CIPAC

COLLABORATIVE INTERNATIONAL PESTICIDES ANALYTICAL COUNCIL LIMITED

Commission Internationale des Méthodes d'Analyse des Pesticides (CIMAP)

Minutes of the 54th Annual meeting

The 54th meeting was held on Wednesday 9th June, and on Thursday 10th June 2010 at the Grand Hotel Union, Ljubljana, Slovenia

1. Welcome and introductory remarks by the chairman

The Chairman, Mr Ralf Hänel, opened the 54th CIPAC meeting, and welcomed all the participants. He noted that Mr Eric Sandmann could not attend.

2. Apologies

Apologies were received from:
Mr Bernard Declercq, Mr Roberto Dommarco, Mrs Ada Hourdakis, Mrs Fatima O'Neil Pedrosa, Mr Francisco Sánchez-Rasero, Mr Eric Sandmann and Mrs Julianna Schlosserova.

3. Adoption of the agenda

The agenda was adopted with the following amendments:
Agenda point 4.7 was moved to after point 4.1. Agenda point 4.5 was moved to after point 4.2.
Agenda item 5.5 will be presented by Mr Oliver Pigeon instead of Mr Markus Müller.
2 new items were added:
5.5.1 Proposal on wash resistance index definition for LN formulations and its determination
5.5.2 Importance of the choice of detergent agent for the CIPAC washing method for LNs

4. Reports of expert witnesses

4.1 Dimoxystrobin by Mr Jürgen Fries (4710, 4711)

Mr Jürgen Fries presented the results of a full-scale collaborative study on the determination of dimoxystrobin in technical product (TC), suspension concentrate (SC) and suspo-emulsion (SE), using GC-MS and internal standardization. DB-1 column was recommended, 10 different columns were used (equivalent ones). 35 - 40 laboratories offered to participate. 26 laboratories participated from 22 countries. Concentrations were given in g/l and not g/kg. Use of internal std and carrier gas was also changed by some laboratories (depending upon the instrument conditions; changes identified did not adversely affect the method.)
For TC 1 & 2 outlier detected (lab 21) from the second day. For SC 1 stragglers identified. Lab 21 & 23 were outliers. For SC 2. Lab 21 & 23 were outliers (no stragglers). For SE – 1 straggler & 2 outliers.
3 approaches were used for calculations: In the 1st when all outliers included – RSD_R outside Horwitz RSD_R. 2nd approach, without outliers, still not good enough. 3rd approach, removed the outliers & stragglers – all OK. For all samples, the values of RSD_R were smaller than those calculated by Horwitz's equation.

The proposed method was considered appropriate for the determination of dimoxystrobin in the TC, SC, and SE and was proposed to become provisional.
Comments:
Were the calculations tried with only lab 21 removed? This was not calculated.
0.2 µl injection – is there a practical reason to use this volume? Most laboratories use 1 µl. 0.2 was the standard volume used in the industry laboratory but of course others can be used.
Did any of the labs determine the density? There was no need for the density however there was some confusion about the table and that this should be clarified in the future.

4.7 Permethrin by Mr Shahabuddin (4619, 4620)
Mr Shahabuddin presented the results of a method extension study on the determination of permethrin in emulsifiable concentrate (EC) using GC – FID. Several concentrations of EC were tested.
No interference at the specified retention time. Linearity demonstrated- mean of 2 injections at each std. concentration. The repeatability was acceptable, accuracy determined by standard addition at 5 known concentrations.
It was proposed that the CIPAC method 331/TC/M/3 for permethrin can be extended to include EC formulations.

4.2 Flazasulfuron by Mr Jim Garvey (4723, 4724)
Mr Jim Garvey presented the results of a small scale trial on the determination of flazasulfuron in TC and WG formulations using HPLC-UV at 230 nm using internal standard, organised by ESPAC in conjunction with ISK Belgium. 4 labs participated.
Comments from labs:
Ultrasonication not long enough for dissolution; for WG would be better to add some water as solvent; baseline interference for internal std for all WGs; the proposed sample preparation of adding internal std. up to volume is not ideal; would prefer to have a more concentrated internal standard and make up to volume.
2 Cochran outliers in the data. None of the outliers were removed. The TCs were within Horwitz value, but WGs weren't. Removing the outliers didn't really help.
Visual inspection of the results from Lab 3 showed much higher results than the other. Removing laboratory 3 gave results within Horwitz (but these were not identified as outliers). No internal std. was provided by the company which might have introduced variables in the results as all labs sourced their own.
Comments:
CIPAC guidance says HPLC method should not used internal std. unless it's really justified.
Were calculations made without the internal std., too? Propose that it's recalculated without the internal std. and discuss within ESPAC.
It was proposed to go to full scale trial but to use 3 point calibration without internal standard and as many laboratories as possible.
ISK will check back to see if the internal std. can be removed.

