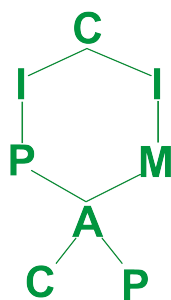




Food and Agriculture  
Organization of the  
United Nations



World Health  
Organization

# Twelfth joint CIPAC/FAO/WHO Open Meeting (59th CIPAC Meeting and 14th JMPS Meeting)

2015

# TWELFTH JOINT CIPAC/FAO/WHO OPEN MEETING

(59<sup>th</sup> CIPAC Meeting and 14<sup>th</sup> JMPS Meeting)

Royal Olympic Hotel, Athens, Greece

15 June 2015

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## 1. Opening and welcome

Madam Yong Zhen Yang, representing the Food and Agriculture Organization of the United Nations (FAO), welcomed all participants to the 12th Joint CIPAC/FAO/WHO Open Meeting. Special thanks were extended to the Benaki Phytopathological Institute (BPI), Athens, Greece for hosting the meeting.

Madam Yang also introduced Mr Rajpal Yadav, WHO Pesticide Evaluation Scheme (WHOPES), Department of Control of Neglected Tropical Diseases, representing the World Health Organization (WHO), and Mr Ralf Hänel, Chairman of the Collaborative International Pesticides Analytical Council Ltd (CIPAC), to the meeting.

The special guests from Greece present at the opening of the meeting were Mr Dimitrios Gelalis, Deputy Secretary General of the Hellenic Ministry of Reconstruction of Production, Environment and Energy, and Ms Kyriaki Machera, Director of BPI.

Mr Gelalis welcomed the guests to the 12th Joint CIPAC/FAO/WHO Open Meeting hosted by the BPI and noted that this was the second time that the meeting was taking place in Greece. The scientific meetings contribute greatly to the dissemination and further development of knowledge (scientific, technical) as well as to the improvement of administrative procedures, evaluation and policy-making. Mr Gelalis expressed the need to increase primary agricultural production in order to be able to cover nutritional needs at national, European and international levels, which has to be balanced with the continuous control and mitigation effects of plant protection products and biocides on water, soil, plants and animal organisms, on residue levels in food and feed as well as the minimization of pesticides' impact on human health with special focus on future generations.

Mr Gelalis highlighted that substances in the food chain and the environment need to be limited through technical specifications of pesticide products, and that the JMPS meeting helps to guarantee the quality of pesticides. The presence of such substances needs to be controlled by specifications in order to mitigate harmful effects. To support this work, sampling is carried out by competent authorities, and the laboratories monitor specifications. The national action plan for the market control of plant protection products is issued annually by the Ministry, in line with the Regulation and the provisions of the European Union (EU). Sampling is carried out by the competent authorities for market control and the pesticides are analysed and examined for compliance with respect to their specifications and packaging, at the competent Control Laboratories. With the national market control system, Greece is trying to safeguard the compliance of pesticides in the national and European markets with the specifications that have been adopted. To achieve this aim it will continue supporting the scientific progress of the specific field as well as the official system for the control of plant protection products. The BPI continues to support the system to control specifications, and is one of the main national institutes involved in research of the aforementioned issues around pesticides. The important work carried out by the BPI will continue to have the support of the Ministry in its research efforts on plant protection and plant health. The Ministry is particularly interested in the area of applied research in support of the primary production, a prerequisite for the production of safe and quality-assured products.

Mr Gelalis looked forward to hearing suggestions that could resolve two issues: (i) the need for new and effective plant protection products to replace "old" but effective products that have been banned from the European market; and (ii) the need for the necessary crop protection tools to protect crops of minor economic importance that remain of great importance for local societies and family businesses. Examples include mastic gum from Chios Island and a number of herbs such as *stamnagathi*.

Ms Machera mentioned that it was a great honour to host and organize the event, and delivered a short presentation of BPI and its activities. The BPI was founded by Emmanouil Benakis in 1929, and inaugurated as a legal entity of the public sector in 1931. The BPI seeks to protect agricultural production, to balance agriculture and safety for human health, animal health and the environment, to provide services to Greek farmers and to protect public health from vector-borne diseases. The Institute's human capital comprises more than 110 scientists from different disciplines as well as 30 technicians and administrative personnel. Its infrastructure is distributed among 13 fully equipped research laboratories and a biosafety level 3 research greenhouse.

Research carried out at BPI is aimed at the protection and upgrading of primary agricultural production through the implementation of effective and safe procedures. The BPI is:

- the national competent authority for the evaluation and risk assessment of Plant Protection Products and Biocides in line with EU regulations;
- the national reference laboratory for monitoring of pesticide residues;
- the national laboratory for market control of pesticide quality and counterfeit products;
- the national laboratory for phytosanitary controls;
- the national laboratory for surveys of harmful plant organisms (quarantine pests); and
- the provider of technical support to the Hellenic Ministry of Reconstruction of Production, Environment and Energy for 18 EU Directives and nine Regulations.

BPI laboratories have analytical capacity for more than 400 analysts in different matrices with a focus on food safety and environmental quality. During the past 5 years a significant number of research projects have been carried out on all aspects of plant protection and safety for human health and environmental quality. Evaluation of plant protection and other biocide products have been carried out in all relevant fields. The availability of robust, cost-effective analytical methods of analysis and those for physico-chemical properties and specifications are the cornerstones for the quality, efficacy and safety of pesticides and the implementation of the abovementioned activities.

The pesticide evaluation and the risk assessment are carried out with active substances and formulations, and the presence of impurities can affect the safety and risk assessment of the active substance and formulation; hence it is important to have a clear specification. The work carried out by CIPAC, FAO and WHO provides tools and procedures to safeguard the quality, efficacy and safety of the plant protection and biocidal products. Thus it is a great honour for the BPI scientists to contribute to this effort.

Quality, safety and efficacy are the main concerns in relation to the presence of counterfeit pesticide products on the Greek market and are the work of the Laboratory of Pesticide Chemical Analysis at the BPI. This work was initiated by Mr Ada Rokofilou-Hourdakis who retired from BPI in 2007, and sadly passed away in 2011. Ms Elen Karasali now continues the work supported by eight scientists and two technicians, and will carry on with the support of WHO, FAO and CIPAC.

Mr Ralf Hänel, Chairman of CIPAC, welcomed participants on behalf of CIPAC. He thanked Mr Gelalis, Ms Machera, Madam Yang and Mr Yadav for organizing the meeting. CIPAC last held a meeting in Greece in 1989, and Greece has a long history of working with CIPAC. As mentioned by Ms Machera, Greece has always been an active participant in CIPAC thanks to the work of Mr Rokofilou-Hourdakis, which is now being taken forward by Ms Karasali. Mr Hänel highlighted the importance of the published validated CIPAC methods in ensuring the high quality of plant protection products and how the use of such methods is helping to address counterfeit products, which are an increasing concern. He looked forward to continuing a fruitful and productive collaboration.

