



## **NINTH JOINT CIPAC/FAO/WHO OPEN MEETING**

**(56<sup>th</sup> CIPAC Meeting and 11<sup>th</sup> JMPS Meeting)**

**Dublin Castle, Ireland**

**11 June 2012**

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## 1. Opening and welcome

Dr Jim Garvey of the Pesticide Control Laboratory, Irish Department of Agriculture, Food and the Marine, facilitated the opening ceremony and welcomed participants to the 9<sup>th</sup> Joint CIPAC, FAO and WHO Open Meeting. He introduced Mr Tom Moran, Secretary General, Irish Department of Agriculture, Food and the Marine. Ms Yong Zhen Yang, representing the Food and Agriculture Organization of the United Nations (FAO); Dr Ralf Hänel, Chairman, Collaborative International Pesticide Analytical Council (CIPAC), and Dr Morteza Zaim, representing the World Health Organization (WHO).

Mr Moran thanked Dr Dan O'Sullivan of the Irish Department of Agriculture, Food and the Marine, and extended special thanks to Dr Garvey and his team from the Pesticide Control Laboratory for all of their efforts in organising the meeting. Mr Moran talked about the key factors that currently dominate world agriculture and those that are expected to dominate world agriculture into the foreseeable future – food security and food safety. He focused on the increasing world population, a rise in agricultural prices, climate change and energy and water shortages. The world population is expected to reach nine billion by the year 2020, posing several challenges in the future. He emphasised a key role played by science behind the agriculture and in particular the pesticides.

Mr Moran emphasised the importance of agriculture to recovery of Irish economy. Agriculture has contributed significantly to recovering Irish economy. Irish agricultural exports are going from strength to strength with current agricultural exports being worth ca. €9 billion. Recent Irish agricultural exports have increased by ca. 20% compared with the year 2009. The agri-food sector is one of Ireland's most important indigenous manufacturing sectors and provides ca. 8% of the national employment.

Mr Moran informed the meeting that the vision for Irish agriculture is based on three key words: smart, green, growth. Smart relates to doing things better with regards to agriculture – smarter farming, working collaboratively, innovation in operation, knowing the consumer, achieving competitiveness, developing leadership and entrepreneurship. Green refers to doing it in a more sustainable way – green initiatives and promoting sustainability. Growth refers to the vision for expansion of Irish agriculture. The combination of smart and green will lead to the expansion of Irish agriculture. In 2011, of the total agricultural exports from Ireland beef accounted for 20% while the dairy products and ingredients accounted for 30%. The contribution of dairy was likely to increase in the near future with the milk quotas ending in 2015.

Irish agriculture is currently focusing on sustainable intensification. Ireland is measuring the sustainability of beef production. There is a very good beef quality assurance scheme in Ireland. Ireland is carbon foot printing 32,000 of the beef producers in Ireland. It is not sufficient to say that Ireland has high quality and sustainable food; one must actually demonstrate it. The claims of a high quality and sustainable food can be backed up with data.

Irish agriculture realises the importance of quality and safety. Mr Moran emphasised the importance of exports to China. The Chinese market is currently demanding a high quality product rich in protein. There is also a growing emphasis from China in relation to food safety. The consumer of today wants measured standards and food safety. The way forward for Irish agriculture is to have measurable and reliable standards when it comes to food safety. The public needs to know that their food is safe.

The Common Agricultural Policy (CAP) is undergoing major reform in Europe. Ireland will take over European Union Presidency in January 2013 and therefore will act as the driver of CAP reform during that period. There is now a substantial movement towards 'green' CAP and to make agriculture sustainable. Mr Moran ended his opening address by emphasising the important role and correct use of plant protection products in agriculture, but equally emphasised the importance of their use being controlled and standardised.

Ms Yang welcomed guests and delegates to the JMPS Open Meeting on behalf of FAO. She thanked the Irish Government for hosting the 2012 meeting and extended her thanks to WHO and CIPAC for their co-operation. She also thanked Mr Moran for his opening address and was encouraged to hear his speech highlighting the problems facing the world regarding food security and food safety. She was pleased that Ireland accords both food security and quality control of pesticides a high priority.

Ms Yang informed the meeting that pesticide quality was an extremely important issue concerning farmers and consumers. The worldwide use of pesticides has continued to increase with the increase of food demand due to a growing world population. Global pesticide sales were over US\$ 47 billion in 2011, showing 14% increase over 2010.

Pesticide quality control is of growing importance due to enhancement of awareness of food safety and increase of demand for safe and nutritious food. In order to feed a growing population, a new paradigm of agriculture is necessary that is Sustainable Crop Production.

Ms Yang introduced that FAO recently created the vision of "Save and Grow", which is very similar to the Irish vision of "smart, green, and growth". "Save and Grow" farming system offer proven productivity, and economic and environmental benefits. Pesticide management is extremely important for success of "Save and Grow" campaign. The establishment of international guidelines and standard is still a high priority for FAO under its new strategies. In collaboration with WHO, CIPAC, countries, Industry and other organisations, FAO will try its best to provide the support necessary for the development of international standards for pesticide quality, to fulfil the goal of improving public health and ensuring consumer protection, but also facilitating trade and agricultural development. Ms Yang concluded her speech by thanking Dr Garvey and his team for organising the event.

Dr Ralf Hänel welcomed guests and delegates to the Open Meeting on behalf of CIPAC. He noted that it was the first time that the joint meeting had been held in Ireland. He thanked the Irish Government for hosting this year's meeting and

extended his thanks to WHO and FAO for their co-operation. He also thanked Dr Garvey and his colleagues for making good preparations for the meeting. Dr Hänel gave a brief overview of his knowledge of Irish agriculture and Irish agricultural history in general (Irish potato famine etc) but confessed that after listening to Mr Moran's opening address he realised that there was much more to Irish agriculture than he had originally realised. Dr Hänel noted that it was an exciting time for Irish agriculture.

Dr Morteza Zaim, Coordinator, WHO Department of Control of Neglected Tropical Diseases welcomed, on behalf of WHO, the participants to the 11<sup>th</sup> JMPS Open Meeting and the 9<sup>th</sup> joint meeting with CIPAC. He thanked the Department of Agriculture, Fisheries and the Marine of Ireland for agreeing to host and facilitate the meeting. He also thanked Dr Garvey for his preparations and hospitality.

