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Directorate F - Food and Veterinary Office

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FINAL REPORT OF A MISSION CARRIED OUT IN
THAILAND
FROM 05 MARCH TO 13 MARCH 2008
IN ORDER TO
EVALUATE CONTROLS OF PESTICIDES IN FOOD OF PLANT ORIGIN INTENDED FOR
EXPORT TO THE EUROPEAN UNION

Please note that factual errors in the draft report have been corrected in response to comments by the Competent Authority.

EXECUTIVE SUMMARY

This mission was a follow-up inspection to DG(SANCO)/8002/2006 in January 2006 on the evaluation of control systems for pesticide residues in foodstuffs of plant origin intended for export into the European Union (EU). Since the last mission, there were 24 notifications in the EU Rapid Alert System for Food and Feed (RASFF) for pesticide residues in vegetables imported from Thailand.

Control of Marketing and Use of Plant Protection Products (PPPs)

Since the last mission, substantial training was provided to all stakeholders. Documented procedures for planning, performing and reporting of controls have been improved. The competent authorities have a sufficient number of trained staff to perform the controls.

The mandatory Good Agricultural Practice (GAP) certification of farmers for exports of 32 commodities to the EU is expected to increase the general awareness of producers for the safe and legal use of PPPs. However, there is no GAP manual available for many of the 32 commodities, and existing GAP manuals were not developed for compliance with EC MRLs.

Control system for pesticide residues in foodstuffs of plant origin

The mandatory export certification of consignments intended for export to the EU is linked to EC MRLs. However, it is not fully effective because it includes only 10 commodities and not the commodities recently notified in the EU RASFF, in particular yard-long beans, and it is limited to only 30 pesticides. At the time of the mission, export certificates were not checked at the point of export, but new legal provisions are adopted to rectify this short-coming.

The mandatory Good Manufacturing Practice (GMP) certification of pack-houses for exports of the 32 commodities to the EU allows the competent authority to extend controls over these establishments. The competent authorities also made the registration of exporters to the EU mandatory, which is in line with Article 10 of Regulation (EC) No 852/2004 in connection with Article 6 of the same Regulation. Exporter registration and GMP certification of pack-houses is effectively checked at point of export, but are not linked to compliance with EC MRLs.

Since the last mission, an effective system was put in place for the follow-up of EU RASFF notifications.

Substantial laboratory resources are available, which would allow for the analysis of a high number of samples with a broad analytical screen and comprehensive quality control procedures, but resources are not used effectively. Only two of the five laboratories involved in pesticide residue analysis for EU export certification have achieved accreditation. The analytical scope is small, and does not meet the national legal requirement for export certification.

Additional private controls of the food business operators provide additional assurances for compliance with EC MRLs.

Overall conclusion

A system is in place for certification of compliance with EC MRLs of consignments intended for export to the EU. However, it is not fully effective, in particular as it does not include the commodities recently notified in the EU RASFF. Significant progress was made with the development of additional controls over producers, pack-houses and exporters, but these are not linked to compliance with EC MRLs. Overall, the controls do not provide sufficient guarantees that food of plant origin exported from Thailand will comply with EC legislation.

The report contains recommendations to the competent authority of Thailand to address identified shortcomings.

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ABBREVIATIONS

Abbreviation	Explanation
APSRDO	Agricultural Production Sciences Research & Development Office
BLQS-DMSc	Bureau of Laboratory Quality Standards, Department of Medical Sciences
CA	Competent Authority
CODEX	Codex Alimentarius Commission of the Food and Agriculture Organization of the United Nations and World Health Organization
DOA	Department of Agriculture
DOAE	Department of Agricultural Extension
EC	European Community
ECD	Electron Capture Detector
EU	European Union

EUROSTAT	Directorate-General for European Statistics of the European Commission
FPD	Flame Photometric Detector
FVO	Food and Veterinary Office
GAP	Good Agricultural Practice
GC	Gas Chromatograph
GC-MS	Gas Chromatograph-Mass Spectrometer
GMP	Good Manufacturing Practice
HPLC	High Performance Liquid Chromatography
ISO	International Organisation for Standardisation
LC-MS	Liquid Chromatograph-Mass Spectrometer
MOAC	Ministry of Agriculture and Cooperatives
MRL	Maximum Residue Level
OAR	Office of Agricultural Regulation
OARD	Office of Agricultural Research & Development
PPP	Plant Protection Product
PPRDO	Post-Harvest and Processing Research and Development Office
RASFF	Rapid Alert System for Food and Feed
TOSS	Technical One Stop Service

1 INTRODUCTION

The mission took place in Thailand from 5 to 13 March 2008. The mission team comprised of two inspectors from the Food and Veterinary Office (FVO) and one Member State expert.

The mission was undertaken as part of the planned FVO's mission programme and was the second mission to Thailand dealing with pesticide residues in produce of plant origin.