Mr Yadav (WHO) thanked the participants for their contributions and welcomed them all on behalf of WHO. He acknowledged the younger attendees present and the important opportunity of bringing both young and more experienced members together. He expressed the importance of pesticides in supporting agriculture and protecting humans from disease vectors. Public health is the priority of WHO, and Mr Yadav noted that diseases such as malaria and in particular dengue, which was previously found only in tropical regions, are now increasingly occurring in Europe, particularly southern Europe. One of the causes for their spread is the increasing migration of mosquitoes due to the expansion of air travel, making the need for aircraft disinsection crucial.

Part of the response to the spread of such diseases is promoting the use of pesticides whilst simultaneously working to reduce the risk to human health, animals and the environment. The International Code of Conduct on Pesticide Management (the Code) is important for facilitating quality control in this context. The meeting supports implementation of the Code, and hence the delivery of quality-assured products to the market. It also facilitates the work carried out by WHO when informing health ministries of safe use and disposal of pesticide products. Mr Yadav thanked all the organizations involved in the meeting and highlighted the productive joint collaboration with FAO, and thanked CIPAC for the provision of methods for testing quality.

Madam Yang, representing FAO, welcomed participants and thanked the hosts and organizers as well as WHO and CIPAC for their hard work and effort in organizing the meetings. She thanked Ms Elen Karasali in particular for organizing the meeting and extending warm hospitality. Madam Yang was impressed by the beautiful, clean landscape and the good food provided during the meeting in Greece this year; this appreciation reflected the importance in supporting the environment and of food through the work of the Ministry and the BPI.

The year 2015 is the FAO year for nutrition and hence it is timely to emphasize the importance of quality control of pesticide products and residues in food. Madam Yang highlighted how the meeting is impressed by the history of the BPI in supporting this critical area of work. Furthermore, she thanked the BPI not only for their support of quality control work but also their contribution to FAO in capacity-building of pesticide quality and residue control in Armenia. Madam Yang expressed her wish to continue collaboration with the Greek Government into the future. Finally, she also thanked WHO and CIPAC and all the participants present for attending the meeting in Athens.

The meeting observed a moment of silence in memory of AMrian Burns, who, as Mr Hänel informed the meeting, had passed away in 2014. Mr Burns was the CIPAC contact for the United States of America and the AOAC contact. He had been a member of CIPAC since 2006.

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

Madam Yang noted that the Chairmanship of the joint Open Meeting rotates among the three organizations (FAO, WHO and CIPAC). This year it was the turn of FAO to facilitate the meeting, with herself as the Chair. Madam Yang proposed three rapporteurs for the meeting: Ms Wendy Leslie (FAO), Mr Finbar Brown (WHO) and Mr Jim Garvey (CIPAC), who were duly appointed. The rapporteurs were thanked for their support.

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

Agenda item 7 was moved to the end of the CIPAC Open Meeting for logistic reasons.

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

##### **Eleventh Joint CIPAC/FAO/WHO Open Meeting; 58<sup>th</sup> CIPAC Meeting, and 13<sup>th</sup> JMPS, Belgium**

The summary record of the previous joint Open Meeting held at the Hotel Crowne Plaza, Liège, Belgium on 23 June 2014 is available on the FAO/WHO website. No comments were made, so the minutes of the 11th CIPAC/FAO/WHO Open Meeting (2014) were accepted.

#### **5. Summary of actions taken after the 58<sup>th</sup> CIPAC and 13<sup>th</sup> JMPS meetings**

##### **5.1 CIPAC**

Mr Ralf Hänel informed the meeting of the major activities carried out by CIPAC since the previous Joint Open Meeting. CIPAC had participated in the ASTM International 35th Symposium on Pesticide Formulation and Delivery Systems (New Orleans, LA, USA, 7–9 October 2014). CIPAC is willing to receive comments on improving its guidelines and methods.

##### **5.2 FAO**

Madam Yong Zhen Yang informed the meeting of the activities, meetings and events held by FAO since the previous Joint Open Meeting.

##### *Training workshops and meetings*

- FAO/WHO Joint Meeting on pesticide residues (September 2014, Rome, Italy)  
Some new maximum residue limits; some with Mrawn.
- FAO/WHO Joint Meeting on Pesticide Management (October 2014, Rome, Italy)  
Registration toolkit; highly hazardous pesticides.
- International training workshop on maximum residue limits and residue risk assessment of pesticide residues (November 2014, Beijing, China)
- Training workshop on FAO/WHO pesticide specifications (November 2014, Hangzhou, China)
- 47th CCPR (April 2015, Beijing, China)  
More than 300 maximum residue limits approved.

##### *Documents and publications*

- 2014 JMPR report and evaluations (residue monographs)  
<http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/jmpr/jmpr-rep/en/>
- New Code of Conduct on Pesticide Management  
Approved by the FAO Conference in June 2013 and by WHO in January 2014. The new Code is available in the six official United Nations languages (Arabic, Chinese, English, French, Russian and Spanish)  
<http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/code/en/>
- Mraft guidelines pending finalization
  - Pesticide legislation
  - Pesticide labelling
- Mraft guidelines under development
  - Highly hazardous pesticides
  - Microbial pesticides
  - Household pesticides
  - Licensing and inspection of pesticide distributors and retailers

- Licensing of pest control operators
- Personal protection when working with pesticides
- Pesticide storage.

In addition to the above list, the JMPM will also be notified of the removal of the sampling guideline from the Manual on development and use of FAO and WHO specifications for pesticides.

#### *Pesticide registration toolkit*

- Four expert workshops on development of the toolkit conducted at FAO HQ in 2014–2015:
  - Residue assessment
  - Registration by analogy
  - Occupational risk assessment
  - Efficacy evaluation.

Madam Yang noted the importance of understanding that the Toolkit assists countries in making their own decisions but it does not make decisions for the country. Rather, it provides assistance in the decision-making process. The Toolkit will be made available through the FAO website by the end of 2015. Two training workshops using a trial edition of the Toolkit will be conducted for registration authorities in Africa and South-East Asian countries.

#### *Technical projects*

- Pesticide field projects
  - Three new GEF approvals in Africa
  - Operating in 60 countries
  - US\$ 35 million projects under AGPMC management
- IPM and Farmer Field Schools (FFS)
- 10 FFS-based projects in Africa with SPI themes including climate change adaptation, nutrition, value chains, gender (value > US\$ 20 million);
- Facilitated creation of national extension strategy in Burundi based on FFS approach for more than 10 FFS-based projects (value > US\$ 200 million);
- SHARP tool for assessing climate resilience (co-developed with AGPME) included in 11 projects in FAO (GEF, TCP, Pastoralist Hub) and two NGOs.

