directive 2000/29, this is not in line with Art. 13a point 4 c) and d) of Council Directive 2000/29 and point 6.1 of ISPM 12. The requirements are not fulfilled in Singapore either, before export to the EU.

The additional declarations in the phytosanitary certificates for exports to the EU, did not mention the correct points of Annex IV, Part A, Section I relevant for plants for planting, therefore they are not in line with the EU legislation.

Traceability of consignments is possible for aquatic plants and orchid cut flowers mainly through commercial documentation, in line with ISPM 7.

5.6 ACTION TAKEN IN RESPONSE TO INTERNAL INTERCEPTIONS AND NOTIFICATION OF INTERCEPTIONS FROM THE EU

Legal requirements

ISPM 7 describes the basic elements of the phytosanitary certification process and the requirements for a certification system to fulfil these functions. Section 6.1 (System review) requires that the NPPO should periodically review the effectiveness of all aspects of its export certification system and implement changes to the system if required. Section 6.2 (incident review) requires that the

² In their response to the draft report the Competent Authority noted that the phrasing of the additional declarations were as requested by some EU Member States.

NPPO establish procedures for investigating reports from importing countries of non-conforming consignments covered by a phytosanitary certificate.

ISPM 23, Section 2.6 (Review of inspection systems) establishes that NPPOs should conduct periodic reviews of import and export inspection systems to validate the appropriateness of their design and to determine any course of adjustments needed to ensure that they are technically sound.

Findings

5.6.1 Internal interceptions

In the ACS, the non-compliances are graded as general, major and critical depending on their seriousness. In addition, the ACS has a procedure for dealing with non-compliances detected during the AVA audits. For example, if a critical non-compliance is detected a one month suspension of the exporting company is declared. After corrective action and if a second critical non-compliance is detected the suspension is increased to three months. A new corrective action is proposed, but in case a third critical non-compliance is detected the company is notified by the AVA to stop exports. It is allowed to rejoin the ACS six months later after the AVA had carried out audits confirming the improvements in the production system.

The audit team analysed the list of internal non-compliances provided by the AVA and noted that very rarely *Bemisia tabaci* was found in the places of production and when it was the corrective action taken only referred to immediate application or rotation of treatments to control the pest.

5.6.2 EU notifications of interception

The AVA system of response and action to be taken focuses on the interceptions notified by the importing countries. Therefore, action was taken as regards the EU interceptions.

The ACS has an appendix for non-compliances of EU interceptions, defining non-compliances (general, major and critical) and corrective actions. It should be noted that an interception of harmful organisms on exported consignments is considered as critical non-compliance when the consignment is destroyed. On the other hand, when the consignment is treated and released, is considered only as a major non-compliance. Most of the consignments found infested with harmful organisms in the EU are destroyed.

The ACS has a procedure for dealing with non-compliances when harmful organisms are detected in the importing countries similar to the one applied for internal interceptions (see previous section). For critical non-compliances, the main difference is that, the company is notified by the AVA to stop the exports only after a fourth EU interception and if it takes place within one year.

There are two grades of non-compliances used depending on whether the consignment is rejected/destroyed or released/treated in the EU, leading to two types of response to address the same plant health problem in the origin.

The corrective action is proposed by the ACS producer and assessed and confirmed by the AVA.

During the audit the FVO team noted:

- the exporters/producers are informed by the AVA about the EU interceptions originating

from their company;

- when the plants are sourced from a supplier, it is the ACS producer that establishes the corrective action for the supplier with no involvement of the AVA.