The inspection team was accompanied during the whole mission by representatives from the central competent authority (CCA), the Department of Agriculture (DOA) of the Ministry of Agriculture and Cooperatives (MOAC).

An opening meeting was held on 5 March 2008 with the DOA and the Customs. At this meeting, the objectives of, and itinerary for, the mission were confirmed by the inspection team, and additional information required for the satisfactory completion of the mission was requested.

2 OBJECTIVES OF THE MISSION

The objective of the mission was to evaluate the controls of pesticides in food of plant origin intended for export to the European Union (EU). The implementation and the effectiveness of pesticide residue control plans were evaluated.

An assessment was carried out that the facilities and measures in place for the determination of pesticide residues in foodstuffs of plant origin and exported into the EU ensure that the product is within specified EU limits. As residue controls are related to the placing on the market and use of plant protection products (PPP), the control system for the latter functions was also evaluated.

The mission team followed up on the findings of the mission DG(SANCO)/ 8002/2006 from 18 to 27 January 2006 with the same objectives. The report of this mission can be found at: http://ec.europa.eu/food/fvo/ir_search_en.cfm

The mission formed part of a wider series of missions to Third Countries evaluating control systems and operational standards in this sector.

The mission was carried out in the framework of the EU legislation on pesticide MRLs:

- Council Directive 76/895/EEC;
- Council Directive 86/362/EEC;
- Council Directive 90/642/EEC;
- Regulation (EC) No 396/2005 of the European Parliament and of the Council.

The mission team also took into consideration the following EU legislation on food law, on general standards for official controls, on food hygiene and on the marketing and use of PPPs:

- Regulation (EC) No 178/2002 of the European Parliament and of the Council;
- Regulation (EC) No 882/2004 of the European Parliament and of the Council;
- Regulation (EC) No 852/2004 of the European Parliament and of the Council;
- Council Directive 91/414/EEC.

In pursuit of these objectives, the following sites were visited:

Competent authorities visited or met	Comments
Department of Agriculture (DOA) of the Ministry of Agriculture and Cooperatives (MOAC).	CCA for the control of marketing and use of PPPs and for control of pesticide residues in foodstuffs of plant origin intended for export.
Agricultural Production Sciences Research & Development Office (APSRDO) of DOA.	Competent authority (CA) for coordination of control of pesticide residues in foodstuffs of plant origin and for control of marketing of PPPs.
Technical One Stop Service (TOSS) Centre of DOA.	Management of records of controls conducted.
Office of Agricultural Regulation (OAR).	CA for registration of PPPs.
Regional Office of Agricultural Research & Development (OARD) No. 5, of the DOA in Chainat province.	CA responsible for control of marketing and use of PPPs and control of pesticide residues in foodstuffs of plant origin intended for export at regional and levels.
Phytosanitary Office at point of export in Bangkok Airport.	CA for plant health controls and control of exports of specific foodstuffs of plant origin.
Customs & Excise Office at point of export in Bangkok Airport.	CA for control of exports.
Laboratories visited	Comments
APSRDO Laboratory.	Conducts analyses for formulation and pesticide residue controls.
Private Laboratory for Pesticide Residues analysis.	Conducts analysis for pesticide residues in foodstuffs of plant origin intended for export.
OARD 5 Laboratory.	Conducts analysis for pesticide residues in foodstuffs of plant origin for Good Agricultural Practice (GAP) certification.
Inspection visits	Comments
Inspection visits to 2 growers and 2 pack-houses of foodstuffs of plant origin.	Producers of asparagus and yard-long beans and pack-houses in two provinces.

Inspection visit to retailer of PPPs.	Retailer of PPPs to growers in one province.
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3 LEGAL BASIS FOR THE MISSION

The mission was carried out under the general provisions of Community legislation, in particular under Article 46 of Regulation (EC) No 882/2004, and in agreement with the MOAC.

A full list of the legal instruments referred to in this report is provided in Annex 1. Legal acts quoted in this report refer, where applicable, to the last amended version.

4 BACKGROUND

4.1 BACKGROUND TO PRESENT MISSION

This mission was a follow-up of mission DG(SANCO)/8002/2006, which had been organised following breaches of EC MRLs for vegetables and fruit. The infringements had been reported to the European Commission within the EU monitoring programmes and within the EU Rapid Alert System for Food and Feed (RASFF). The report of the mission in 2006 contained recommendations to the authorities from Thailand, and an action plan was sent to the European Commission.

Since the last mission, there were a total of 24 EU notifications of the European Commission within the RASFF system relating to pesticide residues in vegetables from Thailand. Of the 24 RASFF notifications, 15 related to yard-long beans, two each for Chinese broccoli, chilli peppers, and aubergines, and one each for Chinese cabbage, parsley and coriander. In 21 of the notifications, various organophosphorous pesticides were detected, two of the notifications relate to the benzimidazole fungicide carbendazim, and one notification to the carbamate carbofuran. The detected pesticides generally have a high acute toxicity.