#### **Questions/comments**

When will the labelling guidelines be available?

Mr Yadav (WHO) informed the meeting that the guideline is being edited and will be available shortly.

#### **5.3 WHO**

Mr Rajpal Yadav informed the meeting of the major activities carried out by WHO within the framework of sound management of public health pesticides since the previous Joint Open Meeting.

#### *Support for vector control and pesticide management*

- The 17th WHOPES Working Group meeting (Geneva, Switzerland, 15–19 September 2014) recommended two new vector control pesticides.

- 17 pesticide products are under testing and evaluation under WHOPES programmes.
- The theme of the 9th meeting of the Global Collaboration for Development of Pesticides for Public Health was insecticide resistance – monitoring and management.

#### *Evaluation of public health pesticides*

Major reforms of WHOPES are now planned. WHOPES started in 1960 and has been in operation for the past 55 years. Mr Yadav gave an overview of the scope of WHOPES evaluations for efficacy, with respect to applications, vectors and diseases.

- The WHOPES global network has expanded over the past 5 years, with currently approximately 20 collaborative institutions and study sites involved in testing and evaluation.
- The scope for WHOPES evaluations of efficacy has been widened to include evaluation of molluscicides. A user guideline on molluscicides is also being developed.

#### *WHO study of long-lasting insecticidal net fabric strength determination*

- WHO conducted a study to determine the fabric strength parameters of nets using a number of textile tests. The tests included bursting strength, fabric weight, wounded bursting strength, hole propagation, hook tensile strength, snag test, tearing strength, abrasion resistance, seam stability and flammability. A WHO Consultation was conducted in August 2014; the outcomes will inform long-lasting insecticidal net specifications. The discussion points and recommendations from the consultation were provided for each test method.
- Bursting strength (method EN ISO 13938-2):  
The method should be restricted to the pneumatic method.
- Flammability (method 16 CFR Part 1610 and EN 1102):  
These consist of 45° angle tests and a vertical test. The vertical flammability test (EN 1102) should not only be incorporated into WHO specifications but should also be a requirement for all nets entering the WHOPES programme. Detailed, standardized procedures should be specified for methods and for calculating sample size.
- Fabric weight (EN 12127):  
Fabric weight should be included in WHO specifications. As it is an indirect measure of denier, it can be used to cross-check denier specifications. The test is also relevant for expressing the insecticide content in an LLIN product as mg/m<sup>2</sup> from the content measured as g/kg.
- \*Hook tensile strength (method ISO 13934-2):  
Measures the tendency of materials to rupture and snag. Similar to the snag test (below), it is also a measure of how holes propagate after an initial snag. As for other tests, the results must be correlated with performance in the field and all the protocols standardized.
- \*Snag test (adapted from EN 15598):  
Measures the force required to break the yarn in a fabric, creating a hole. It is designed to estimate the basic resistance of a fabric to initial filament breakage. The results of this slightly modified ISO method correlate well with field data.
- \*Wounded bursting strength (EN ISO 13938-2):  
While the results of this test have not been correlated with field data, it is useful, as no other test is available to evaluate tearing of netting material after wounding.
- \*Hole propagation (adapted from the wounded burst test):



Evaluates how holes in nets enlarge by secondary mechanisms such as laddering, unravelling and tearing. The results add to those of the wounded bursting strength test in understanding the propagation of holes.

- \*Abrasion resistance (adapted from ISO 12947:1998):  
Measures the susceptibility of a sample to abrasion, which is an important cause of damage in the field. The reproducibility of the results obtained with this test was questioned. It must be standardized and validated before widespread use.
- Seam stability (adapted from the bursting strength test):  
Current WHO methods for testing bursting strength could be adapted to test seam stability. This would require setting new thresholds for the test, defining where on the netting (e.g. seams) the test should be performed and also minor modifications to equipment.

Note: Test methods marked with an (\*) will require inter-laboratory validation.

Mr Yadav informed the meeting that bursting strength, flammability and fabric weight parameters will be included in the updated Mraft specification template for LLINs. However, the remaining parameters and test methods require validation before a decision on their inclusion can be made.

#### *Quality control*

- Specification Manual  
The Manual on development and use of FAO and WHO specifications for pesticides is being updated by JMPS.
- Standard operating procedures for efficacy testing  
SOPs are being developed for IRS, LLINs and other applications.
- GLP/GEP facilities  
WHO hopes to have all laboratories involved in the WHOPES testing programme accredited to GLP/GEP status.
- International Pesticide Application Research Centre  
The Centre in the UK will close in 2016. Therefore, a process has been started to designate the Navy Entomology Center of Excellence (Florida, USA) as the new test Centre for testing pesticide application equipment.
- Revision of specification guidelines for application equipment is required.

#### *Sound management of pesticides*

- The JMPM advises FAO and WHO on the development of guidelines. The 8<sup>th</sup> FAO/WHO Joint Meeting on Pesticide Management (Rome, Italy, 14–17 October 2014) reviewed work on guidelines pending finalization and new guidelines in the pipeline.
- Workshops on integrated vector management (IVM) were organized by WHO.
- A handbook on IVM is under development.
- Revision of curriculum for diploma course in pesticide management  
Support is being provided to the University of Cape Town for revision of this curriculum.
- Global insecticide use survey (2010–2014)  
WHO has started a survey on the global use of insecticides for vector-borne disease control over 5 years (2010–2014).

### *Vector Control Advisory Group (VCAG)*

- VCAG was established in 2013 to serve as an advisory body to WHO on new vector control paradigms for malaria and other vector-borne diseases.
- Out of 16 reviewed submissions, VCAG has established eight new paradigms for vector control.
- About half of the prototypes have a potential role in dengue vector control.
- VCAG will continue to assess and guide new paradigms for vector control, including addressing the challenges of insecticide resistance across all vectors.

### *Vector Ecology and Management*

- Dengue and chikungunya
  - A situation paper was discussed at the WHO Executive Board meeting (January 2015) and reviewed at the World Health Assembly (May 2015).
  - Dengue burden studies are in progress at four sites and will be completed this year.
  - Dengue vector management workshops were organized for two WHO regions.
  - Integrated vector management strategies are under development in WHO's Eastern Mediterranean and Western Pacific regions.
- Collaboration was made with International Health Regulations on vector control in ports of entry and vector identification platform.

### *Information and resources on WHOPES*

The WHOPES website is being updated.

### **Questions/responses**

- (i) There are currently 14 pesticide products undergoing testing and evaluation. What are they?  
Mr Yadav mentioned that a detailed list is available on the WHOPES website.
- (ii) Why is there a proposal to introduce flammability as part of the new long-lasting insecticidal net specification? The necessity to include flammability is not understood. The 2009 revision of the Manual removed all safety aspects from the specification requirements. Flammability is also important for UL formulations. Why does WHOPES want to introduce it for LN and not for UL the formulations that are also used in agriculture pest control?