Dr Zaim noted that WHO has been at the forefront of improving public health worldwide since its founding in 1948. But the challenges facing public health have changed in profound ways and with exceptional speed. While WHO continues to play a leading role in global health, it needs to evolve to keep pace with these changes as well as to emerging threats to public health. Like many other institutions, it also is faced with the global economic uncertainty and is currently undergoing a reform in order to better align its objectives, priorities, resources and role in global health governance.

The work of JMPS in developing norms and standards for quality control of pesticides and in minimizing risks to human, animal and environmental health is very important. The JMPS panel, and its key collaborators and partners, including industry, should also consider and propose ways to improve the efficiency and sustainability of this important FAO and WHO technical support to Member States and other stakeholders. They should also advise how we can increase global use, as well as compliance by industry, of the quality standards set by the two organizations. Such advice is highly desired since the extent of substandard pesticides on the market is of grave concern.

The WHO Pesticide Evaluation Scheme (WHOPES) is WHO's focal point for matters relating to the management of pesticides in public health. The scheme has grown enormously since its establishment in 1960. In recent years, through a close collaboration with FAO, WHOPES has significantly intensified promotion of sound management of pesticides and their judicious use in public health. It has supported Member States in most WHO regions to develop policies and frameworks for action for managing these chemicals. The International Code of Conduct on the Distribution and Use of Pesticides is being updated as a FAO and WHO joint publication to better serve the needs of the health sector. Through the development of guidelines on legislation, registration and other aspects of pesticide management with FAO, WHOPES aims to significantly improve the management of pesticides in the health sector in coming years. The capacity of managing public health pesticides is generally inadequate in developing countries where a majority of the insecticides are used for vector-borne disease control.

Dr Zaim thanked participants and the organizations represented in this meeting for their valuable support to WHO's work relating to quality control of pesticides in

particular and to pesticide management in general. This he said included valuable support provided by the national pesticide registration authorities in the comparison of confidential data submitted to JMPS with those used for registration of pesticides in their country. This support is greatly appreciated by WHO.

Dr Zaim also noted that WHO places high value on the open forum for exchanging information on new developments and emerging information for use in its policy, guidance and priority settings. He wished the participants a productive meeting and a pleasant stay in Dublin.

## **2. Arrangements for chairmanship and appointment of rapporteurs**

Dr Zaim noted that the Chairmanship of the Open Meetings rotates among the three organizations (CIPAC, FAO and WHO). This year it was the turn of WHO to facilitate the meeting, with himself as the Chair.

Dr Hänel informed the meeting of the sad passing away of Mrs Ada Hourdakis who had been a CIPAC Member representing Greece for over 30 years. Dr Hänel paid tribute to her contributions to CIPAC and to the aims of FAO and WHO through her work for the JMPS. A minute of silence was observed as a mark of respect.

Two rapporteurs, Ms Sonia Tessier (CIPAC) and Dr Finbar Brown (WHO), were proposed and duly appointed. The Chair thanked them for their support.

## **3. Adoption of the agenda**

The agenda of the meeting was accepted as such as there were no suggestions.

## **4. Summary record of the previous meeting**

The summary record of the previous CIPAC, FAO and WHO Open Meeting held at the Beijing Landmark Towers Hotel, China on 13<sup>th</sup> June 2011 was published in August 2011 and is available on the FAO and WHO web sites. It was accepted as such.

## **5. Summary of actions taken after the 56<sup>th</sup> CIPAC and 10<sup>th</sup> JMPS meetings**

The summary of the actions by CIPAC, FAO and WHO since the meetings in 2011 is described below.

### **5.1 CIPAC**

Dr Ralf Hänel, Chairman of CIPAC, provided the meeting with an update of CIPAC actions taken since the last Open Meeting in 2011:

- CIPAC Handbook N is in press. An updated CD-ROM will be released in due course. The methods published in Handbook N will be automatically reviewed in five years as agreed at the CIPAC meeting in 2011. These will be the first methods to be reviewed under the five year review scheme.
- CIPAC Handbooks A1–D have been published on a CD-ROM as PDF files as these are now no longer available in hard print.
- EUROSTAT and the European data base on plant protection products that is currently being developed will use CIPAC numbers as a distinct numbering system.
- A new CIPAC brochure has been prepared, providing information regarding the work and history of CIPAC. A copy of the leaflet was provided to all participants of the Open Meeting and it was informed that more copies are available from CIPAC on request.

## **5.2 FAO**

Ms Yong- Zhen Yang, Plant Production and Protection Division, FAO informed the meeting of the activities, meetings and events organized by FAO since the JMPS meeting held in China in 2011. These activities and publications have led to improvements in pesticide management, in particular in the developing countries. These meetings, workshops, documents and publications with additional information are listed as follows:

### ***Meetings and workshops***

- The SEC sub-regional workshop on FAO specifications and equivalence, July 2011, Menemen, Turkey.
- The SEC sub-regional workshop on pesticide registration, November 2011, Issyk-Kul, Kyrgyzstan.
- A Central-American sub-regional training in pesticide quality control and FAO specifications, January 2012, Panama.
- Training on equivalence in the framework of a joint FAO-Netherlands Project, April 2012, Addis Ababa, Ethiopia.
- Training on equivalence has been scheduled in Chile and training on pesticide quality control based on FAO specifications is planned in Thailand.
- Regional training workshops on setting Maximum Residue Limits (MRLs) and residue risk assessment, and risk assessment of pesticide residues in Latin America and the Caribbean (Brazil in May 2011), Africa (Ghana in June 2011) and Asia (Thailand in August 2011).

- FAO/WHO Joint Meeting on pesticide residues (JMPR), September 2011, Geneva, Switzerland.
- FAO/WHO Joint Meeting on Pesticide Management, October 2011, Rome, Italy.
- 44<sup>th</sup> CCPR, April 2012, Shanghai, China approved about 300 Codex MRLs.
- FAO participated in the meetings of Inter-Organization Programme for the Sound Management of Chemicals and Strategic Approach to International Chemicals Management (7-11 May 2012) in Geneva, and chaired SAICM-QSP Trust Fund Implementation Committee where four project proposals were approved.
- FAO held 23rd Session of the Committee on Agriculture (21-25 May 2012, Rome where progress made in updating of the International Code of Conduct was discussed.

### ***Documents and publications***

The following documents were published on the FAO website.

