codex alimentarius commission

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON PESTICIDE RESIDUES
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COMMENTS ON THE DRAFT AND PROPOSED DRAFT MAXIMUM RESIDUE LIMITS FOR PESTICIDES IN FOODS AND FEEDS AT STEPS 7 AND 4, SUBMITTED BY THE UNITED STATES OF AMERICA

MRLs Advanced to Step 6 (ALINORM 07/30/24 Appendix IV):

Bifenazate

The US supports advancement of the existing MRL for meat (from mammals other than marine) to Step 8, based on clarification of the issue of livestock diet by the 2007 JMPR.   The loss of bifenazate on cotton gin trash due to instability is offset by the decrease of cotton gin trash as a percentage of livestock diet in the revised livestock feed table.   This explanation is accepted, and no revision in the MRL for meat is needed.

Endosulfan

The US does NOT support advancement of the MRLs for broccoli, celery, cherries, and tomatoes, as the JMPR (2006) identified possible acute dietary intake concerns.   It is noted that the 2006 JMPR could not identify alternative GAPs that would overcome the dietary intake issues.   The US tolerances are the same or similar to the proposed Codex MRLs, and the US has no acute dietary intake concerns based on its use patterns and probabilistic methodology.

Quinoxyfen

The US supports replacement of the 0.02 mg/kg MRL value for meat (fat) at Step 5 with the new estimate from the 2007 JMPR, 0.2 mg/kg for meat (fat), and supports the advancement of the latter to Step 8 for adoption by the CAC.

Thiabendazole

The US supports replacement of the citrus MRL at Step 5 with the new estimate from the 2007 JMPR and advancement of that new estimate to Step 8 for adoption by the CAC.

MRLs Retained at   Step 6 (ALINORM 07/30/24, Appendix VII)

Captan

The 2007 JMPR resolved concerns with the metabolite THPI without any change in the ARfD.   Therefore, the US supports advancement of the MRLs.

Carbaryl:

See comments below.   Apparent acute dietary intake concerns remain for grapes, cherries, and nectarine (stone fruit), per the 2003 *Report* JMPR.

Fenitrothion:

See comments below.

Fenpyroximate:

See comments below.

Indoxacarb

See comments below.

Phosmet

See comments below.

MRL Recommendations from the 2007 JMPR (JMPR *Report* 2007)

General:

Transparency in the JMPR MRL Estimation Process and Use of the MRL Calculator

Introduction

The JMPR previously informed CCPR that it had tested and adopted the NAFTA MRL calculation spreadsheet for use by its experts in deriving estimates of maximum residue levels for pesticide residues on plant commodities (ALINORM 06/29/24, paragraph 15, 38th CCPR, 2006; ALINM 07/30/24, paragraph 36, 39th CCPR, 2007). The EC and China (2006) supported the use of the statistical approach. The JMPR also reported that the procedure would be incorporated into the next update of the "FAO Manual for the Submission and Evaluation of Pesticide Residue Data for the Estimation of MRLs in Food and Feed." The JMPR again reports on progress with the statistical calculation of MRLs to the present session of the CCPR (JMPR 2007 *Report*, General Consideration 2.10).

The use of a statistical approach for the estimation of MRLs has been advocated by risk managers because of the important role it plays in the global harmonization of MRLs. It is understood that there will always be an element of professional judgment in the selection of MRLs as well. When the recommended statistical procedure is not utilized, presumably this is because of an unusual situation with the data set. In these cases it is extremely important that it be made very clear what procedure the JMPR followed to derive the MRL. As the global experts on MRL setting, the world is looking to the JMPR. Therefore, it is critical that the procedures, results, and professional judgment utilized by the JMPR be absolutely clear to others reviewing and potentially utilizing the information. This includes not only the CCPR but other organizations and national regulatory authorities. The goal in these cases would be that others would, hopefully, be able to adopt the JMPR conclusions and thus, harmonization could be achieved even absent the use of a standard statistical procedure in those cases.