In addition, a number of exceedances of EC MRLs in fruit and vegetables from Thailand were notified by EU Member States to the European Commission.

4.2 PRODUCTION AND TRADE INFORMATION

The DOA provided information about the volume of exports of fresh fruit and vegetables to the EU. Exports of the 10 most important commodities are listed in table 1. The 12 EU RASFF notifications from 2007 related to yard-long beans, coriander, Chinese broccoli and Chinese cabbage. A total of 466 tonnes of yard-long beans, 243 tonnes of coriander, 73 tonnes of Chinese broccoli and 9 tonnes of Chinese cabbage were exported to the EU in that year.

Table 1: Main commodities (fresh fruit and vegetables) exported to the EU in 2007

Commodity	Quantity (tonnes)
Baby corn	4,824
Ginger	4,612
Asparagus	811
Papaya	571
Onion	539
Convolvulus	494
Yard-long beans	466
Sweet basil	449
Lemon grass	425
Aubergine	374

The majority of exports to the EU are shipped in small quantities to speciality shops for Asian food. A typical exported consignment as verified by the mission team consisted of 15 or more commodities and a total weight of 500 kg or less.

According to the data provided by the DOA, there were 67,895 tonnes of pesticide active substances imported in 2007, of which 50,175 tonnes (74%) were herbicides, 8,609 tonnes (13%) were insecticides and 6,608 tonnes (10%) were fungicides. A total of 1,350 tonnes of active substance was re-exported, resulting in an estimated use of 66,545 tonnes. The data indicate a significant increase in imports of pesticide active substances when compared with the 25,542 tonnes imported in 1996, and 53,050 tonnes imported in 2004. Since 2004, there was mainly an increase in the volume of imported herbicides.

5 MAIN FINDINGS

5.1 CONTROL SYSTEM FOR THE PLACING ON THE MARKET AND USE OF PLANT PROTECTION PRODUCTS

5.1.1 Legislation

Since the last mission DG(SANCO)/8002/2006, the Hazardous Substances Act has been revised on 25 February 2008. Amongst other provisions, the revision has introduced time limits of 6 years for authorisations of PPPs. The additional Notification (Ministerial Order) by the Department of Agriculture of 6 December 2007 specified criteria for planning and reporting pesticide residue trials.

5.1.2 Competent authority

Competencies remain unchanged since the last mission DG(SANCO)/8002/2006.

5.1.3 Authorisation of plant protection products

Since the last mission, the number of authorised PPPs has increased from 16,900 to 19,300. They contain 416 active substances.

According to the provisions laid down in the Notification of 6 December 2007 pesticide residue trials should be carried out in Thailand and results should be submitted for the authorisation of PPPs. The purpose of the trials is to obtain data for setting of pre-harvest intervals. MRL setting is not part of the authorisation procedure. APSRDO is the authority responsible for pesticide residue trials. An Agricultural Chemistry Research Group is established at the Research Project Administrative Branch at APSRDO. APSRDO stated that one of the activities of this group is to carry out pesticide residue trials as part of the CODEX procedure for MRL setting for specific crops like mango, pomelo (or pummelo), and durian.

There are 965 approved labels for the 19,300 authorised PPPs, and the OAR explained that there is a simplified procedure for the authorisation of generic products.

A register of authorised PPPs is available on the website of the OAR, and the CA stated that it is updated every six months. Paper copies of the register are published every second year. The latest revision is from 2006. A list of 95 banned pesticides and one severely restricted substance is also published.

The majority of pesticides, which were detected in the EU in vegetables from Thailand and notified within the EU RASFF system, are not authorised for use in Thailand, or not authorised for use on the analysed commodity. Other detected pesticides, e.g. triazophos and carbofuran, can be legally used on yard-long beans in Thailand.

5.1.4 Control activities regarding the placing on the market and the use of plant protection products

5.1.4.1 Planning, priorities and scope

According to the Appointing Order of 15 February 2008, the total number of inspectors for marketing inspections in the 8 OARD regional offices is 297. A further 14 staff are appointed in the Inspection Division of OAR at central level.

Written plans of controls on marketing for 2007 and 2008 were developed at central level and copies were submitted to the mission team. In 2008, inspections of 60 formulators and 5,000 retailers, and training of 4,000 sale supervisors is planned. Detailed plans for these controls were available. The OAR stated that the planning of control visits is based on risk assessment. Monthly surveillance plans are developed at regional level.

In the visited OARD of region 5,241 inspectors are responsible for GAP inspections of users.