- JMPR reports and evaluations (residue part) of 2011. JMPR recommended about 400 MRLs in 2011 and it is expected that a majority of these will be adopted as CODEX MRLs in 2012.
- The revised Manual on development and use of FAO and WHO specifications for pesticide is available on the FAO web site. The manual and the training manual have been translated into Chinese and Russian, which will be published in 2012.
- FAO training manual on evaluation of pesticide residue data for the estimation of MRLs in food and feed (2012)

### ***Survey of the Use of FAO Technical Guidelines and Standards Related to Pesticide Management***

- The web-use analysis by FAO showed that the most downloaded guidelines were the FAO/WHO specifications for pesticides, guidelines related to application equipment and guidelines advising on the management of obsolete pesticides.
- To further assess the use of the above mentioned tools, a questionnaire was developed by FAO and completed by the national pesticide regulators and registrars. Most of the respondents were from Africa and Latin America. The results showed a low awareness and use of guidelines by these target groups.

- The guidelines reported to be most useful (out of 66 respondents) were: pesticide labelling, legislation, registration, specifications, the manual on specifications and efficacy testing.
- Various reasons were given for the limited use of the guidelines, such as lack of awareness of their existence, their non-availability in local languages, lack of or slow internet access, lack of human resources and limited time to read guidelines.
- The main recommendations of the survey were that:
  - more effort is needed to enhance awareness on guidelines (the report provides several concrete suggestions);
  - there is an urgent need to translate the guidelines into other languages;
  - there is a need for additional tools to supplement guidelines (e.g. case studies, reference lists, tool kits, etc.)
  - better use should be made of ongoing field projects to raise awareness about use of guidelines and to make them available.

### ***Technical Projects***

Over the next two years, a project funded by the Global Environmental Facility (US\$ 20 million) and another project by EU-MEA funding (US\$ 8 million) on pesticide management including quality control will be implemented in the CILSS states (9 countries) and Morocco, Benin and Cameroon.

### **5.3 WHO**

Dr Zaim informed the meeting that the JMPS has ensured a better co-ordination between WHO and FAO in relation to their activities. The FAO has invested significantly in translating some of the key guidelines in other languages. Both organisations have started to publish the amendments to the FAO/WHO manual side by side. The amendments include all the JMPS-agreed changes to the current version of the manual. The amendments are published on the website and then after about five years they would be incorporated into the next revision of the manual. The recent survey conducted by FAO highlights the importance of the collaboration between WHO, FAO and CIPAC in development of international pesticide quality. WHO also did a similar survey in 2010 in 142 countries, where it was reported that 90% countries had formally acknowledged that they used WHO specifications for pesticides.

Dr Rajpal Yadav, Scientist, Department of Control of Neglected Tropical Diseases, WHO informed the meeting of the major activities carried out by the WHO Pesticide Evaluation Scheme (WHOPES) within the framework of sound management of public health pesticides, since the previous JMPS meeting:



## **Guidelines**

- Guidelines for procuring public health pesticides<sup>1</sup> – The objectives of the guidelines are to provide guidance on the procurement of appropriate and good-quality public health pesticide products. The guidelines promote fairness, transparency, integrity, accountability and quality assurance in procurement of pesticides. The aim of bringing out this document is to assist Member States and other stakeholders in preparing their own standard operating procedures and to harmonize them. The guidelines are particularly important for developing countries.
- Generic risk assessment model for insecticide treated nets (First revision)<sup>1</sup> – The document provides a generic model that can be used for assessing risk of insecticide exposure of individuals sleeping under insecticide treated nets, including long-lasting insecticidal nets, as well as during washing of nets and conventional treatment of nets with insecticide.
- Guidelines for quality control of pesticides – The document, jointly published with FAO, provides guidance to the responsible authorities, the pesticide industry, the retailers, users and civil society on legislative, administrative, organizational and infrastructure requirements and procedures for quality control of pesticides. The guidelines are available in English, French and Spanish.
- Guidelines for testing the efficacy of insecticide products used in aircraft<sup>1</sup> – The purpose of these guidelines is to provide specific and standardized procedures and criteria for testing the efficacy of pesticide products designed for disinsection in aircraft and to assist countries in adopting health control measures under the International Health Regulations. The guidelines are intended to complement other specific WHO technical guidance documents to prevent the spread of disease vectors through air travel.

All the four guidelines are available on the WHOPES website.

## **Country support**

WHOPES supported and co-organized three regional consultations in the WHO American (Antigua, 23-26 August 2011), the Western Pacific (Kuala Lumpur, 12-14 September 2011) and the Eastern Mediterranean Regions (Muscat, 5-7 December 2011). The objectives of the consultations were to review the outcome of the survey on public health pesticide registration and management practices by WHO Member States, to identify major challenges and obstacles in the management of public health pesticides in each Region and to develop a regional framework for action for the sound management of these chemicals in the respective region.

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<sup>1</sup> Available at: <http://www.who.int/whopes/resources/en/>.

Development of the WHO Eastern Mediterranean regional framework for action on the sound management of public health pesticides (2012–2016) was a follow up action on implementation of the WHO Eastern Mediterranean Regional Committee Resolution EM/RC58/R.10(D), which urged Member States to improve management of public health pesticides in the face of the increasing burden of vector-borne diseases.

### ***Evidence-base for policy and product development***

Dr Yadav informed the meeting of the priority that has been given since the previous JMPS meeting to promote WHO policies and strategies for the sound management of public health pesticides. This includes publication of following scientific papers: (1) Status of pesticide management in the practice of vector control: a global survey in countries at risk of malaria or other major vector-borne diseases, *Malaria Journal*, 14;10:125, 2011; (2) Status of legislation and regulatory control of public health pesticides in countries endemic with or at risk of major vector-borne diseases, *Environmental Health Perspectives*, 119:1517-1522, 2011; (3) Global trends in the use of insecticides for vector-borne disease control, *Environmental Health Perspective*, 120(4), 2012: doi:10.1289/ehp.1104340; and (4) Implementation of integrated vector management for disease vector control in the Eastern Mediterranean: where are we and where are we going? *Eastern Mediterranean Health Journal*, 17(5):453-459, 2012.

Dr Yadav also informed the meeting of the WHOPES joint project with the WHO Global Malaria Programme and the Innovative Vector Control Consortium, funded by the Bill & Melinda Gates Foundation, which was assisted by the Boston Consulting Group to map the innovation process in vector control, identify the challenges in this process and to propose action for facilitating introduction of the innovative tools to the market. The limited national capacity and policy for quality control of public health pesticide products being procured on one hand, and high extent of sub-standard pesticide products on the market on the other were among the key challenges identified in this process. Creation of a WHO Vector Control Advisory Group on new tools has been proposed.