With this goal in mind, the delegation of the United States urges the CCPR to request the JMPR to use the statistical procedure whenever appropriate. In order that the CCPR can review the procedures used and for the convenience of other organizations and national authorities, the U.S. delegation also urges the CCPR to request JMPR to institute an addition to its annual *Report* to include summary results of the statistical calculations and professional judgments used in arriving at the pesticide/commodity MRL estimates for plant commodities A specific example of the issue and a detailed proposal are provided below.

The MRL recommendations prepared by the JMPR and submitted for consideration by the CCPR should include sufficient information to allow the CCPR members to make informed judgments on their acceptability as well as to allow others to replicate them for their own use. The essential information is supplied to the CCPR membership through the publication of the JMPR *Report*. The review and reasoning process utilized by the JMPR in arriving at each maximum residue level/limit value should be presented in a concise and transparent manner in the *Report*.

The US found it difficult to ascertain how the JMPR arrived at its MRL estimates for plant commodities based on the information supplied in the 2007 *Report*. The Report contains a ranked order list of supervised field trial results used to derive each pesticide/commodity MRL (under the residue chemistry section of each pesticide) and a list of the MRLs derived from those ranked orders (in Appendix 1). However, it is not clear exactly how JMPR arrived at the various specific MRLs.

The JMPR is currently using a mixture of statistical calculation (NAFTA procedure) and professional judgment in arriving at its estimates (General Consideration 2.10, 2006 JMPR *Report*).   This mixture of statistical calculation and professional judgment is again addressed in the 2007 *Report* (General Consideration 2.9).   The US welcomes the use of statistical calculation by the JMPR, as this provides a firm basis for the estimation of the MRLs and a common mechanism which will promote harmonization of MRLs around the world.   This is especially important for the new chemicals being reviewed under multi-national shared efforts, where common MRL estimates are a goal.   While the use of a statistically-based mechanism eliminates personal biases, the US also appreciates that scientific judgment must be a part of the process.   However, this process as applied should be made clear and transparent to those who approve the recommendations and/or may want to use the results at the national or regional level.

Specific Issue and Suggested Resolution

In reviewing the JMPR *Report*, it is impossible to ascertain what value was used as the recommended estimate: 95th percentile normal; 99th percentile log normal; 95%UCL 95th percentile log normal; distribution free; mean plus 3 standard deviations; 95% UCL median; or a judgment call.   The *only* route for making this determination under the current situation is to retrieve the supervised trial residue values from the *Report* and to redo the calculations.   This is very time consuming, and the electronic spreadsheet may not be so readily available to all.   Also, errors in its use are possible by those not so expert as the JMPR panel members.

Knowing how the MRL estimate was made is important information for the risk manager. For example, a JMPR professional judgment approach may include scalar rounding which results in an estimate quite above the highest residue.   An estimate based on a log normal distribution will not have such extensive rounding up, and an indication of a log normal distribution of the data may instill greater confidence in the estimate. The same or similar values yielded by several calculation types may give more credibility to the estimate. The risk manager also needs to know where there is great disparity in the various estimates and where and how professional judgment relates to the statistical estimates.

The US suggests that JMPR be requested to include a brief summary of the statistical calculations for each pesticide/commodity combination, either as part of the report on each pesticide or as an annex.   This ought not to be an onerous task, as the JMPR has already performed the calculations and needs only to summarize the results.   Clarity and transparency should always be part of the JMPR *Report*.   The US notes that such summary information is routinely included in its national evaluations, which are publicly available.

Such a summary should include number of data points, mean value, median value, number of data points below the LOQ, lognormal or not distribution, resulting estimates from the various routines, overall value selected by the routine, and the value selected by the JMPR.   Where the estimate deviates from the statistical calculation, a very brief (one line) explanation would be useful.   Such rudimentary information will be very valuable to the CCPR as a risk management body in making informed decisions on their MRL recommendations to the CAC.   In addition, inclusion of such information makes the JMPR information transparent and complete for other organizations and national governments which wish to use it.