5.1.4.2 Controls on marketing

There are 94 approved formulators (of which 90 are still active) and 11,000 registered retailers of PPPs. In 2007, 57 formulators and 9,200 retailers were inspected. A total of 1,669 samples of PPPs were sampled for formulation analysis at point of entry, factories and retailers. Some 25% of the 757 samples taken on the market were non-compliant. This is an increase from 10% in 2004 and 15% in 2005. The OAR stated that the reason for the higher percentage of non-compliant samples is the better targeting of samples by inspectors. In 2007, 12 training courses were provided for 5,200 sales supervisors. Training was also given in two courses to central and regional inspectors with a total of 360 participants.

The mission team observed an inspection of a retailer of PPPs. The inspection was performed by three OARD inspectors. They stated that inspections usually take 30 to 60 minutes. According to the surveillance plan 5 visits per day are performed, and the number of the inspection days per month is 5 to 6. The region visited is divided into 7 districts. The total number of licensed retailers in these districts is 231. Six inspectors divided into two groups are responsible for the inspections of the retailers. The inspectors stated that all the retailers should be visited at least once a year. In accordance with the national legislation pesticide retailers must have supervisors, who may give advice to growers. The supervisors should be trained by DOA before the first licensing and follow-up training is required every 5 years. In the retail shop visited, the supervisor had attended the last training course in April 2006. The supervisor relied on the materials provided during the training, books, manuals and brochures from the chemical companies as a basis for advice given. Recent paper and electronic copies of the register of authorised PPPs were available in the shop. The previous two inspections of the retailer had been performed in December 2006 and in February 2008. The inspectors stated that the first visit was performed according to the surveillance plan and the second was performed after a tip-off. The inspectors followed a standardised inspection form, which also served as a check-list, during the inspection. They stated that the same check-list is

used for inspections of retailers, wholesalers and service providers. The inspectors used the official register of authorised PPPs from 2002. The inspectors performed a check of PPP labels for presence of the registration number, trade name and general compliance with label requirements. No detailed label check was carried out. The inspectors also checked for the presence of banned pesticides and some pesticides classified by OAR for surveillance. The inspection form was completed, and non-compliances were listed as recommendations in the form. The completed form was signed by the retailer and the inspectors.

Samples can be taken randomly or in cases of suspicion, request of OAR and tip-off by farmers. Samples are forwarded through OARD and OAR to the ASPRDO laboratory, and results were stated to be available after 2-3 months.

5.1.4.3 Controls on Use

The visited OARD of region 5 is responsible for 16 of the 73 provinces in Thailand. In this region, 50,086 plots are registered for Good Agricultural Practice (GAP), and 13,282 are GAP certified. Training courses were implemented for farmers and advisors on the proper use of PPPs with 767 participants in 2006 and 1,300 participants in 2007 in all provinces of Thailand.

Since January 2008, GAP certification of farmers is required for exports of 32 commodities to the EU (see 5.2.1).

Two working groups were established to develop and update GAP manuals for fruits and vegetables. GAP manuals have been developed for 17 commodities. Most, but not all of them are included in the 32 commodities, for which GAP certification is required for exports to the EU. For yard-long beans, a draft GAP manual is available, which was explained to the mission team. Among other subjects, the draft manual included recommended pesticides for the different pests and diseases of yard-long beans. Four of the recommended pesticides, i.e. *Bacillus thuringiensis*, prothiofos, flufenoxuron and carbaryl are not authorised for use in yard-long beans in Thailand. No GAP manual is available for Chinese cabbage, Chinese broccoli and coriander, which were involved in EU RASFF notifications of 2007. It is noted that the GAP manuals were not developed for compliance with the export market.

Since 2007, the Department of Agricultural Extension (DOAE) of the MOAC is also involved in the GAP certification process, and DOAE staff provide advice and a first assessment of farms. OARD inspectors demonstrated GAP inspections of an asparagus producer (0.5 hectare) and a producer of yard-long beans (0.16 hectare). They followed a check-list. The inspector stated that the inspections typically last 1.5-2 hours. GAP certificates are valid for one year (vegetables) or two years (fruit), respectively.

The asparagus producer was first certified to GAP in January 2006, and applied for extension of the scope of certification in December 2007, i.e. one year after expiry of the first certificate. The OARD inspection took place in February 2008, and subsequently the farmer was re-certified with an extended scope. The farmer has a contract with an

exporter, who exports the produce to different countries, including EU Member States. The technical advisor kept records of applications of PPP for the farmer. Among the recorded uses of PPP was an application of a pesticide containing etofenprox. The authorisation status of this pesticide could not be clarified by the inspector, but the OAR confirmed after the visit that etofenprox is not authorised for use in asparagus in Thailand.