In a continuing effort to reduce the interceptions of *Bemisia tabaci* on aquatic plants, the AVA informed the FVO team that they strengthened the ACS. The main additional measures taken were to:

- strengthen the sanction regime of the ACS with definition of different types of non-compliances and criteria for suspension and termination of the exports of the ACS companies. Require a new specific training for the certified inspectors, including a proficiency test with at least 80% as passing grade (end 2011);
- suspend the export of seven high risk species/genera of aquatic plants (emerged plants): *Alternanthera* spp., *Hygrophila* (= *Nomaphila*) *corymbosa*, *Hygrophila* (= *Nomaphila*) *salicifolia*, *Cryptocoryne wendtii*, *Hemigraphis* spp., *Anubias barteri* and *Echinodorus* spp (from 16/04/2012);
- start the official pest monitoring and pre-export inspection for aquatic plants exported to the EU, since until then, under the normal ACS regime, the checks were only carried out by the certified inspectors. Increase from 0.5 to 10% the percentage of checks on incoming plant material (mid 2012);
- whenever possible, implement the measure of submerging the aquatic plants for nine weeks prior to export. The production, under submerged conditions, of the above mentioned seven high risk aquatic plant species/genera, started in May 2012. The AVA initiated the monitoring of this type of production once every fortnightly (May 2012). The exports of submerged high risk plants resumed in September 2012;
- refresher training for the AVA inspectors on inspection and pest identification, including a proficiency test where all inspectors attained at least 80% as passing grade (end 2012);
- the 'Phytosanitary Manual' was implemented in December 2012. Revision of SOPs in order to align them with the ISPMs, in particular with ISPM 31.

Conclusion

Action was taken by the AVA following EU interceptions, however the follow up is not possible for producers outside the ACS. As a result of the continuous EU interceptions of harmful organisms on aquatic plants, the ACS was reinforced. However, as mentioned in section 5.4.2 above, the EU requirements for *Bemisia tabaci* are still not met for plants for planting.

5.7 WOOD PACKAGING MATERIAL AND ISPM 15 CERTIFICATION

Legal requirements

Point 2 of Annex IV, Part A, Section I of Council Directive 2000/29/EC provides conditions for importing wood packaging material from third countries.

ISPM 15 provides guideline for regulating wood packaging material in international trade.

Findings

The AVA stated that ISPM 15 has been implemented in Singapore since 2004. There are currently 51 authorised treatment facilities for wood packaging material. The AVA accredits companies which have the facilities and expertise to carry out treatments in compliance with ISPM 15. Most of the wood packaging material either ready made or raw materials, are imported. Singapore has an estimated import volume of 3,000 Tonnes of timber sourced from New Zealand, Malaysia, Australia, United States of America, Canada and EU. Ready made wood packaging material such as pallets and cases are mainly sourced from a neighboring country.

The Treatment Provider Scheme is a voluntary scheme that specifies the requirements for a treatment provider to be accredited with the AVA to carry out phytosanitary treatments to meet export certification requirements of ISPM15.

Currently, the requirement of ISPM 15 compliance on import of wood packaging material into Singapore is still under review and in consultation with stakeholders

The FVO team visited an authorised facility. The facility has two kilns and performs heat treatment of pallets originating from 10 suppliers in a neighboring country. The company treats 60,000 palletes per month, but it is expected to reach 100,000 pallets per month in the near future.

The operator is authorised to affix the ISPM 15 mark, the format of which, is in line with that established in the Standard. The actual temperature profile of the treatment is recorded in a specific software.

The FVO team attended the final phase of a heat treatment cycle for pallets and noted that temperature registered had reached 56C for 30 minutes in all the probes. The probes were correctly placed in the thickest part of the wood and insulated with silicone. The stacking of the pallets in the kiln was appropriate.

Conclusions

ISPM 15 is implemented in Singapore. The treatment facility visited by the FVO team met the requirements for complying with the Standard.

6 OVERALL CONCLUSIONS

There is a clear structure and division of responsibilities within the national plant protection organisation. Staff are well trained and generally aware of the EU harmful organisms of concern and EU import requirements. The official laboratory is well equipped and is technically competent. There is a good communication with producers and exporters.

As a result of the continued interceptions in the EU, the Agri-Food & Veterinary Authority (AVA) reinforced the Assurance Certification Scheme (ACS) and several additional steps were taken, including the suspension of exports of seven species/genera of aquatic plants. These actions have reduced the number of EU interceptions of harmful organisms.