<u>Example of Suggested Resolution</u>

An example will illustrate the issue and the additional information requested.   The JMPR *Report 2007* for cyromazine indicates that there were 17 trials used in the MRL estimate for lettuce:

"On the basis of the European trials, the Meeting concluded that residues conducted with head and Cos lettuce using the same rate gave residues in the same range. Residues from 17 field trials conducted in lettuce in Europe in ranked order (median underlined), were: < 0.03, 0.15, 0.18, 0.19,0.22, 0.24, 0.27, 0.28, 0.34(2), 0.45, 1.3, 1.5, 1.7, 1.8(2) and 2.0 mg/kg…..The Meeting estimated a maximum residue level of 4 mg/kg, an STMR of 0.34 mg/kg and an HR of 2 mg/kg for cyromazine in head lettuce and leaf lettuce."   (2007 JMPR Report, pages 107 – 108).

One basic question for the risk manager is if 4 mg/kg is an appropriate estimate based on the data set used. Does it represent a good estimate of the MRL from the data available, such that misuse is not encouraged (MRL too high) and such that use according to GAP will not result in residues above the MRL (MRL too low)?

The NAFTA calculation spreadsheet was used by the US Delegation in an attempt to recreate the possibilities presented to the JMPR reviewers. The summary table is reproduced directly from the

Regulator:	FAO		
Chemical:	cyromaz		
Crop:	lettuce		
PHI:			
App. Rate:			
Submitter:			
n:	17		
min:	0.03		
max:	2.00		
median;	0.34		
average:	0.75		

	95th Percentile	**99th Percentile**	**99.9th Percentile**
EU Method I **Normal**	1.95 (2.56)	2.44 (3.24)	3.00 (--)
EU Method I **Log Normal**	2.99 **(8.04)**	**6.66** (23.90)	16.34 (--)
EU Method II **Distribution-Free**	3.20		
California Method **μ + 3σ**	**2.94**		
UPLMedian95th	**2.20**		
Approximate **Shapiro-Francia** **Normality Test**	0.8980 p-value > 0.05 : Do not reject lognormality assumption		

spreadsheet ("cut and paste"):

The direct cut-and-paste above could be summarized in a short table, as follows:

Pesticide	Commodity	No. of trials	Max (HR) mg/kg	Min mg/kg	Median (STMR) mg/kg	No. Values <LOQ	99th normal distrib	95 UCL of 95th log normal	99th log normal	Distrib Free	Mean + 3 SD	UPL Median 95th	JMPR MRL Estimate[1]	Comment
Cyromazine	Lettuce	17	2.0	0.03	0.34	1	2.44	8.04	6.66[1]	3.20	2.94	2.20	4	Stat estimate too far above max. 4 agrees with the distribution-free

[1] Recommendation of the statistical calculation decision tree is highlighted.

The spreadsheet recommendation is the log normal 99th percentile, 6.66 which gives 7 mg/kg after rounding. This contrasts with the JMPR estimate of 4 mg/kg. It can be *surmised* that the scientific experts considered 7 mg/kg too distant from the maximum value of 2.0 mg/kg where there is such a substantial number of data points (17) and therefore selected 4 mg/kg. However, It is further noted that "4" does not correspond to the scalar rounding system (1, 2, 3, 5, 7) sometimes used by JMPR . Perhaps the UPL (UCL) Median 95th and Distribution-Free routines were considered more appropriate (3 – 4 mg/kg range). The logic of the decision can be followed only if this summary information is provided to the CCPR and the ultimate decision is briefly explained in comments. Such information is essential for a transparent process.

These summary tables could be transcribed directly into an appendix or reformatted in a simple table, as illustrated above, and the US Delegation urges CCPR to request such information in future JMPR Reports to the Meeting. Clarity and transparency must be an essential part of the MRL-setting process.

Recommendation

The U.S. delegation urges the CCPR to request that JMPR use the statistical method whenever appropriate and to institute, in all cases, an addition to its annual *Report* to include summary results of the statistical calculations and professional judgments used in arriving at the pesticide/commodity MRL estimates for plant commodities. This information is essential in the CCPR review and decision making process as well as for achieving the goal of global harmonization of MRLs.

Specific Compounds:

The US Delegation to CCPR generally supports rapid advancement of the MRL recommendations from the 2007 JMPR, and offers the following comments on specific compounds.