Mr Yadav explained that the rationale behind including flammability in the specification is that WHO considers that the requirement to provide flammability information should not be optional. Nets are used in homes and can be a fire hazard. The Manual has a provision to disclose flammability on LN packaging but WHO now wants to include the information in product specifications. Madam Yang mentioned that the FAO understands the query with regards to UL formulations and this issue can be discussed later.

## 6. Technical liaison with other organizations

Madam Yang noted that WHO, FAO and CIPAC work with many regional and international organizations. She called upon these organizations to present reports of their work on the management and quality control of pesticides. The following presentations were made:

### 6.1 AgroCare

Mr Garth Mrury informed the meeting that AgroCare is a global organization representing generic pesticide manufacturers comprising 865 different companies and four regional associations: AgroCare Latin America (previously 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). AgroCare promotes access to high-quality public health and crop protection products and recognizes the importance of affordable prices and competition. AgroCare acknowledges the pivotal role of the JMPM, JMPS and JMPR in the process of ensuring high-quality public health and nutrition for all.

AgroCare's various global and regional initiatives include:

- Contributing to the revision of the Manual on development and use of FAO and WHO specification for pesticides – six proposed additions or amendments were made, one proposal is outside the scope of the current revision, while another five proposals will be considered for the 3rd revision.
- Access, quality, transparency, competition and innovation – these goals are behind AgroCare's proposal for revision of the Manual.
- ECCA anti-counterfeiting initiatives – ECCA and ECPA organized a Crop Protection European Regulatory Conference (Brussels, March 2015). Discussions evolved around the issue of counterfeit products. Generic products are vulnerable to counterfeit operations because they do not have the support to monitor for counterfeit products. Counterfeit products are often hidden for a long time before they are exposed. ECCA is collaborating closely with officials to combat counterfeiting. The routine sampling of commercial products may detect counterfeit products as well as "real" products. ECCA requests that the annual reports from national monitoring laboratories be fed back when counterfeits are found.

ECCA has suggested ways of preventing counterfeit trade in the future through:

- coordination within industry;
- increased cooperation with enforcing authorities;
- use of perfect marker technology processes
  - marker inclusion/stability, etc.;
  - marker detection (e.g. PCR);
- boosting detection and enforcement capabilities of local authorities and customs
- New SANCO guidelines are being put in place to monitor cross-border movement.
- *ALINA*  
Actions include:
  - Completing the process of legally locating AgroCare Latin America in Costa Rica
  - Performing the 3rd Inter-laboratory Proficiency Test involving members of AgroCare Latin America and invited national authorities (15 participants from nine countries).
  - Lobbying actions before national authorities in defence of the non-inclusion of Paraquat in Annex III of the Rotterdam Convention.

- Performing a seminar on issues of intellectual protection / data protection before Paraguay Regulatory Authorities.
  - Preparing a Mraft on HHP, which was approved by AgroCare and sent to JMPM, and disseminating the document among members of AgroCare Latin America.
  - Inviting Alan Hruska (FAO) to the Annual Assembly of AgroCare Latin America for a Workshop on the International Code of Conduct (2013 version).
  - Providing continued support and assessment to domestic companies on management of empty pesticide containers.
- *PMFAI*  
A number of initiatives have been carried out to implement best practices in pesticide management:
    - Registration for imports of ready-made pesticide formulations without registering the technical materials (TGAI).
    - PMFAI has been raising its objection against allowing import of formulations without registering its technical grade pesticide in India, as this provision encourages import of sub-standard pesticides to the country and the entire industry has to face criticism when farmers suffer crop losses due to use of such products.
    - Continuous training programmes for farmers regarding use, protection equipment and environmental issues.
    - Safe disposal of used pesticide containers.
    - PMFAI is a participant in the committee constituted by the Ministry of Agriculture, Government of India to recommend measures for safe disposal of pesticide containers. The recycling of containers is good for the environment but opens up a potential route to counterfeit products.
- *CCPIA*  
CCPIA continuously promotes “Responsible Care” and HSE by:
    - Establishing the China Pesticide Industry Responsible Care Alliance together with 18 pesticide companies to advance social responsibilities.
    - Cultivating professional HSE talent for the industry by cooperating with Nanjing Tech University to initiate the MBA program of Agrochemical HSE.
    - Conducting HSE compliance assessments in the industry (another five companies passed the HSE check by improving and rectification in 2014).
    - Answering more than 5100 emergency calls in 2014 through the hot lines of paraquat responsible care group that involved 1782 patients; 73 professional trainings were conducted and 11753 grass-root doctors accepted the training.
    - Announcing in June 2014 an approval list of first-round of Glyphosate (PMIDA) Environmental Protection Scrutiny; four of the manufacturers voluntarily accepted the scrutiny passed.
    - conducting nearly 80 trainings in 2014 on safely and scientifically using pesticide by the CCPIA Committee of Using Pesticides Safely and Scientifically attended by some 12300 farmers.
- CCPIA devotes enhancing service for the industry
    - CCPIA F&P (formulation and package) centre invited domestic and international experts to implement Improvement Program in China F&P area, devoted to solving the engineering problems for the formulation manufacturers. Through half-year work, the production performance of some plants is greatly improved.
    - CCPIA timely release the relevant information of the industry by continuing use of the website, microblogging and Webchat platform. The number of Webchat fans is now more than 20 000.

- China Pesticide Industry website and newsletters added monthly China Agrochemical Price Index and analysis and forecast of marketing trends, which has been popular and recognized.
- CCPIA continues to play a bridging role for government
  - CCPIA edited the “Summary of Domestic and Foreign Pesticide Supplier Information and Investigation” and the Survey on Development of International Pesticide Products” for the Planting Management Division of the Ministry of Agriculture and submitted “Proposed Amendments to Health Insecticide Registration”.
  - CCPIA completed the MEP project on “Developing a Comprehensive List for Environmental Protection in China Pesticide Industry” and assessed 49 pesticides including three high-pollution product techs. Additionally, it collected and provided advice for “Contents of High Risk and High Pollution Products” amendment.
  - CCPIA actively participated in the MEP to establish “Air Pollutant Release Standard of Pesticide Industry”. It recommended that key enterprises investigate and help to collect information in order to improve the industry database.
  - CCPIA helped MIIT to hold a seminar in 2014 on “Anti-counterfeit of Agricultural Production Means & Supervision and Random Check of Pesticide Product Production Permit”. It assisted with implementation of a quality comparison test between the 28 analytical stations and 21 pesticide manufacturers.

**Questions/comments:** None.

## **6.2 AOAC International**

There was no participation in the meeting this year and AOAC hopes to participate next year.