However, shortcomings were still identified during the audit:

Some EU plant health requirements are not respected. For exports of aquatic plants to the EU originating in another country, Singapore is issuing phytosanitary certificates with additional declarations for which the country of origin does not certify the fulfillment of the requirements in Council Directive 2000/29/EC. Furthermore, those requirements are not fulfilled in Singapore either, before export to the EU.

Plant health checks are not carried out appropriately, in particular for sampling and action taken in the case of infested aquatic plants.

7 CLOSING MEETING

A closing meeting was held on 24 June 2013 at the headquarters of the AVA, during which the main findings and conclusions of the FVO team were presented. The AVA provisionally accepted these and indicated that they were open to the possible recommendations to be made by the FVO.

8 RECOMMENDATIONS

The National Plant Protection Organisation of Singapore is recommended to:

N°.	Recommendation
1.	Ensure that for aquatic plants exported to the EU, the requirements in point 45.1 c), Annex IV, Part A, Section I of Council Directive 2000/29/EC, for place of production freedom of <i>Bemisia tabaci</i> , are fulfilled.
2.	Ensure that for orchid cut flowers exported to the EU, the requirements in point 36.2 second indent, Annex IV, Part A, Section I of Council Directive 2000/29/EC are fulfilled. In particular, that the pre-export inspections are official.
3.	Ensure that when a harmful organism is detected during the pre-export inspection, the whole lot should be considered as infested and should not be exported to the EU since it does not comply with EU requirements, and point 1.1 of ISPM 12 and point 2.5 of ISPM 23.
4.	Ensure that for consignments of aquatic plants, the samples used for the inspection prior to export are revised and defined to ensure that the homogeneity and origin of the lots is respected, in line with point 1 of ISPM 31 and ISPM 5.
5.	Ensure, that phytosanitary certificates and the relevant additional declarations are only issued for exports of aquatic plants to the EU when the requirements in point 45.1 c) Annex IV, Part A, Section I of Council Directive 2000/29/EC have been met.
6.	Ensure that in the case of aquatic plants originating in another country and exported to the EU, phytosanitary certificates for re-export are issued by Singapore based on official guarantees provided by the country of origin that EU requirements have been met, in accordance with Article 13a point 4 c) and d) of Council Directive 2000/29 and

N°.	Recommendation
	point 6.1 of ISPM 12.
7.	Ensure that phytosanitary certificates addressed to the EU specify under the heading 'Additional Declaration' which special requirement out of those listed as alternative in the relevant position in the different parts of Annex IV have been complied with, in accordance with Article 13a point 4 b) of Council Directive 2000/29/EC.

The competent authority's response to the recommendations can be found at:

http://ec.europa.eu/food/fvo/rep_details_en.cfm?rep_inspection_ref=2013-6814

ANNEX 1 - LEGAL REFERENCES

Legal Reference	Official Journal	Title
Dir. 2000/29/EC	OJ L 169, 10.7.2000, p. 1-112	Council Directive 2000/29/EC of 8 May 2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community
Dec. 2012/697/EU	OJ L 311, 10.11.2012, p. 14-17	2012/697/EU: Commission Implementing Decision of 8 November 2012 as regards measures to prevent the introduction into and the spread within the Union of the genus <i>Pomacea</i> (Perry)

ANNEX 2 - STANDARDS QUOTED IN THE REPORT

International Standard	Title
ISPM No. 5	International Standards for Phytosanitary Measures N°5, Glossary of phytosanitary terms, Food and Agriculture Organisation.
ISPM No. 7	International Standards for Phytosanitary Measures N°7, Export certification system, Food and Agriculture Organisation.
ISPM No. 12	International Standards for Phytosanitary Measures N°12, Guidelines for phytosanitary certificates, Food and Agriculture Organisation
ISPM No. 15	International Standards for Phytosanitary Measures N°15, Guidelines for regulating wood packaging material in international trade, Food and Agriculture Organisation.
ISPM No. 23	International Standards for Phytosanitary Measures N°23, Guidelines for inspection, Food and Agriculture Organisation.
ISPM No. 31	International Standards for Phytosanitary Measures N°31, Methodologies for sampling of consignments, Food and Agriculture Organisation.