Food and Agriculture Organization of the United Nations

CONCEPT NOTE
A FAO regional workshop
"Pesticide residue risk assessment and the establishment of Maximum Residue Limits in Asia"
20-24 November 2023

1. Background

Through globalization, food production and supply chains have expanded and lengthened. While international trade brings opportunities for economic growth, it also increases the potential risks to public health from the entry of unsafe food or spread of food borne diseases. Countries have developed different standards to protect the health of their people and trade benefits as non-tariff barriers to trade for their countries. In the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) of the World Trade Organization (WTO), member countries have the right to take the SPS measures necessary for the protection of human, animal or plant health. However, member countries should ensure that any SPS measures, technical regulations and conformity assessment procedures applied do not create unnecessary obstacles to international trade. For food safety issues, international standards, guidelines, and recommendations established by the Codex Alimentarius Commission (commonly referred to as Codex) are explicitly referenced in the SPS Agreement as the international benchmark.

In the present food safety and agricultural commodity trade, pesticide residues in foods are one of the major issues. Pesticides are used worldwide in agriculture to control or prevent pests and diseases so as to ensure good yield of food crops. In almost all countries, pesticide use is regulated and all pesticides must be registered by a national competent authority prior to launching in the market. The use of pesticide could lead to residues remaining at harvest posing risks to food safety. During the process of the registration, most competent authorities approve the use patterns (good agricultural practice, GAP) to be put on the products' labels and establish the maximum residue limits (MRLs) which are "the maximum concentrations of pesticide residues (expressed as mg/kg), to be legally permitted in or on food commodities and animal feeds, based on GAP data" (definition by the Codex Alimentarius Commission). The MRLs have to be assessed for the dietary risk to consumers.

2. Rational

Asian countries are top ranking exporters of many food and agricultural products in the world. A large amount of surplus food and agricultural products from domestic consumption are exported to worldwide countries. To ensure that those agricultural commodities are safe for consumption, countries should regulate pesticide residues in domestically produced and imported foods. The Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization (WTO) stipulates in Article 3.1 that members of WTO shall base their sanitary measures on international standards, guidelines or recommendations (in the case of food safety, those of the Codex Alimentarius Commission), where they exist. In addition, many Asian countries lack sufficient capacity to set MRLs on their own and they still face with several trade problems including an absence of MRLs for those tropical agricultural commodities and different MRLs for pesticide in importing countries and exporting countries. Reasons that some countries face with the difficulty of

MRLs establishment includes lack of capacities for generating supervised residue trial data and conducting risk assessment of pesticide residue for setting up these levels.

At international level, FAO/WHO Joint Meeting on Pesticide Residues (JMPR) conducts the risk assessment and estimate maximum residue levels to be recommended for use as MRLs. Codex Alimentarius Commission, through Codex Committee of Pesticide residues (CCPR) adopt pesticide residue standard called Codex MRLs, which is used as reference for international trade among the member countries of WTO. To facilitate agricultural food trade, pesticide residue limits should therefore be harmonised with Codex MRLs as much as possible. Harmonizing methodology of risk assessment would facilitate the harmonization of MRLs. The APEC also recommends uses of Codex MRLs for trade.

To strengthen capacity of risk assessment of pesticide residue for establishing MRLs in countries in Asia, FAO's Plant Production and Protection Division (NSP) and FAO Regional Office for Asia and the Pacific (FAORAP) plan to jointly organize the workshop entitled "Pesticide residue risk assessment and the elaboration of Codex Maximum Residue Limits". The workshop will support Better production and contributes to achieving FAO strategy of transforming to new agri-food system, and Sustainable Development Goals (SDGs), in particular, SDG3 and SDG12.

3. Objectives

The objectives of the workshop include:

- to strengthen the capabilities of participating countries in evaluation of residue data;
- to update their knowledge of the assessment of risks associated with dietary intake of pesticide residues; and
- to upgrade the capacity of participating countries in establishment of Maximum Residue Limits (MRLs) in food and feed.

4. Expected Outputs

1) Around 25 national participants trained on pesticide residue risk assessment for establishment of MRLs;
2) Around 25 national participants have the latest / updated knowledge and approaches on risk assessment methodology used by JMPR;
3) Report of the workshop.

Key actions

The workshop is jointly organized by JMPR Secretariat/NSP and FAO RAP..

25 participants from 13 countries, including Brunei Darussalam, Cambodia, India, Indonesia, Lao People's Democratic Republic, Malaysia, Pakistan, the Philippines, Singapore, Thailand, Viet Nam, Timor-Leste, and Sri Lanka .