The 8<sup>th</sup> meeting of the Global Collaboration for Development of Pesticides for Public Health was held at the WHO headquarters in Geneva, 20–21 February 2012. The theme of the meeting was surveillance and management of dengue vectors. The objectives of the meeting were to review the evidence on effective dengue vector control interventions, to gather more evidence on innovative technologies in the pipeline, and to recognize the role of vector control in an integrated programme before and after the introduction of a dengue vaccine when it becomes available in near future. In the total reported amount of insecticides used globally for vector-borne disease control, the proportion used for dengue vector control is only next highest after malaria.

The 5<sup>th</sup> FAO/WHO Joint Meeting on Pesticide Management was held in FAO headquarters in Rome, 11-14 October 2011. The meeting reviewed and endorsed the updated version of the International code of conduct on distribution and use of pesticides. The document is to be named as the *International code of conduct on*

*management of pesticides* and will be jointly published by FAO, UNEP and WHO, following the endorsement of the respective governing bodies. The meeting also made recommendations for finalization of FAO/WHO: (i) Guidelines on data requirements for registration of pesticides; (ii) Guidelines on pesticide legislation; and (iii) Guidelines on good labelling practices for pesticides.

### **WHOPES product assessment**

WHOPES pesticide product assessment looks at the safety and efficacy of new pesticide products for use in public health. Summary of the work carried out since the last Open Meeting in 2011 is given below:

- WHO has finalized efficacy testing and evaluation of four pesticide products for use in public health – two long-lasting insecticidal mosquito nets, a larvicide and a product for space spraying against mosquitoes.
- Currently, there are 15 pesticide products under WHOPES testing and evaluation scheme. Updated list is available on the WHO homepage on the Internet at <http://www.who.int/whopes/en/>.

Concluding WHO's work, Dr Zaim stated that the 5<sup>th</sup> edition of *Global Insecticide Use for Vector-Borne Disease Control* has just been published. It is the only global database that provides data on usage of pesticides in public health. The database provides information by the WHO Region and by type of application and serves as the only reference that is useful in product development and in pesticide management. Dr Zaim informed the meeting that dengue is the second most common vector-borne disease after malaria, and like malaria there is an ongoing struggle against insecticide resistance of vectors and that is why the development of new pesticides is now so important.

## **6. Technical liaison with other organizations**

Dr Zaim mentioned that CIPAC, FAO and WHO work with many regional and international organisations. He then invited some of these organisations to present reports on their work on the management and quality control of pesticides. Brief reports of six organizations, who made presentations, is summarised below.

### **6.1 AgroCare**

Dr Roman Macaya, representing AgroCare, informed the meeting that AgroCare is a global organization representing generic pesticide manufacturers consisting of 865 different companies and four regional associations: ALINA (Latin American Association of the National Agrochemical Industry), ECCA (European Crop Care Association), PMFAI (Pesticides Manufacturers and Formulators Association of India), and CCPIA (China Crop Protection Industry Association). All AgroCare Member Associations have expressed their support for the International Code of Conduct on the Distribution and Use of Pesticides. AgroCare supports science-

based regulations and a balance in intellectual property rights that ensure fair market access of competitive post-patent products.

Dr Macaya referred to AgroCare's number of global and regional initiatives, including the following:

- participation in the annual meetings of JMPM, JMPS, CODEX as well as other regional initiatives.
- AgroCare formed its Pesticide Specifications Group (PSG) in June 2010 as a technical group to address issues relating to specifications.
- AgroCare's European Member Association (ECCA) will address the risks and costs of counterfeiting at their next Informal Post-Patent Conference in Amsterdam (November 2012).
- AgroCare participates in discussions on risk-based analysis of pesticides with regulators, academia, NGO's and intra-industry groups.
- AgroCare has assessed the functionality of all Latin American registration systems and determined the causes for system failures.
- AgroCare has held workshops on registrations by equivalence in Mexico, Guatemala, Paraguay, Costa Rica, Uruguay and Honduras.
- AgroCare has launched its first Latin American Collaborative Inter-Laboratory Proficiency Evaluation Programme.
- AgroCare's Latin American Country Associations and companies have launched or consolidated their empty container management programmes.
- Participated in a FAO Workshop on defining indicators for the implementation of the Code of Conduct in Central America (Panama, December 2011).
- Working with the Bureau of Indian Standards, where PMFAI has a seat, to formulate Indian standards for new pesticides and update those of older molecules.
- International Crop Science Conference and Exhibition 2011 (Moscow, Russia) (Jointly organized by PMFAI and CCPIA in June 2011).
- CCPIA created the paraquat Stewardship Alliance Working Group.
- Product-based groups formed for glyphosate, abamectin, imidacloprid, and pemetozine.
- CCPIA has implemented controls against counterfeit pesticide products and illegal producers.

- Organized a training course on Standardization of Agrochemical Compositions (Jinan, Shandong Province, China).
- Participated in 11<sup>th</sup> AgroChemEx 2011, October 2011, Shanghai, China.

### ***Questions/Comments***

Dr Zaim noted that AgroCare had assessed the functionality of regulatory assessment in Latin America and asked if this information was publically available as FAO/WHO would be interested to see this information in more detail, in particular the criteria used for that assessment. AgroCare agreed to send their assessment to FAO and WHO.

## **6.2 AOAC International**

Dr Adrian W. Burns, an AOAC/CIPAC Correspondent and a General Referee-CIPAC Studies, presented an update on AOAC International and the Official Methods Programme.

AOAC International is more than 125 years old. The AOAC is an independent, proactive, non-profit organization with global “brand recognition” for reaching stakeholder consensus regarding analytical method performance criteria. AOAC methods and validation reports are available world-wide, and AOAC is recognized for providing “science-based solutions” in a variety of disciplines to resolve analytical chemistry problems. There are over 3,000 members of AOAC from governments, academia and industry, and there are also 15 active AOAC sections worldwide.

On March 28, 2011, the AOAC International Board of Directors approved an alternative pathway to achieve an Official Method (Official First Action status) for methods selected and reviewed using the AOAC volunteer consensus standards development processes.

Dr Burns explained the rationale for the change and explained how the alternative AOAC pathway works. Further information regarding the alternative AOAC pathway can be found on the website of AOAC: [www.aoac.org](http://www.aoac.org).

Dr Burns informed the meeting that The AOAC Annual Meeting & Exposition will be held in Planet Hollywood, Las Vegas, Nevada, September 30 –October 3, 2012. Details of the meeting and exposition can be found at [www.aoac.org](http://www.aoac.org) .

### ***Questions/Comments***

None.