## **6.3 ASTM International**

There was no participation in the meeting this year and ASTM hopes to participate next year.

## **6.4 CropLife International and European Crop Protection Association**

Mr Jean-Philippe Bascou, Chair of the CropLife International and European Crop Protection Association’s Specifications Expert Group, noted that in addition to main member companies, CropLife represents the plant science industry in 91 countries. The Expert Group has about 1000 members (large and small companies) through its affiliation with CropLife’s regional and national organizations. Between them, CropLife members have the largest share of the so-called generic or off-patent market. Thus, CropLife represents the entire spectrum of the industry, not just the research and development-based (multinational) industry.

Mr Bascou focused on the work of ECPA for this year’s presentation. He briefed that ECPA:

- acts as the ambassador of the crop protection industry in Europe and represents the industry’s European regional network;
- promotes modern agricultural technology in the context of sustainable development;
- represents the crop protection industry in relevant European forums on behalf of its major stakeholders and the wider public;

- endeavours to listen to and learn from its stakeholders and the public, and seeks to understand their interests, views and perspectives; and
- advocates policies and legislation that represent a scientific and risk-based approach, fosters innovation, protects intellectual property and rewards the introduction of new technologies and practice.

Mr Bascou outlined the role and activities of the Expert Group which comprises representatives of member companies with expertise in analytical, physico-chemical, regulatory and formulation sciences as well as ad hoc members from other areas of expertise (for example, toxicology and ecotoxicology, Bio Control Agents, etc.). The Group is a technical resource for CropLife and ECPA, which was established to enhance good specification quality and to promote consistency and harmonization in registration requirements. Its mission is to provide a forum comprising experts in matters of product quality and specifications for discussion and resolution of technical issues of importance to the Crop Protection Industry and to promote harmonization.

There are currently 23 full members from 10 countries from four continents and corresponding members from other companies. The five full members who left the Group since the 2014 Open Meeting have been replaced by four new members.

The key activities of the Group include:

- Serves as an industry interface with FAO/WHO and the specifications process by:
  - providing discussion and feedback on improvements and amendments to the FAO/WHO Manual on specifications. This year it has provided annual comments, input in the revision of the manual, specifications for new formulation codes (MR, LB, GD) and a proposal for enrichment of Chapter 9 on Biological Products.
  - providing support to workshops on formulation specification training, quality, equivalence procedure and confidential business information; and
  - continuing to provide support to the JMPS process (industry guidance document on JMPS procedure on CLI web site).
- Engages in and supports the work of CIPAC by:
  - coordinating efforts with other expert groups (e.g. DAPF, DAPA, ESPAC, Phys-Chem Industry forum, OECD WG, etc.);
  - playing a leading role in introducing new or revised or updated MT methods (e.g. MT46 for LN); and
  - annually introducing analytical methods to be used in specifications as reference methods, e.g. chlorantraniliprole, pyriproxyfen, silthiofam.
- Provides and maintains industry technical monographs (TM), for example TM1, TM2, TM17, and TM19.
- Supports ECPA and CLI regulatory teams:
  - On formulation changes – management at zonal level
- Engages in and supports the OECD Working Group on Product Chemistry:
  - Storage stability (guideline)
  - Analysed the results in the survey on the data requirements for registration in Product chemistry
  - Available to contribute to any guidance on data requirements for registration that would be needed.
- Supports CropLife in workshops and training:
  - Africa and Middle East
    - Egypt: pesticide quality and specifications
    - Côte d'Ivoire: introduction to CBI and Equ. Proc. (April 2015)
  - Asia
    - China: USA/EU data requirements comparison

- India: data bridging concept, stereoisomerism, equivalence procedure and CBI (November 2014)
- Malaysia: data requirements in new regulation commented
- Seeks improved harmonization
- Fosters innovation
- Supports a scientific and risk-based approach
  - fully supports the transparency concept providing it does not endanger confidential business information and data protection.

**Questions/comments:** None.

## 6.5 European Food Safety Authority (EFSA)

Mr László Bura presented an overview of EFSA's role in ensuring European food safety.

EFSA ensures Europe's food safety by being:

- a key actor in the EU food safety system;
- committed to excellence in risk assessment;
- open, transparent and independent;
- sustained by a robust governance;
- an advocate of scientific cooperation;
- leading on risk communications; and
- constantly evolving to meet new challenges.

EFSA is tasked with:

- providing independent scientific advice and support for EU law or policies on food and feed safety;
- providing independent, timely risk communication; and
- promoting scientific cooperation.

EFSA is not tasked with:

- developing food safety policies and legislation;
- adopting regulations, authorise marketing of new products;
- enforcing food safety legislation; and
- taking charge of food safety/quality controls, labelling or other such issues, like inspections and traceability

EFSA is driven by the core values of:

- openness
- transparency
- responsiveness
- independence
- excellence in science.

Commitment to scientific excellence means scientific excellence in risk assessment throughout the workflow, with special focus on urgent requests for scientific advice. The quality of its science is central to everything EFSA does.

Key elements of EFSA's science strategy 2012–2016 are to:

- further develop its scientific advice;
- optimize the use of risk assessment capacity in the EU;
- strengthen the scientific basis for risk assessment and monitoring;

- develop and harmonize methodologies to assess risk in the food chain; and
- create a roadmap.

EFSA's contribution to scientific excellence in risk assessment encompasses:

- more than 3300 outputs which include over 2330 opinions (2000th opinion in 2012);
- scientific expertise across Europe;
- impartial scientific advice; and
- EFSA Journal, Scientific Colloquia, international cooperation, etc.

The workflow system:

- EFSA can receive a question from EU COM, EU Parliament, EU Member States or can self-mandate;
- EFSA's scientists evaluate, assess and advise;
- adoption and communication.

Examples of urgent requests for scientific advice from EFSA since 2007 include:

- 2014: swine fever
- 2013: hepatitis A; *Salmonella mikawasima*; phenylbutazone in horsemeat; *Xylella fastidiosa* in olive trees
- 2012: "Schmallenberg" virus (SBV)
- 2011: STEC in vegetables
- 2010: volcanic ash, chlormequat in table grapes
- 2009: nicotine in wild mushrooms; 4-methylbenzophenone in breakfast cereals
- 2008: dioxins in pork meat; melamine in infant milk; mineral oil in sunflower oil
- 2007: melamine in food and feed.

EFSA seeks high-calibre experts to serve on its Scientific Committee and Scientific Panels:

- Open call to scientists from all EU Member States and beyond.
- EFSA chooses candidates with proven excellence in one or more scientific fields within its remit.
- Open, transparent selection procedure.
- Carefully selected experts provide scientific advice from field to fork (e.g. plant health, plant protection, genetically modified organisms, chemical contaminants).

Panels:

- Are the owners of scientific opinions.