Profile of Participants

Participant should preferably be involved in in the risk assessment for establishing MRLs of pesticides. Participants who have never attended the workshop in this topic would be preferable.

As the regional workshop will be conducted in English, all those attending must be fluent in that language. Female candidates are encouraged.

For any question, please address these to Mr Guibiao YE, JMPR secretariat, at Guibiao.Ye@fao.org and Ms Panpilad SAIKAEW, Project coordinator, at Panpilad.Saikaew@fao.org .

TENTATIVE AGENDA

Day 1

Time	Item	Note
8:30 – 9:00	Registration	
Opening session		
9.00 – 9.30	• Opening Remarks	Dr Sridhar Dharmapuri, Senior Food Safety and Nutrition Officer, FAO RAP
	Group photo session	
9:45 – 10:00	Introduction and overview	Ms Panpilad Saikaew, Project Coordinator
Elaboration of Codex MRLs for pesticides		
10:00 – 10:45	How Codex establish Maximum Residue levels for pesticides?	Dr Guibiao Ye, JMPR secretariat
10:45 – 11.00	Coffee/Tea break	
Evaluation of pesticide residues to establish MRLs		
11.00 – 12.00	Process of residue evaluation for maximum residue levels and exposure assessment -most important steps	Dr Yukiko Yamada, JMPR expert
12.00 – 12.30	Identity and physical and chemical properties	Dr Yukiko Yamada
12.30 – 13.30	Lunch	
13.30 – 15.00	Crop and livestock metabolism	Dr Yukiko Yamada
15.00 – 15.15	Coffee/Tea break	
15.30 – 17.00	*Exercise*: crop metabolism	Dr Yukiko Yamada

Day 2

Time	Item	Note
9:00-10:30	Environmental fate of pesticides in soil, and rotations crops	Dr Yukiko Yamada
10:30-10:50	Coffee/Tea break	
10:50-12:30	Sampling, analysis and storage stability	Dr Yukiko Yamada
12:30-14:00	Lunch	
14:00-15:30	Definition of residue (for compliance and for dietary risk assessment)	Dr Yukiko Yamada
15:30-15:50	Coffee/Tea break	
15:50-17:30	Exercise: Definition of residues	Dr Yukiko Yamada

Day 3

Time	Item	Note
9:00-10:30	Summarizing Good Agriculture Practice (GAP) Information and selection of supervised residue trials (25% rule, proportionality, etc.)	Dr Yukiko Yamada
10:30-10:50	Coffee/Tea break	
10:50- 12:30	*Exercise*: Summarising GAP Information	Dr Yukiko Yamada
12:30-14:00	Lunch	
14:00-15:30	Selection of residue data for estimation of maximum residue levels, Supervised Trial Median Residue- (STMR) and Highest Residue (HR); and expression of maximum residue levels	Dr Yukiko Yamada
15:30-15:50	Coffee/Tea break	
15:50-17:30	*Exercise*: Evaluation of data from supervised residue trials- Estimation of maximum residue levels, STMRs and HRs	Dr Yukiko Yamada

Day 4

Time	Item	Note
9:00-10:30	Fate of pesticide residues during food Processing and storage	Dr Yukiko Yamada
10:30-10:50	Coffee/Tea break	
10:50-12:30	*Exercise*: Evaluation of food processing data	Dr Yukiko Yamada
12:30-14:00	Lunch	
14:00-15:30	Pesticide Residues in Livestock. Animal dietary burden of pesticides to livestock and livestock feeding studies	Dr Yukiko Yamada
15:30-15:50	Coffee/Tea break	
15:50-17:00	Exercise: Calculation of livestock dietary burden and estimation of maximum residue levels in foods of livestock origin	Dr Yukiko Yamada

Day 5

Time	Item	Note
9:00-10:30	Dietary risk assessment (1) Metabolites covered by the Health-Based Guidance Values (ADI and ARfD), and potency factors	Dr Yukiko Yamada
10:30-10:50	Coffee/Tea break	
10:50-12:30	Dietary risk assessment (2) conversion factors, and levels of metabolites for use in the Threshold of Toxicological Concern (TTC) approach	Dr Yukiko Yamada
12:30-14:00	Lunch	
14:00-15:30	Exercise: International Estimated Dietary Intake (IEDI) and International Estimated Short Term Intake (IESTI) calculations for dietary Intake	Dr Yukiko Yamada
15:30-15:50	Coffee/Tea break	
Closing session		
15.50 – 16.30	• Summary: Pesticide residue risk assessment and establishing MRLs • Participant comments/evaluations	Dr Guibiao Ye Dr Yukiko Yamada

Time	Item	Note
	• Closing remarks	

Note: Schedule may vary slightly depending on the contents and interests of the participants.