### **6.3 ASTM International**

Dr Ralf Hänel on behalf of Dr Alan Viets gave the presentation for ASTM International. ASTM has been working on development of humectancy test methods for several years. The amount of time that a herbicide or systemic pesticide spends on a leaf often has an impact on the efficacy. Recent work indicates that with the new test version reproducibility from one laboratory to another is improving.

Both ASTM and DAPF have been working on foaming and antifoaming tests. A DAPF-ASTM Round Robin has been suggested by ASTM for the ASTM foam test. Unfortunately, the DAPF method is already being finalised. Preliminary ASTM testing shows that when defoaming testing is done a short time after the foam has formed, the data is much more reproducible.

Spray drift remains an important topic for ASTM. Early November 2011, US Environmental Protection Agency (EPA) released the atomization and drift models developed by the Agro-Chemical Industry Spray Drift Task Force to applicators through the United States Department of Agriculture (USDA). ASTM is working with US Universities and EPA to help address this issue. Drift issues with ground applications have been improved by air entrainment nozzles and tank additives. Aerial applications remain as an important option for weed and insect control when rains are heavy in the spring. There will be many presentations on spray drift at the ASTM Symposium in Atlanta, GA, October 2012.

EPA's Inert Finder – to find it Google “Inertfinder” – is an excellent internet tool. A CAS number or the exact “EPA descriptor” can find a solid description of the status of the inert. Currently, updates are being made on a regular basis. There is also information on inerts that have data compensation as requirements to use the inert. There is easy to access information on the status of inerts. There is also in-depth information on topics like which CST group (Agro Industry Team) owns the data submitted to EPA.

In cooperation with EPA and USDA , ASTM members, Government laboratories and Universities participated in a 9 member Round Robin testing of fumigation barrier films. A laboratory method was validated.

The ASTM Fall Symposium on Pesticide Formulations and Applications will be held from October 22 to 24, 2012 in Atlanta.

#### ***Questions/Comments***

None.

### **6.4 CropLife International and European Crop Protection Association (ECPA) Specification Expert Group**

Dr John Dawson, representing CropLife International and ECPA, noted that in addition to main member companies, CropLife represents plant science industry in 91 countries and has ca. 1000 members (large and small companies) through their

affiliation with CropLife's regional and national organisations. CropLife members have the largest share of so-called generic or off-patent market. Thus, CropLife speaks for the entire spectrum of the industry, not just the research and development-based (multinational) industry.

Dr Dawson gave an overview of a life cycle stewardship approach to crop protection chemicals focusing on container management as a particular example. There are various container management schemes currently operating successfully in Europe. Container management systems are necessary in order to avoid unpalatable environmental situations.

Measurement is an important aspect of container management. It was noted that collection and recycling of plastic increased significantly from 2005 to 2010. Dr Dawson noted that there are three prerequisites to obtaining a non-hazardous classification – Select suitable packaging, Rinse (= decontaminate) packaging, and Check and collect packaging via dedicated system. It is very important that packing material is triple-rinsed, leading to a low level of active ingredient in the container after rinsing. The low level of active ingredient in the rinsed container will mean that the container will be more than likely treated as non-hazardous.

Dr Dawson noted that container management has been implemented in Ireland. The Irish container management system was provided as an example. The Irish Department of Agriculture, Food and the Marine published good practice guidelines in April 2012: “7 Steps, Good Practice Guide for Empty Pesticide Containers”. The publication emphasises the importance of triple rinse – “only triple rinsed Plant Protection Products containers managed in accordance with this Good Practice Guide can be classified as non-hazardous”. Steps 3 to 7 of the Irish publication are specific to Ireland.

Dr Dawson outlined the role and activities of the Specifications Expert Group (SEG). The mission of the SEG is to “provide a forum comprised of experts in matters of product quality and specifications for discussion and resolution of technical issues of importance to the Crop Protection Industry”

The Key activities of SEG include:

- Industry interface with FAO/WHO and Specifications process e.g. revision of the manual.
- Engage in and support the work of CIPAC.
- Provide comment and review on new and/or revised OECD methods on phys-chem properties.
- Support to ECPA Regulatory Teams: Formulation changes – management at zonal level.
- Provide CropLife International with Industry Technical Monographs.
- TM17, Guidelines for Specifying the Shelf-Life of Plant Protection Products.

- TM19, Minor Changes of Formulants contained in Formulations.

Further information is available on the CropLife Website <http://www.croplife.org/> and the ECPA website <http://www.ecpa.be/>.

The new Chair of CropLife/ECPA SEG, Mr Jean-Philippe Bascou from Bayer CropScience, has been appointed.

## 6.5 European Food Safety Authority (EFSA)

Mr László Bura made a presentation on *EFSA: an institutional overview*.

The year 2012 marks the 10<sup>th</sup> anniversary of the General Food Law and the establishment of the European Food Safety Authority (Regulation (EC) 178/2002 entered into force on 28 January 2002). For 10 years, EFSA has underpinned the European Union's decisions on food and feed safety, animal health and welfare, nutrition and plant health.

EFSA guiding principles consist of scientific excellence, independence, openness, transparency and responsiveness. The number of personnel working for EFSA has increased significantly since 2004. EFSA has new offices in Parma since January 2011.

EFSA is dedicated to scientific excellence. More than 2500 scientific outputs from EFSA have been produced since its beginning with a significant increase in output from 2007 to 2012. The remit of EFSA is extremely wide consisting of food and feed, nutrition, animal health and welfare and plant health. EFSA relies upon scientific expertise across Europe, providing impartial scientific advice. EFSA publish their own journal, have scientific colloquia, and cooperate internationally. The number of EFSA Conclusions has increased significantly since 2006.

EFSA provide scientific advice from farm to fork in a number of areas – plant health, plant protection, biological food chain hazards, food chain contaminants, animal health and welfare and their diseases, food additives, flavorings and processing aids, genetically modified organisms, animal feed, food packaging, and dietary, nutritional and novel food.

EFSA have played and will continue to play a leading role in consumer protection. EFSA have played a major role in EU's rapid responses to food-related emergencies and animal health issues such as contamination of pork by dioxins in Ireland, nicotine in mushrooms and pathogenic *Escherichia coli* outbreaks in Germany and France.

EFSA currently work with:

- 30 national food safety agencies
- 300 research institutes
- Over 1500 experts



- EU agencies
- Third country organisations
- World Organization for Animal WHO and FAO
- CODEX
- Food Standards Australia New Zealand
- USDA, US Food and Drug Administration (FDA), US EPA
- Japanese Food Safety Commission
- Chinese FDA

In past years media interest in the work of EFSA has been growing. There are a significant number of emerging issues and trends that will shape EFSA's future work such as new technologies, increasing complexity of work and new risk assessment methods and guidance.