Aminopyralid

Annex 1 seems to contain conflicting entries: hay or fodder (dry) of grasses at 3 mg/kg; grass hay 70 mg/kg. Our (US) data indicate that 70 mg/kg is more appropriate for grass hay. These would seem to be two disparate values for the same commodity. Consulting the 2006 JMPR Report and Evaluation, where the residue chemistry for aminopyralid was reviewed, the situation seems to be a misassignment of CCNs. The 3 mg/kg was derived for wheat (cereal grain) straw/fodder and the 70 mg/kg was derived for pasture grasses. We request clarification, but believe that the situation should be as follows:

CNN	Commodity	MRL	STMR
AS *none[1]* ~~AS0162~~	Hay of wheat ~~Hay or fodder (dry) of grasses~~	3	1
AS0162 ~~AS~~	Hay or fodder (dry) of grasses ~~Grass hay~~	70	21

[1] Current classification provides for hay only under the general AS 161, "Straw, fodder (dry) and hay of cereal grains and other grass-like plants." This cannot be used as the hay of grass-like plants has a much higher MRL of 70. The classification AS654 Wheat straw and fodder, dry does not apply in this case. Note that there is a separate entry proposed for cereal grains straw and fodder at 0.3 mg/kg. We note that in the US there are two commodities with tolerances, wheat forage at 2 ppm and wheat hay at 4 ppm. The data uses in the Codex estimate of 3 mg/kg are from the USA and Canada. The USA tolerance of 0.25 ppm for wheat straw agrees with the Codex proposal of 0.3 mg/kg for cereal grain straw and fodder (dry).

Carbaryl

The US notes that carbaryl was scheduled for a retrospective analysis (alternative GAP) of several commodities with MRLs at Step 6 because of apparent acute dietary intake concerns. The JMPR 2007 Report does not address this, and a clarification of the situation is requested.

Clofentezine

The US opposes advancement of the MRL for dried grapes (raisins) at 2 mg/kg. Raisins are covered by the proposed MRL for grapes, 2 mg/kg, that is no concentration of residue occurs in the processing of grapes to raisins.

Cyfluthrin

Annex 1 contains the wrong entry for pear, 0.07 mg/kg. According to the text of the Report (p 83), the estimate is 0.1 mg/kg for both pear and apple.

Fenitrothion

The US has not objection to the advancement of the MRLs, including that for unprocessed wheat bran where the acute reference dose is slightly exceeded (110%) for children. It must be recognized that unprocessed wheat bran is not consumed. Further processing will most likely reduce the residue of fenitrothion. The US has only one fenitrothion tolerance, for the import of wheat glutten.

Fenpyroximate

The US supports the advancement of the MRL for apple to Step 8. The previous apparent acute dietary intake problem is resolved with establishment of a higher ARfD.

Indoxacarb

The US supports the advancement of the MRL for head cabbages based on the use of US residue data on cabbages with outer leaves removed. Assuming that these cabbages represent what is consumed, then such an approach is an acceptable path to alleviate possible acute dietary intake risk concerns.

The US notes that an alternative GAP approach could have been used to resolve this issue. The JMPR Evaluation (2005) contains alternate field trial data from Europe, 22 trials with a maximum residue of 0.09 mg/kg. This would, however, have resulted in a much lower MRL proposal, about 0.2 mg/kg.

Phosmet

The US supports advancement of the MRL recommendations of the 2007 JMPR to Step 8 for apricot, blueberries, citrus fruits, nectarine, and pome fruit, based on the use of the alternative GAP approach to remove possible acute dietary intake risk concerns.

Pyrimethanil

The US opposes advancement of the MRL for citrus pulp (dry) at 3 mg/kg. Pulp is covered by the proposed MRL for citrus, 7 mg/kg (Po), that is no concentration of residue occurs in the processing of citrus to pulp.

Triazophos

The US does not have tolerances for triazophos, but supports the advancement of the MRLs for cottonseed and cottonseed oil. The JMPR is commended for taking a creative approach in reviewing the data for this use important to developing countries.