The grower of yard-long beans had been certified to GAP four days before the visit of the mission team, and was among the first GAP certified farmers of yard-long beans in the province. Prior to certification, the farmer had received training on pesticide applications by the DOA, was inspected by OARD inspectors, and random pre-harvest samples had been analysed for pesticide residues and checked for compliance with CODEX MRLs. The farmer also kept records of pesticide applications.

5.1.4.4 Follow-up of infringements

The OAR and OARD inspectors have no legal powers to act in case of non-compliance apart from notification to the public prosecutor. The CA can, however, withdraw the registration of retailers. In 2007, 78 infringements of retailers were referred to the public prosecutor. Registrations of 2 retailers with repeated infringements were withdrawn for 30 and 90 days, respectively.

5.2 CONTROL SYSTEM FOR PESTICIDE RESIDUES IN FOODSTUFFS OF PLANT ORIGIN

5.2.1 Legislation

Since the last mission, the Notification by the Department of Foreign Trade of 2003 for the compulsory pesticide residue analysis and export certification of 12 commodities was revised by the Notification by the Department of Foreign Trade of 30 April 2007. The two commodities tamarind and baby corn no longer require export certification, but the 10 commodities longan, durian, lychee, mangosteen, mango, pummelo, asparagus, ginger, okra and chilli require pesticide residue analyses for 53 pesticides and export certification as before. The four commodities yard-long beans, Chinese kale, Chinese broccoli and coriander, which were the subject of 12 notifications in the EU RASFF system in 2007, do not require export certification.

The Notification by the Department of Agriculture of 26 September 2007 specifies that for the issuing of phytosanitary certificates for exports to the EU, exporters must be registered, pack-houses must be GMP certified, and growers must be GAP certified. The Addendum of 28 December 2007 to the above notification specifies that the notification applies to 32 commodities for an unspecified transitional period: coriander, parsley, holy

basil, sweet basil, pak ka-yang, mint, praew, spring onion, celery, Chinese chive leaves, Chinese chive flowers, acacia, lemongrass, convolvulus, pak-wan, mimosa, pennywort, cha-plu leave, pak-kom, yard-long beans, asparagus, birdy chilli, pak pang, baby corn, okra, Chinese broccoli (Chinese kale), longan, durian, lychee, mangosteen, mango, pomelo. The Notification by the Department of Agriculture of 20 December 2007 provides criteria, procedures and conditions for registration of exporters to the EU.

The Notification by the Department of Agriculture of 11 January 2008 established the voluntary certification of production systems. Implementation has not started yet.

No new national MRLs have been established since the last mission.

5.2.2 Competent authorities

Competencies remain unchanged since the last mission.

5.2.3 Control activities regarding pesticide residues

5.2.3.1 Export certification

In 2007, five laboratories (see section 5.2.5) analysed 6,707 samples for EU pesticide residue export certificates of 12 commodities. Since 30 April 2007, only 10 commodities have been checked in accordance with the notification of 30 April 2007. Exceedances of EC MRLs were found in 493 of the samples, and most frequently in lychee, durian, longan, mango and chilli. In 6,214 cases, the results complied with EC MRLs, and export certificates were issued.

The mission team noted that the sampling report for the laboratory sample does not clearly identify the sampled lot (e.g. through information about weight of the lot, lot number or producer). The export certificate is issued by TOSS after the laboratory analysis. It lists 30 pesticides sought during the analysis. This list differs from the 53 pesticides required for analysis by the Notification of the Department of Foreign Trade. The certificates are not dated, but specify an estimated date of shipment. The mission team noted a case where export occurred after the estimated date of shipment. The certificate specifies an estimated weight of the lot, but, like in the sampling report, no clear identification of the lot is provided.

The Customs have recently introduced an electronic system for documentary export controls, and do not check the presence or accuracy of export certificates. However, on 12 March 2008, during the mission, the DOA adopted a Notification which will require the Phytosanitary Office to check the export certificates for the 10 commodities before phytosanitary certificates are issued.

5.2.3.2 Registration of exporters and GMP certification

The DOA informed the mission team that 115 exporters have been registered for exports to the EU by the TOSS of the DOA. A total of 400 pack-houses have been certified for GMP by the DOA after inspections of the Post-Harvest and Processing Research and Development Office (PPRDO), and 53 of the 400 certified pack-houses are operating for exports to the EU.

The mission team visited two pack-houses. One of the pack-houses was first inspected by the PPRDO in November 2003 and certified in January 2004, and the other pack-house was first inspected in September 2003, re-inspected in August 2004, and certified in January 2005. The certificates are only valid for one year, and both pack-houses were annually re-inspected and re-certified. In some cases inspections took place shortly after re-certification. At the time of the mission, the GMP certificates of both pack-houses had recently expired. The DOA explained to the mission team that the delay of re-certification was caused by recent staff changes in the DOA, and memos had been sent to the pack-houses advising that certificates would be renewed soon. Both pack-houses had implemented systems for record-keeping and traceability and stated that only produce from GAP certified farmers would be processed for exports to the EU. However, due to incomplete internal traceability in one of the pack-houses, which had GAP certified and non-certified suppliers, the PPRDO inspectors could not verify that only produce from GAP certified farmers is exported to the EU.