### ***Questions/Comments***

None.

## **6.6 FASA (American Federation of Agrochemical Societies)**

Ms Monica Luna introduced FASA and presented its activities at the meeting. She noted that FASA consists of 32 members in 18 countries. It was formed in January 2008 as a non-profit corporation to seek a balanced and equitable competition of products for agricultural use.

The FASA's objectives are:

- A balanced competition for off-patent products in the pesticide industry; and
- Protection of environment through promoting the use of environmentally friendly products for crop protection, and providing educational programmes on pesticide use.

Achievements and activities of FASA were:

- The Central American customs union round for Pesticides Registration was held in Guatemala and El Salvador.
- Participated in the 10th Association of the Pharmaceutical Industry-Agriculture Chapter in Bogota, Colombia.
- FASA executed a health education programme on occupational safety and use of pesticides in the Republic of El Salvador, in coordination with the Ministry of Health and the Center for Technology Transfer - CENTA 2011.
- Participated and sponsored congress meetings in the Republic of Honduras in 2011 and 2012. Sponsored a pesticide control training of Honduran government officials.

- Coordinated a seminar on use of alternative inputs in modern agricultural production, for 46 teachers of the Faculty of Agronomy of the University of El Salvador, 2011.
- Organized the Regional (Central America, Panama and Dominican Republic) workshop on “Development of standards for pesticide residues” , El Salvador, 2012.
- Participated in pilot projects for setting MRLs in tropical and sub-tropical crops in Central America .
- Participated in meetings in the USA, including with EPA, Capitol Hill and the Connecting the Americas Conference.
- FASA became a Member of the Honduras National Committee of Chemical Substances.
- Worked with ALINA and ANDINA attending various meetings and conferences and donated equipment to the office of pesticide registration, Bolivia.

### ***Questions/Comments***

None.

### **6.7 Other organizations**

No other organizations presented their report.

### **7. National reports regarding CIPAC activities and reports from official quality control laboratories**

The following country reports, including any collaborative studies in which they participated, were presented: Argentina, Belgium, Czech Republic, El Salvador, France, Germany, Greece, Guatemala, Hungary, Ireland, Japan, Panama, Slovakia, Slovenia, Spain, South Africa, Switzerland, Thailand (Department of Agriculture and Department of Public Health), Ukraine, and the UK. Annex 1 contains a summary of the reports presented in the meeting.

Dr Zaim noted that this year less number of national reports have been received than previous years. The majority of the data comes from the agricultural sector than from public health. It is difficult to make a global conclusion from the reported results as the data presented came from a variety of sources and with varying sample size.

Dr Zaim commented that the high number of non-compliance seen in the Belgian country report reflects the outcome of a specific investigation into public health product quality control and mentioned that it is alarming that more than 50% have

failed the standards set. He requested that CropLife and AgroCare provide input to WHO as to how the important issue of poor quality control in public health pesticides can be overcome. He invited inputs from any interested parties by the end of July 2012.

Dr Ralf Hänel informed the meeting that national reports, which were provided electronically, are available on the CIPAC web-site (<http://www.cipac.org/datepla.htm>).

## **8. Status, review and publication of CIPAC methods**

Dr Hänel informed the meeting that most of the issues had already been covered under Section 5.1 of the Open Meeting. However, he emphasised the work carried out on the CIPAC LN wash method and announced that information and results from collaborative tests of the CIPAC LN wash method will be presented in detail at the CIPAC technical meeting on 13 June 2012.

Further information is available on the website of CIPAC at: [www.cipac.org](http://www.cipac.org)

## **9. Proposed new/extended CIPAC analytical and physical test methods**

### **9.1 Proposal for a washing method for LN-formulations**

Dr Olivier Pigeon, Walloon Agricultural Research Centre, Gembloux, Belgium, informed the meeting that LNs are the main tool for mosquito prevention and control. He provided an update of the current status of the CIPAC LN washing method. The new CIPAC method is a standardisation of the current WHO method for washing LNs.

Dr Pigeon gave an account of the proposals/discussion put forward in previous CIPAC meetings. During the 2009 CIPAC Meeting in San Salvador, it was agreed to develop a standardized method based on the WHO method and that this method needed to:

- allow determination of the wash resistance of LN in an analytical/quality control laboratory;
- be applicable for all types of LNs;
- standardise all parameters including the detergent and the movement and
- use instruments, equipment and chemicals that are easily and globally available.

During 2010 and 2011, significant progress has been made including:

- Calibration of IEC-A\* with Marseille soap;

- Study on several washing agents;
- Determination of a new washing agent more appropriate than Marseille soap and IEC-A\*;
- Testing of the precision of the washing method;
- Testing of the CIPAC washing agent concentration;
- Pre-testing of the washing/rinsing movement and
- Harmonization of the heating (regeneration) temperature between successive washes for coated and incorporated LNs.

Dr Pigeon informed the meeting that results from the small scale collaborative trial for the LN washing method would be presented at the CIPAC technical meeting on 13 June 2012.

### ***Questions/Comments***

None.

## **10. Subjects from JMPS Closed Meeting**

Dr Markus Müller, Chairman of JMPS, presented significant issues which were raised during the 11<sup>th</sup> JMPS Closed Meeting.

He informed that the JMPS recommendations included:

- Regular review and, if necessary, updating the existing specifications.
- Regular confirmation by industry of continued validity of manufacturing process and quality control limits supplied to JMPS. See also section 2.7 of FAO/WHO Manual.
- Increased efforts by industry to train its members on use of FAO and WHO procedures for development of pesticide specifications.
- Development of a check-list of requirements for preparation and submission of application dossier to the JMPS. See also section 3.2 of the FAO/WHO Manual on data requirements. The check-list is to be used by the manufacturers, FAO, WHO and the evaluators for completeness check.
- Revision of existing JMPS timelines. The timelines should be modified to allow for replacement of a compound/product if the proposer cannot meet JMPS data/information requirements.