Scientific Committee:

- Ensures consistency
- Issues guidance
- Assesses emerging risks.

EFSA works within Europe:

- National food safety agencies/research organizations (Article 36)
- 400 research institutes
- 1500 experts
- EU agencies: ECHA, EMA and ECDC.

EFSA works outside Europe with:

- National food safety organizations:
  - US: FDA, USDA APHIS, USDA FSIS, ARS, EPA
  - Health Canada
  - Food Safety Commission of Japan



- Food Standards Australia
- New Zealand Food Safety Authority
- International organisations: WHO, FAO and OIE.

EFSA works in an open and transparent, inclusive manner:

- EFSA Founding Regulation 178/2002
- Support of stakeholders for establishment of EFSA
- Management Board decisions on transparency and openness
- Stakeholder involvement right from the start.

The nature of EFSA's work is changing:

- More work on regulated products
- Not always predictable
- Increased calls for responsiveness, more efficiency
- Direct interest by industry, close scrutiny by other stakeholders
- More guidance, better services.

EFSA is diversifying into new work areas:

- Evaluation of the safety and environmental impact of new products (e.g. novel food, additives)
- Development of new risk evaluation methods (e.g. nanotechnology, active and intelligent packaging; “-omics”, less animal testing)
- Evaluation of efficacy or benefits (e.g. pesticides (2011), claims).

There are new risks and challenges arising:

- Chemical mixtures/combined toxicity
- Emerging antimicrobial resistance
- Hazards linked to globalisation (plant pests, animal diseases, food-borne diseases, outbreaks, etc.).

EFSA will respond to future challenges by utilizing:

- Science Strategy 2012–2016
- Communication Synopsis 2014–2016
- Efficiency initiatives
- Single Programming Document 2014–2016.

EFSA will tackle these challenges by:

- improving mid-term planning
- reinforcing risk assessment capacity (scientific cooperation)
- optimizing internal scientific expertise
- conducting risk assessment training
- adopting a proactive approach to emerging risks
- integrated multi-disciplinary advice
- developing harmonized methodologies
- collecting and analysing high-quality data.

**Questions/comments:** None

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

Ms Monica Luna introduced FASA and presented its activities to the meeting.

- El Salvador: Educational programme organized on health protection and safe use of pesticides in coordination with the Ministry of Health and the Center of Technology Transfer (CENTA).
- Dominican Republic and Central America Regional Workshop (Costa Rica): Project in cooperation with FASA to strengthen regional capacity to meet export requirements concerning pesticides, based on International Standards.
- Honduras: FASA became a collaborative member of the National Commission of Chemical Management (CNG), created by the National Congress.
- FASA collaborated in the project “Strengthening National Capacity for the Management and Reduction of Persistent Organic Pollutants”.
- Honduras: In 2015, POP exports to England included 60 tonnes of obsolete and banned pesticides for destruction. Of the product exported, 16% was contaminated with DDT and 4% was pure DDT. The total cost of the entire operation of removing POP’s was about US\$ 283 000.00, financed by the Government of Honduras and with the technical cooperation of UNDP GEF.
- Managua, Nicaragua 2014: FASA participated in the Annual Meeting of the IDB and Civil Society (26 countries).
- Antigua and Barbuda, 2014: FASA participated in the 19th annual meeting as an Associate Member of the Coordinating Group of Pesticides Control Board of The Caribbean.
- Central American Customs Union: Since last year’s meeting, laws have been adopted and harmonized for Central America (and approved by the World Trade Organization; WTO) for:
  - regulations for household and professional pesticides
  - harmonized label and pamphlets have been approved for the six countries for household pesticides
  - microbial pesticides
  - botanical pesticides
  - harmonized label and pamphlet for chemical pesticides (under discussion at WTO)
  - fertilizers and soil amendments.
- Bogota, Colombia 2014: FASA participated in the first national Agricultural Dignity Congress
  - Topics discussed:
    - prices (competitive and affordable)
    - no to monopolies inputs
    - debt solutions for agricultural Industry.
- FASA are developing school infrastructure in Honduras in 2015 (recognition of social responsibility).

**Questions/comments:** None

## **6.7 Other organizations**

No other organizations presented reports.

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

The following country reports, including any collaborative studies in which they participated, were presented: Belgium (two reports for agriculture and public health), China, Czech Republic, Denmark, El Salvador, Germany, Greece, Hungary, Ireland, Italy, Japan,

Netherlands, Panama, Romania, Slovenia, South Africa, Spain, Switzerland, Thailand, Ukraine and the United Kingdom. Annex 1 contains a summary of the reports.

National reports that were provided electronically are available on the CIPAC website (<http://www.cipac.org/datepla.htm>).

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

Mr Hänel reported that the review of CIPAC handbooks G & H has been completed. Some methods are considered obsolete, mainly due to the use of titration methods and packed GC columns. However, it was noted that methods will not be withdrawn simply because they use titration methods and packed columns, because consideration should be given to whether these particular methods are relied upon in published FAO/WHO specifications.

The development of handbook O is in progress. Discussions are ongoing about increasing the number of users per licence. The format of publications (handbooks and CD-ROMs) will be discussed further during the CIPAC Management Committee meeting.

Further information on CIPAC methods and publications is available on the website ([www.cipac.org](http://www.cipac.org)).

**Questions/comments:** None

## **9. Subjects from the 14<sup>th</sup> JMPS Closed Meeting**

The following significant issues and new matters were raised during discussions held in the JMPS Closed Meeting. These were presented by Mr Markus Mueller, Chairman of JMPS, to the FAO/WHO/CIPAC Open Meeting.

### *Major issues identified in the closed meeting*

- Revision of the FAO/WHO Specifications manual – comments from AgroCare and CropLife SEG have been received.
- New or revised specification guidelines for LN, LB, GD, DT, ST, WT.
- Proposed revision of equivalence process: Tier-2.
- Major revision of Section 9 on microbial pesticides.
- Issues with data submissions.

### *Comments by AgroCare*

- Set up a database for 5-batch data for technical actives at FAO for access by national authorities (“proposed amendment on a large-scale may require the setting up of an encrypted digital database, accessible on-line by the national regulatory authorities”.)
- Specifications: The proposition is to revise the Manual, that “specifications must be limited to the published information ... (as in the Manual). Confidential information, such as the full reference profiles that include non-relevant impurities, may be examined by the JMPS but should not become a component of any international standard”.
- Confirmation of registration for a subsequent proposer’s product.
- Extension of specifications to additional manufacturing site for generics as well.

#### *JMPS 2015 conclusions on AgroCare comments*

- The setting up of a database for 5-batch data is not within the mandate of FAO; data would require skilled interpretation case-by-case; therefore currently this is not possible.
- Specifications: if non-relevant impurities were identified but later ignored in equivalence, it would mean a step back to the old procedure. Some 15 years of experience demonstrates the importance of using the new specifications procedure.
- Registration confirmation: this issue needs to be discussed further.
- Extension to additional manufacturing site: JMPS agrees with the AgroCare proposal.