At the point of export, the phytosanitary officers systematically check for all exports of fruit and vegetables to the EU that exporters are registered and pack-houses are GMP certified. The checks are documented on the applications for phytosanitary certificates. GAP certification is not checked at point of export. The EU only requires phytosanitary certificates for 5 of the 32 commodities covered by the Notification of 26 September and its addendum of 28 December 2007 (holy basil, sweet basil, celery, mango, and pomelo). Although in theory a consignment of another commodity, such as yard-long beans, could be exported to the EU without certification, there was some evidence that exporters apply for phytosanitary certification for all commodities exported to the EU.

5.2.4 Follow-up of notifications in the EU Rapid Alert System for Food and Feed

Since the last mission, a system was put in place for the follow-up of EU RASFF notifications. The TOSS of the DOA was initially designated as contact point for EU RASFF notifications. A revised and comprehensive RASFF manual was approved on 12 February 2008, which identifies the PPRDO of the DOA as the new contact point. The DOA has systematically received all EU RASFF notifications for 2007. Following these notifications, PPRDO sent warning letters to the exporters involved requesting further information. The letters were copied to concerned offices of the DOA. The follow-up to the most recent RASFF notification of 14 December 2007 was demonstrated to the mission team. A warning letter was sent to the exporter on 8 January 2008, and a reply was received on 14 January 2008. On 15 January 2008, a GMP inspection of the pack-house involved was carried out by the PPRDO. The PPRDO confirmed that the produce of this exported lot originated from a non-GAP certified supplier, and the company temporarily stopped exporting yard-long beans after the notification. The exporter

confirmed in his written reply that in future he would source his produce for EU exports only from GAP certified plots. A report of the follow-up measures relating to this notification was sent to the European Commission on 26 March 2008.

5.2.5 Laboratories for pesticide residue analysis

5.2.5.1 Organisation

The laboratory of APSRDO, a private laboratory, and 3 of the 8 OARD laboratories are currently involved in pesticide residue analysis for EU export certification. Two of these laboratories have achieved accreditation by the national accreditation body, the Bureau of Laboratory Quality Standards in the Department of Medical Sciences (BLQS-DMSc).

Three laboratories were in the process of accreditation. The mission team noted that the technical annexes of the accreditation certificates, which specify the scope of the accreditation, did not contain a clear reference to the accreditation, such as a unique number and expiry date.

The remaining five OARD laboratories analyse for pesticide residues within the GAP certification process. The mission team visited the APSRDO and the private laboratory which analyse for export certification, and the OARD 5 laboratory, which provides analyses for GAP certification.

5.2.5.2 Resources and training

The private laboratory has good facilities and is equipped with 11 GC with ECD and FPD detectors, 6 GC-MS, 4 HPLC, and 4 LC-MS. The LC-MS is not used for analyses for export certification. The laboratory has 11 staff (2 masters, 8 bachelors and 1 undergraduate), who perform pesticide residue analysis. The staff has received intensive and regular training.

The APSRDO has good facilities and is equipped with 7 GC with dual ECD/FPD detectors, 3 GC-MS, and 2 HPLC. A total of 55 staff (21 scientists, 22 technicians and 12 assistants) perform pesticide residue analysis in six separate laboratories. The staff received satisfactory training for pesticides residues analysis.

The OARD 5 laboratory also has good facilities, and is equipped with three GC ECD/FPD, one GC-MS and two HPLC. The GC-MS and a further two GC are currently not used for pesticide residue analysis. The staff, 5 scientists and 1 technician, has received some training.

5.2.5.3 Analytical spectrum and methods

All laboratories use the same modified multi-residue method (Steinwandter H. 1985, Fresenius Z Anal Chem 322:752).

In the private laboratory, 8613 samples were analysed for pesticide residue export certification in 2007, and 4935 of these were analysed for exports to the EU. Some 10.5% of the EU samples exceeded EC MRLs. The laboratory currently analyses the 10 commodities, for which export certification is required, for 33 pesticides. The samples arrive at the laboratory within one day after sampling and are analysed within 24 hours.

The APSRDSO analysed 2653 samples for pesticide residue export certification in 2007, of which 1319 were analysed for exports to the EU. Some 3.7% of samples exceeded EC MRLs. The laboratory screens the 10 commodities, for which export certification is required, for 30 pesticides, and provides the results within 24 hours. The laboratory stated that in order to comply with the requirements of the accreditation body, all samples are re-analysed for the 11 organophosphorous pesticides covered by the accreditation. Re-analyses are performed after export certificates are issued.