- Submission of data by industry, especially hazard data, in the standard format. All data should be presented in a MS Word file and not in PDF file. The templates for specifications can be found on the FAO website.
- Requirements of data and information to ensure availability of internal quality assurance and quality control.
- JMPS will develop and propose additional data/information template that should be provided by the industry to ensure that sufficient internal quality assurances and control are in place.
- Need for sufficient data in support of parameters of the specifications for formulated products. Industry should provide sufficient data to support each and all criteria of specifications for a formulated product (see also section 3.B of the FAO/WHO Manual - data requirements for formulations).
- Add, to the evaluation reports, guidance to Member States on use of references and the evaluation report. Such guidance will enable member states to make best use of the reference specifications.

### ***Questions/Comments***

In relation to the last point, Dr Dawson (CropLife) asked Dr Müller if the publication of guidelines to Member States would be made public. Dr Müller confirmed that the guidelines would be made publicly available by including the same in the next revision of the manual. JMPS will provide ample guidance to the national authorities how the guidelines should be used. Dr Zaim added that the text and the format of the guidance has yet not been agreed but the JMPS has noted that there was a real need for this advice so that Member States can make better use of JMPS evaluation reports.

Garth Drury (ECCA) asked clarification regarding the process for submitting and agreeing amendments to the manual.

Dr Zaim replied that the exact process will depend on the particular amendment; however, in general, industry submits a proposal which would be discussed in the JMPS Closed Meeting and then brought back to the Open Meeting. In some cases very little input will be required from industry. In some other cases, industry and other stakeholders will be invited to provide comments for consideration of the JMPS. All amendments to the Manual will be presented to the Open Meeting. The decisions would then be published on the websites of FAO and WHO.

All changes to the Manual are included in separate document called "Amendments" which is published side-by-side to the Manual on the WHO website. These amendments will then finally be incorporated into the next edition of the manual when it is produced. Mr Dawson commented that all amendments are already included at the end of the Manual in the form of an Annex, by FAO on their website. However, a joint decision has now been taken to publish all amendments as separate documents until they are included in the next revision of the manual.

Dr Zaim indicated that the report of the Open Meeting is expected to be published in August 2012. Industry and other stakeholders are therefore invited to provide their comments to the latest recommendations of the JMPS Closed Meeting to FAO and WHO by the end of September 2012 at the latest.

## **11. Review and publication of FAO and WHO specifications for pesticides**

### **11.1 Status of FAO Specifications**

Ms Yang informed the meeting of the status of FAO specifications after the 2011 JMPS meeting as shown in Annex 3. Specifications have been published for six compounds (actives) however it should be noted that several products exist for some compounds. A further specifications of seven compound have almost been completed requiring only minor editing details for a number of them.

### **11.2 & 11.3 Status of WHO Specifications and Status of Joint FAO/WHO specifications**

Dr Zaim reported on the status of the publication of WHO and Joint FAO/WHO specifications (2008 to 2011) as summarized in Annexes 4 and 5, respectively. He noted that out of 19 applications received during 2008, 2009 and 2010, six applications (32%) were withdrawn which is a quite high number. Dr Zaim informed the meeting that the 32% withdrawal indicated that Industry did not understand the manual well enough. The JMPS had put a lot of effort and time in examining these applications and it was considered that the time and effort had been wasted.

There are no pending WHO specifications or FAO/WHO specifications during the named period and the average time for finalization and publication of the evaluation report and specifications has been 18 months. The average time of 18 months needs to be reduced by *ca.* 50%. Industry needs to have a better understanding of the process so that the evaluation time can be reduced. Dr Zaim indicated that the suggestions from Dr Muller and the JMPS will be useful in significantly reducing the current 18-month time period. Industry associations should educate their members in relation to the process of equivalence.

No evaluation reports that were submitted from 2008 to 2010 remained pending, but some remained pending from 2011. Completion of WHOPES efficacy testing is awaited for three specifications from the 2011 priority list. A number of the specifications that have not yet been completed are only awaiting confirmation from national authorities that their evaluation was the same as evaluated by the JMPS. This is currently a major bottleneck in the process. Industry must make sure that their product is also registered by a Member State – this is a very important issue.

From the 10 applications made in 2011, five were for development of WHO specifications, three of which have already been published and the evaluation report for the other two specifications have already been finalised. From the five applications for joint FAO and WHO specifications in 2011, one has been finalised and the other four are pending due to the data gaps.

## **12. FAO/WHO priority list and programme for development of FAO and WHO specifications for pesticides**

Dr Zaim presented the priority list and programme for development of FAO and WHO specifications for pesticides for consideration of JMPS 2013 (see Annex 2) in three different categories: (1) original proposer; (2) subsequent proposer(s); (3) specification for formulation.

He informed the meeting that there are currently 19 proposals for the priority list. Seven of these proposals are for establishment of reference profiles and as original proposer. One application is for development of specifications for formulation (category 3) and the remaining are for equivalence determination.

Dr Zaim noted that the programme of work has not been finalized by JMPS Closed Meeting as some applicants were not present in the meeting and further consultations might be required after the Open Meeting. There are also several new manufacturers who might have limited understanding of the work and requirements of JMPS. It was likely that number of applications of these manufacturers will be limited in the first round.

The meeting was asked for any additional proposals in relation to the list for next year:

Mr J.P. Bascou indicated that Bayer CropScience would like to propose a revision of the specification for deltamethrin WG to include a water soluble bag and for bendiocarb WP specifications in order to extend the concentration range of formulation. The request was accepted.

## **13. Any other matters**

Dr Zaim informed the meeting that this may be his last JMPS meeting in his current capacity and expressed his great pleasure to work with JMPS and its partners. On behalf of CIPAC and FAO respectively, Dr Hänel and Ms Yang thanked Dr Zaim for his significant contributions to the work of JMPS.

## **14. Date and venue of the next meeting**

The next CIPAC/FAO/WHO Annual Meeting will be held in Kiev, Ukraine in 2013. Dr V. Chmil invited all participants to Kiev in 2013. He made a presentation of the meeting venue, including a brief introduction to Kiev.

Provisional dates for the JMPS and CIPAC meetings were announced as 5<sup>th</sup> to the 13<sup>th</sup> of June, 2013. Details are available on the CIPAC website (<http://www.cipac.org/datepla.htm>).

## **Closing of the 9<sup>th</sup> Joint CIPAC/FAO/WHO Open Meeting**

Dr Zaim, Chairperson of the Meeting, declared the meeting closed and thanked the participants for their attendance and the rapporteurs for their excellent work.

### **Annexes**

Annex 1. Summary table of national reports of official quality control laboratories.

Annex 2. Programme for development of FAO and WHO specifications for pesticides.

Annex 3. Status of publication of FAO specifications.

Annex 4. Status of publication of WHO specifications and FAO/WHO specifications.