#### *CropLife SEG comments*

- Major revision of Section 9 (“Specification guidelines for microbial pesticides”) was proposed.
- New formulation types, such as GD and LB with model specifications, are being considered for inclusion in the revised FAO/WHO Specifications manual.
- Editorial comments.

#### *JMPS conclusions on CropLife comments*

- Major revision of Section 9 (microbials) is welcome as the section is currently only rudimentary and should be replaced by a text under development by industry and JMPS.
- A workshop of a small JMPS group is proposed in November 2015 to elaborate Section 9 which is not ready for inclusion in the November 2015 version of the Manual.
- New formulation types GD and LB: JMPS agreed to accept these new formulation types.
- Editorial comments: JMPS will consider editorial changes proposed.

#### *New model specifications proposed and accepted*

- Major revision of long-lasting insecticidal net guideline section will be done by WHO
- Long-lasting storage bag (FAO)
- Gel for direct application (GD)
- Tablet specifications DT, WT, ST.

The information will be available on the Internet soon, and will be included in the Manual.

#### *Late 2015 – 3rd revision of the First Edition of the Manual includes:*

- Consolidated version with all adopted comments by CropLife SEG
- Procedural changes, such as revision of reference profiles (see 2014)
- Auxiliary documents, such as a checklist
- Model specifications updated and corrected (see below)
- Appendices updated, corrected or removed where appropriate.

It is proposed that the current Tier-2 procedure for determination of equivalence of a technical material will be revised in order to improve guidance pertaining to submission of toxicological studies in order to gain additional information on the hazard profile at Tier 2. The current procedure and the proposal for the new procedure to improve predictive power of the Tier 2 assessments regarding potential hazards are shown below.

#### *Equivalence for technical material – current procedure*

- Tier-1 chemical evidence and bacterial reverse mutation (OECD 471)
- Tier-2 acute toxicity (if required):

Tier 2 should aim to predict whether or not material is “more hazardous than reference”

- Approximately 90% of submissions are Tier 1 equivalent
- Remaining 10% require Tier-2 acute toxicity:  
Predictive power is limited however, with current methodology giving ranges or limits rather than end-points (e.g. OECD 425).

*Proposal for revision – equivalence Tier-2 with real predictive power*

- Tier-2 new proposal:
  - delete inhalation toxicity
  - add subchronic 28 or 90 days to derive NOAEL and “critical effects” (e.g. neurotoxicity, blood status, organ function)
- Tier-2 acceptance criteria:
  - NOAEL derived from second manufacturer: not more than  $10^{0.5}$  toxic as NOAEL of reference
- Same critical effects in test of reference material and subsequent manufacturer
- Before publication of any change to the Tier 2 procedure there will be a consultation phase:
  - consultation of a semi-final Mraft with industry
  - pilot phase (studies are mostly available).

*Issues with data submissions 2015 identified at the closed JMPS meeting*

- Missing in data package:
  - Mraft specifications (FAO or WHO template) should be submitted for a representative product summarizing data for the Physical/Chemical and technical properties of that product in line with the manual. Such specifications were missing from a number of submissions this year.
  - 5-batch data should be supported by a CIPAC adopted method of analysis for the active substance and impurities.
  - Letters of access should be included in the submission.

*Issues with data submissions: consequences of the above omissions*

- Time-consuming communication of evaluator with proposer companies.
- Experience suggests that focal persons at certain companies do not understand data requirements of FAO and WHO as published, resulting in significant challenges for the evaluators. Focal persons need training in companies (e.g. by pesticide manufacturer associations) to improve the standard of future submissions.

## **Questions/comments**

### **Comment 1**

Mr Garth Mrury (AgroCare) informed the meeting that the position paper put forward by it to JMPS for consideration at the Closed Meeting may have been misinterpreted and clarified a number of issues that were included in the position paper.

- “Database for 5-batch data for technical actives at FAO for access by National authorities”  
The request was not in the position paper. AgroCare wants national authorities to have access to the JMPS evaluation because non-availability of reference profiles hampers progress.
- “Specifications: non-relevant impurities should no longer be implicit subject of evaluations”

The AgroCare position paper was meant to convey that it should not be part of the international standard.

- Old-procedure  
AgroCare did not state that it wanted to return to the old procedure.

#### Comment 2

Data from different manufacturing sites. What does this mean?

The same manufacturing process can occur at different plant locations (for reference and generic manufactures). Each site, however, needs 5-batch data to support its own specification, despite the same process being used.

#### Comment 3

Revising Tier 2: JMPS currently has a Tier 1 with 1 toxicity test included. Could JMPS switch the Ames test from Tier 1 to Tier 2 to align it with the EU equivalence process?

#### Comment 4

It was also noted that certain OECD methods give end-points and not ranges for some acute tests; therefore if the correct OECD method is used an end-point rather than a range will result. This means ranges will not need to be compared with an actual end-point.

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

### **10.1 Status of FAO specifications**

Madam Yang presented the status of FAO specifications shown as tables (Annex 3). It was noted that there are a large number of recently published specifications. However, obtaining Letters of Access (LoA) from registration authorities appears to be causing delays with some pending specifications. In some cases, national authorities are not responding to LoA requests, and in other cases a specific contact person for the national authority has not been included on the LoA, which has caused confusion and ultimately a delay in the process.

#### **Questions/comments**

Some authorities are not allowed to respond to external authorities and manufactures are required to meet them in person, which causes a problem. Madam Yang acknowledged the problem but reiterated the importance of having the contact name on the LoA.

### **10.2 Status of WHO specifications**

Mr Yadav presented the status of WHO specifications shown as tables (Annex 4). It was noted that there is a long period for submission until publication for some specifications because of data gap issues. It appears that some Proposer's are not following the data requirements as outlined in the Manual prior to submission, which results in withMrawals after initial submission in some cases. Proposals should be submitted before 31 May each year.

**Questions/comments:** None

### **10.3 Status of Joint FAO/WHO specifications**

Mr Yadav presented the status of joint FAO/WHO specifications shown as tables (Annex 4).

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

Mr Yadav presented the list of priorities for JMPS 2015 (Annex 2) in four different categories: (1) original proposer; (2) subsequent proposer(s); (3) specification for formulation; and (4) revision of specification.

**Questions/comments:** None

#### **12. Any other matters**

No other matters were discussed.

#### **13. Date and venue of the next JMPS and CIPAC meetings**

At the request of the Chairperson, Mr Ralf Hänel announced that the CIPAC/FAO/WHO Annual Meeting in 2016 will be held in Tokyo, Japan. A presentation by the host was given on the new venue of the meeting. Exact dates in June 2016 will be announced later. Further details will be available in due course of time on the CIPAC website (<http://www.cipac.org/datepla.htm>).