The OARD 5 laboratory analysed 1400 samples for pesticide residues in 2007. The average time-lapse between sampling and reporting of results is 20 days. The laboratory analyses for 20 organophosphate and 2 organochlorine pesticides, 6 pyrethroides, and 10 carbamates.

5.2.5.4 Quality assurance systems

The private laboratory is accredited by BLQS-DMSc since October 2004 for analysis of organophosphorous and organochlorine pesticides, pyrethroids, and carbamates in vegetables (high water and chlorophyll content). The methods are validated for 44 pesticides and metabolites. The quality control system includes matrix-matched calibration, routine recovery checks, control of standards, duplicate analysis in each batch, and clear documentation and records. The results of proficiency tests with 12 pesticides were generally good.

The APRSDO is accredited by BLQS-DMSc since October 2006 for the detection of 11 organophosphates in mango. The methods are validated for 28 pesticides and metabolites. The quality control system includes matrix-matched calibration and routine recovery checks for the 11 pesticides covered by the accreditation, duplicate analysis in 10 % of batches, and annual renewal of working solutions of standards. The results of a recent proficiency test were variable, but no examination of the possible reasons for unacceptable results was documented. The technical annex to the accreditation certificate and chromatograms of analyses for export certification could not be produced during the laboratory visit. However, after the visit copies of the technical annex and chromatograms for two of the three requested samples were given to the mission team. Data for recovery checks and calibration were available only for the re-analyses, but not for the initial screening for export certification. The cleaning of glassware was not adequate.

The OARD 5 laboratory is in an early stage of the accreditation process, and has started to draft a quality manual. The implemented quality controls includes calibration in solvent, duplicate analysis in 10 % of the samples, and annual replacement of standard

working solutions. Validation has not started, no recoveries are checked, and the laboratory has not participated in proficiency tests.

5.2.6 Additional private measures

In addition to official controls, pack-houses and exporters developed manuals and lists of PPPs to be used by contracted farmers for compliance with MRLs in the respective countries of destination of exported produce. These lists were stated to be based on information from customers in the EU, and on information from PPP retailers.

One of the two visited pack-houses stated that all of their contracted farmers are certified to international retail standards, and processes produce mainly for supermarket chains. The other visited pack-house processes produce mainly to smaller speciality shops. It operates an accredited laboratory for in-house pesticide residue controls.

6 CONCLUSIONS

6.1 CONTROL SYSTEM FOR THE PLACING ON THE MARKET AND USE OF PLANT PROTECTION PRODUCTS

1. Since the last mission, substantial training was provided to all stakeholders. Documented procedures for planning, performing and reporting of controls have been improved. The competent authorities have a sufficient number of trained staff to perform the controls.
2. The observed inspection of a retailer of PPPs followed documented procedures. However, the inspectors did not bring an updated register of authorised PPPs to verify the labels and authorisation status of PPPs on stock, and the duration of routine inspections is short. Regular formulation analyses of PPP are carried out, and the level of infringements of samples taken at market level is high.
3. The mandatory GAP certification of farmers for exports of 32 commodities to the EU is expected to increase the general awareness of producers for the safe and legal use of PPPs. However, no GAP manual is available for many of the 32 commodities, and existing GAP manuals were not developed for compliance with EC MRLs, i.e. compliance with GAP in Thailand may lead to MRL breaches in the EU, if the produce is exported.
4. In compliance with Article 10 of Regulation (EC) No. 852/2004 in connection with Article 4.1 and Annex I, Part A.III of the same Regulation, the producers met by the mission team kept records of uses of PPPs. However, during the

- demonstrated GAP inspection the inspector did not check whether the recorded uses were authorised in Thailand.
5. The draft GAP manual for yard-long beans contained recommendations for some unauthorised uses of PPP, and the recorded non-authorised use of another PPP in asparagus are signals for non-authorised applications of PPPs in Thailand.