**ANNEX 1.  
SUMMARY TABLE OF NATIONAL REPORTS OF OFFICIAL QUALITY CONTROL  
LABORATORIES**

Region	Reporting laboratory	No. Of samples tested	Non-compliance	
			No.	%
Africa	South Africa	7746	47	0.6
Americas	Argentina	894	12	1.3
	El Salvador	625	30	4.8
	Guatemala	203	19	9.4
	Panama	180	6	3.3
Europe	Belgium	286	145	50.7
	Czech Republic	46	23	50.0
	France	54	36	66.7
	Germany	282	39	13.8
	Greece	932	1	0.1
	Hungary	889	6	0.7
	Ireland	171	5	2.9
	Slovakia	85	5	5.9
	Slovenia	14	0	0
	Spain	160	5	3.1
	Switzerland	20	5	25
	Ukraine	171	54	31.6
	UK	40	12	30.0
Asia	Japan	22	1	4.5
	Thailand	5843	115	2.0
<b>Total</b>		<b>18663</b>	<b>566</b>	<b>3</b>

**ANNEX 2.  
PROGRAMME FOR DEVELOPMENT OF FAO AND WHO SPECIFICATIONS FOR PESTICIDES**

(1) Original proposer; (2) Subsequent proposer(s); (3) Specification for formulation

Year	Products	Proposer(s)
2013	<b>FAO:</b>	
	Clodinafop propargyl TC	(2) Bharat Rasayan Ltd
	Fenazaquin TC	(1) Gowan
	Fenpyroximate TC	(1) Nihon Nohaku
	Flumioxazin TC,WP	(1) Sumitomo
	Nicosulfuron TC,OD	(2) Rotam CropSciences
	Phosmet TC	(1) Gowan
	Pyridaben TC	(1) Nissan
	<b>WHO:</b>	
	Review of WHO interim specifications for LNs	To be determined
	Deltamethrin (coated) LN	(2) Life Ideas Textiles Company (2) Fujian Yamei Industry
	Deltamethrin (incorporated into filaments) LN	(2) Life Ideas Textiles Company
	Permethrin 25:75	(1) Bayer
	S-bioallethrin + permethrin and PBO	(3) Bayer
	Temephos TC	(2) Heranba
	<b>FAO &amp; WHO:</b>	
	Bifenthrin TC	(2) Bharat Rasayan; Rotam CropSciences
	Brodifacoum TC,CB,RB,BB	(1) Syngenta
	Chlorpyrifos TC	(2) Bharat Rasayan
	Deltamethrin TC, WP	(2) Rotam CropSciences
Malathion TC	(2) Sinochem	

**ANNEX 3.  
STATUS OF PUBLICATION OF FAO SPECIFICATIONS**

<b>Product</b>	<b>Manufacturer</b>	<b>Status (2011)</b>
Haloxyfop-P-methyl TC, EC	Dow	Published
Triadimefon TC, EC, WP, WG, GR,	BCS	Published
Pyriproxyfen TC, EC, EW	Sumitomo	Published
Dimethoate TC	Cheminova; BASF; Isagro	Published
Mefenpyr-diethyl TC, WG, EW, EC, OD	BCS	Published
Hexazinone TC (extension)	Nutrichem	Published
Carbosulfan TC	FMC	Report to be published
Nicosulfuron TC	Cheminova	To be published
Copper products	European Union Copper Task Force	To be edited for publication
Fluazinam TC, SC	ISK Biosciences Europe	Validation of the CIPAC methods ?
Diazinon TC	Makhteshim	Report to be published
Picloram TC	Nutrichem	To be finalized for publication
Fipronil TC	Helm	Pending registration information
Clothianidin TC, FS, WS	BCS	Pending the review of 2012 JMPS
Fosthiazate TC, GR	Ishihara Sangyo Kaisha	Pending CIPAC method
Triflumuron TC,WP, SC	BCS	Pending information from the company
Azoxystrobin TC	Helm	Pending the review of 2012 JMPS
Cyazofamid TC, SC	ISK	Pending CIPAC method
Dinotefuran TC	Mitsui	Pending information from the company
Chlorfenapyr TC, SC	BASF	Pending CIPAC method

**ANNEX 4**  
**STATUS OF PUBLICATION OF WHO AND FAO/WHO SPECIFICATIONS**

2008	Temephos	Gharda	WHO	Jun-11
	alpha-Cypermethrin	Gharda	FAO/WHO	Sep-09
	Chlorpyrifos	Gharda	FAO/WHO	Mar-09
	Deltamethrin	Gharda	FAO/WHO	Jan-10
	Permethrin	Gharda	FAO/WHO	Withdrawn
2009	Deltamethrin LN	Vestergaard	WHO	Sep-10
	Deltamethrin LN	Tana Netting	WHO	Sep-10
	alpha-Cypermethrin	Meghmani	FAO/WHO	Jan-12
	Bifenthrin	FMC	FAO/WHO	Jan-12
	Diazinon	Makhteshim	FAO/WHO	Withdrawn
	Permethrin	Tagros	FAO/WHO	Apr-10
	Piperonyl butoxide	Endura	FAO/WHO	Dec-10
2010	Deltamethrin LN	Yorkkool	WHO	Sep-10
	Spinosad EC	Clarke/DAS	WHO	Sep-11
	Permethrin EC	Tagros	WHO	Sep-11
	Chlorpyrifos	Meghmani	FAO/WHO	Withdrawn
	Deltamethrin	Meghmani	FAO/WHO	Withdrawn
	lambda-cyhalothrin	Meghmani	FAO/WHO	Withdrawn
	Permethrin	Meghmani	FAO/WHO	Withdrawn
2011	Alpha-Cypermethrin LN	Disease Control Techn.	WHO	Sep-11
	Alpha-cypermethrin LN	VKA Polymers	WHO	Sep-11
	Bacillus thuringiensis GR	Valent BioSciences	WHO	Finalized
	Deltamethrin LN	Bayer	WHO	Sep-11
	Pirimiphos-methyl CS	Syngenta	WHO	Finalized
	Alpha-cypermethrin TC	Bharat Rasayan	FAO/WHO	Pending
	Chlorfenapyr TC,SC	BASF	FAO/WHO	Finalized
	Deltamethrin EC,EW,SC	Bayer	FAO/WHO	Pending
	Lambda-cyhalothrin TC	Bharat Rasayan	FAO/WHO	Pending
	Permethrin (40:60 cis/trans) TC	Tagros	FAO/WHO	Pending