#### **14. Closing of the 12<sup>th</sup> Joint CIPAC/FAO/WHO Open Meeting**

Madam Yang, Chairperson of the meeting, declared the meeting closed and thanked Ms Elen Karasali and her team for their hard work in organizing the meeting, Mr Hänel and Madam Yang for their continued collaboration, the participants for their attendance and the rapporteurs for their work. She declared the meeting closed.

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

Region	Reporting laboratory	Number of samples tested	Non-compliance	
			Number	%
Africa	South Africa	971	66	7.0
Americas	El Salvador	503	6	1.2
	Panama	231	13	5.6
Asia	Japan	22	0	0
	China	4164	593	14.2
	Thailand	231	24	10.4
Europe	Belgium (public health)	382	123	32.2
	Belgium (agriculture)	91	12	13.2
	Czech Republic	61	20	32.8
	Denmark	36	9	25.0
	Germany	270	18	6.7
	Greece	318	0	0.0
	Hungary	833	18	2.2
	Ireland	160	9	5.6
	Italy	6892	18	0.3
	Netherlands	19	0	0
	Romania	212	69	32.5
	Slovenia	31	1	3.1
	Spain	427	14	3.3
Switzerland	38	8	21.1	
Ukraine	54	24	44.4	
	United Kingdom	56	5	8.9
<b>Total</b>		<b>16002</b>	<b>1050</b>	<b>11.6</b>



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

- (1) Original proposer; (2) Subsequent proposer(s); (3) Specification for formulation;  
(4) Revision of specification

Year	Products	Proposer(s)
<b>2016</b>	<b>FAO</b>	
1.	Azoxystrobin TC	(2) Jiangsu Sevencontinent Green Chemical (2) Nutrichem
2.	Beta-cyfluthrin TC (revision)	(4) Bayer CropScience
3.	Bacillus subtilis QST 713 TC, BK, SC, WP	(1) Bayer CropScience
4.	Propiconazole TC	(1) Jiangsu Fengdeng Crop Science
5.	Pyraoxystrobin TC, SC	(1) Shenyang Sciencreat Chemical
6.	Silthiofam TC, FS	(1) Monsanto
7.	Dicamba TC	(1) Jiangsu Yangnong Chem Co. Ltd.
8.	Fluazinam TC	(2) Nutrichem
	<b>WHO</b>	
1.	Sumilarv 2MR	(3) Sumitomo Chemical, Japan
2.	Clothianidin 500+ deltamethrin 62.5 WP	(3) Bayer CropScience, Germany
3.	Clothianidin TC, WP	(1) Bayer CropScience, Germany
4.	Transfluthrin TC (revision of WHO spec)	(4) Bayer CropScience, Germany
5.	Zinc borate TC (Borogard ZB)	(1) Rio Tinto Minerals, USA
6.	Bendiocarb TC	(2) Saerfu AgroChem., China
7.	Pyriproxyfen TC	(2) NTGC Fine Chemical Co. Ltd, China
8.	Alpha-cypermethrin+PBO (Duranet Plus) LN	(3) Shobikaa Impex, India
9.	Alpha-cypermethrin +PBO incorporated LN	(3) DCT, USA
10.	Alpha-cypermethrin+pyriproxyfen coated LN	(3) DCT, USA
11.	Alpha-cypermethrin incorporated LN (HILNet)	(3) HIL, India
12.	Deltamethrin (polyester coated) LN (Christiansen LN)	(3) Christiansen Sarl, France
	<b>FAO and WHO</b>	
1.	Deltamethrin WG-SB	(3) Gharda Chemicals, India
2.	Diflubenzuron TC, GR, WP & DT	(2) Gharda Chemicals, India
3.	Deltamethrin TC, SC	(2) Sharda Cropchem, India
4.	Deltamethrin TC (revision of FAO & WHO spec)	(4) Bayer CropScience, Germany

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

<b>Product</b>	<b>Manufacturer</b>	<b>Status</b>
Bifenthrin TC	Yangnong	Published
Chlorfenapyr TC, SC (revised specifications)	BASF	Published
Cyazofamid TC, SC	ISK	Published
Deltamethrin TC, WG	Rotam & Gharda	Published
Fenpyroximate TC	Nihon Nohyaku	Published (evaluation only)
Fluazinam TC, SC	ISK Biosciences Europe	Published
Flumioxazin TC	Sumitomo	Published
Lambda-cyhalothrin TC	Yangnong	Published
Glyphosate TC	Helm, Monsanto	Published
Diflubenzuron TC	Helm	To be published
Copper compounds	European Union Copper Task Force	To be published (method for heavy metals missing)
Thiacloprid TC, SC	Cheminova	To be published (pending confirmation from the authority)
Bifenthrin TC	Rotam & Bharat	Pending data from company
Chlorpyrifos TC	Bharat	Pending data comparison of registration authority
Chlorothalonil TC	Rotam	Pending data from company and confirmation from the authority
Clothianidin TC, FS, WS	BCS	Pending review of 2015 JMPS
Triflumuron TC, WP, SC	BCS	Pending information from the company

**ANNEX 4.  
STATUS OF PUBLICATION OF WHO AND FAO/WHO JOINT SPECIFICATIONS\***

***Specifications published (#9)***

<b>JMPS*</b>	<b>Compound/product</b>	<b>Manufacturer</b>	<b>Month/yr of publication</b>	<b>Spec.</b>
2011	Pirimiphos-methyl CS	Syngenta	Oct 2014	WHO
2012	Alpha-cypermethrin WG, WG-SB	Tagros	Feb 2015	WHO
2013	Bendiocarb WP80-SB	Bayer	Jun 2014	WHO
2013	Brodifacoum TC, RB	Syngenta	Apr 2015	FAO/WHO
2013	Deltamethrin TC	Rotam	Feb 2015	FAO/WHO
2014	Revision of spec (Duranet, MAGNet, Royal Sentry LN)	3 companies	Nov 2014	WHO
2014	Deltamethrin WG	Gharda; Rotam	Feb 2015	WHO
2014	Deltamethrin WG-SB	Tagros	Feb 2015	WHO
2014	Bifenthrin TC	Yangnong	Apr 2015	FAO/WHO

\*Year of original submission to JMPS.

***Terminated/failed/withMrawn***

2013	Malathion TC (terminated)	Sinochem	Apr 2015	FAO/WHO
2014	S-methoprene TC, GR (terminated)	CLS	Jan 2015	WHO
2014	Permethrin TC (40:60) (failed)	Gharda	X	FAO/WHO
2014	Lambda-cyhalothrin WP (withMrawn)	Bharat Rasayan	X	WHO