6.2 CONTROL SYSTEM FOR PESTICIDE RESIDUES IN FOODSTUFFS OF PLANT ORIGIN

1. The system for mandatory export certification of consignments intended for export to the EU is not fully effective because it includes only 10 commodities, but not the commodities recently notified in the EU RASFF, in particular yard-long beans, and it is limited to only 30 pesticides. The lot is not sufficiently identified in the sampling report and in the export certificate.
2. Export certificates are currently not checked at point of export, but new legal provisions are expected to rectify this short-coming.
3. The mandatory GMP certification of pack-houses for exports of 32 commodities to the EU allows the competent authority to improve controls over these establishments.
4. The competent authorities made the registration of exporters to the EU mandatory, as required by Article 10 of Regulation (EC) No. 852/2004 in connection with Article 6 of the same Regulation.
5. Exporter registration and GMP certification of pack-houses is effectively checked at point of export. GAP certification of producers is not checked at point of export, but can generally be checked at pack-houses. Due to incomplete internal traceability in one of the visited pack-houses, which had both GAP certified and non-certified suppliers, the inspectors could not verify that only produce from GAP certified farmers is exported to the EU.
6. Since the last mission, an effective system was put in place for the follow-up of EU RASFF notifications.
7. Substantial laboratory resources are available, which would allow for the analysis of a high number of samples with a broad analytical screen and comprehensive quality control procedures, but resources are not used effectively. The accreditation process of all laboratories has started, but only two of the five laboratories involved in pesticide residue analysis for EU export certification have achieved accreditation. The traceability of the quality control system at APRSDO was not satisfactory. The analytical scope is small, and does not meet the national legal requirement for export certification.
8. Additional private controls of the food business operators provide additional assurances for compliance with EC MRLs.

6.3 OVERALL CONCLUSION

A system is in place for certification of compliance with EC MRLs of consignments intended for export to the EU. However, it is not fully effective, in particular as it does not include the commodities recently notified in the EU RASFF. Significant progress was made with the development of additional controls over producers, pack-houses and exporters, but these are not linked to compliance with EC MRLs. Overall, the controls do not provide sufficient guarantees that food of plant origin exported from Thailand will comply with EC legislation.

7 CLOSING MEETING

A closing meeting was held on 13 March 2008 with the central competent authority, the DOA. At this meeting, the main findings and conclusions of the mission were presented by the inspection team. The representatives of the competent authority offered some initial comments and provisionally accepted the preliminary findings.

8 RECOMMENDATIONS

In relation to pesticide residues in food of plant origin intended for export to the European Union, Thailand should improve the controls, in order to guarantee that the produce complies with, or is equivalent to, European Union standards in accordance with Article 11 of Regulation (EC) No 178/2002. In particular,

No.	Recommendation
1	Thailand should develop GAP manuals for all commodities, which require GAP certification of the producers for export to the EU. The GAP manuals should take into consideration EC pesticide MRLs and comply with national legislation.
2	Thailand should consider extending the number of commodities requiring export certification to include those commodities recently notified in the EU RASFF system.
3	Thailand should continue the accreditation process to ISO 17025 of official control laboratories to ensure the equivalence with Article 18 of Commission Regulation (EC) No 2076/2005 and to ensure that these laboratories provide reliable analytical results. Equivalence to Art 12 (2) of Regulation (EC) No 882/2004 should be demonstrated by 1 January 2010.
4	Thailand should consider broadening the scope of analytes sought in the pesticide residue laboratories to improve the effectiveness of the controls for pesticide residues.

An action plan in response to the recommendations should be forwarded to the Commission within 2 months of dispatch of the report. This action plan should clearly set out the manner and deadline by which the competent authorities will address the recommendations.

The competent authority's response to the recommendations can be found at:
http://ec.europa.eu/food/fvo/ap/ap_thailand_7840_2008.pdf

ANNEX 1 - LEGAL REFERENCES

Legal Reference	Official Journal	Title
Directive 76/895/EEC	OJ L 340, 9.12.1976, p. 26–31	Council Directive 76/895/EEC of 23 November 1976 relating to the fixing of maximum levels for pesticide residues in and on fruit and vegetables
Directive 86/362/EEC	OJ L 221, 7.8.1986, p. 37–42	Council Directive 86/362/EEC of 24 July 1986 on the fixing of maximum levels for pesticide residues in and on cereals
Directive 90/642/EEC	OJ L 350, 14.12.1990, p. 71–79	Council Directive 90/642/EEC of 27 November 1990 on the fixing of maximum levels for pesticide residues in and on certain products of plant origin, including fruit and vegetables
Directive 91/414/EEC	OJ L 230, 19.8.1991, p. 1–32	Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market
Regulation (EC) No 178/2002	OJ L 31, 1.2.2002, p. 1–24	Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety
Regulation (EC) No 852/2004	OJ L 139, 30.4.2004, p. 1, Corrected and re-published in OJ L 226, 25.6.2004, p. 3	Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs
Regulation (EC) No 882/2004	OJ L 165, 30.4.2004, p. 1, Corrected and re-published in OJ L 191, 28.5.2004, p. 1	Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules
Regulation (EC) No 396/2005	OJ L 70, 16.3.2005, p. 1–16	Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and

		amending Council Directive 91/414/EEC
Regulation (EC) No 2076/2005	OJ L 338, 22.12.2005, p. 83– 88	Commission Regulation (EC) No 2076/2005 of 5 December 2005 laying down transitional arrangements for the implementation of Regulations (EC) No 853/2004, (EC) No 854/2004 and (EC) No 882/2004 of the European Parliament and of the Council and amending Regulations (EC) No 853/2004 and (EC) No 854/2004