4.5 Fosthiazate by Mr Jim Garvey (4725, 4726)
Mr Jim Garvey presented the results of a small scale trial on the determination of fosthiazate in TC and GR formulations using HPLC-UV at 220 nm using internal standard, organised by ESPAC in conjunction with ISK Belgium. 5 labs participated.
Comments from laboratories:
Issue of reproducibility given low injection volume (1 µl); sample weighing was difficult.
Why dissolve in acetone when mobile phase is acetonitrile/water? The Company clarified that mobile phase works just as well. Filtration was sufficient for the samples, centrifugation may not be needed; sonicate before making up to mark.

Removing the outliers all but 1 formulation met the Horwitz criteria. No obvious reasons why this was an outlier.
Comments:
As RP-HPLC is used it was proposed to use a buffer system which helps to stabilise the retention time & response of the HPLC system. Buffered on the acidic side in this instance would help to stabilise fosthiazate.
1 µl injection volume is quite low, can a higher volume be used? The company would check but they argue that the use of an internal std. is justified. Given that generally fixed loop injection is used, a higher volume would be better. The name needs to be checked against IUPAC.
It was proposed to go to full scale study, but to use as many labs as possible and without internal standard, unless it is well justified.

4.3 Fluazinam by Mr Frédéric Joris (4727, 44728)
Mr Frédéric Joris presented the results of a full scale trial on the determination of fluazinam in TC and SC formulations using HPLC-UV and quantification with external standards.
Data were presented at CIPAC last year when there were not enough data sets. Following the first round with eight laboratories reported in June 2009, further three laboratories were included in the study for fluazinam in technical material and formulated product. The same procedure was followed as with the first set of collaborative method validations. The batch and purity of samples were identical to those for the samples provided for the first set.
Comments from labs:
Analysis is time consuming due to the long run time: 65 min per injection.
Results of all the labs were presented except lab 12, as they have made significant changes to the method.
Outliers and stragglers were identified, however when all the data are retained the RSD_R are within the Horwitz values.
The proposed method was considered appropriate for the determination of fluazinam in the TC and SC and was proposed to become provisional.

4.4 Flumioxazin by Mr Yasushi Asada (4713, 4714)
Mr Yasushi Asada presented the results of a small scale trial on the determination of flumioxazim in TC and WP formulations using RP-HPLC-UV at 288 nm and external std. 6 laboratories participated.
Some different but equivalent columns were used.
Remarks from laboratories:
3 laboratories said ultrasonication was needed to dissolve the samples. No outliers or stragglers were identified for the TC formulations. There was one Cochran outlier, not removed.
The proposed method was considered appropriate for the determination of flumioxazim in TC and WP formulations and was proposed to move to full scale trial.

4.6 Piperonyl butoxide by Ms Maria Cristina Zanotti (4717, 4718)
Ms Maria Cristina Zanotti presented the results of a small scale trial on the determination of piperonyl butoxide in TC using GC–FID and internal std. 4 laboratories participated.
Comments from laboratories: reduction of run-time by increasing the flow rate and temperature programme rate; to improve the description of the sample preparation.
Why such a thick film column was recommended? Lots of impurities in the TC, so the thick film is needed to separate the impurities from the main peak of PBO.
The proposed method was considered appropriate for the determination of PBO in TC and proposed to move to full scale trial.

4.8 Spinosad by Mr David Heim (4721, 4722)

Mr David Heim presented the results of an extension of the existing CIPAC method for the determination of spinosad in EC formulation.

The concentration of the EC was outside the acceptable range. The sample preparation followed that already said for the SC, except sample weight adjusted to cover the EC concentration range. Samples should be mixed thoroughly before sampling

Comments:

Generally ECs have mineral oil which may not be compatible with the solvent system used in the existing CIPAC method. However in this instance this does not apply and it would be worth adding a footnote to the method to explain that it is compatible with the solvent systems used.

The proposed method extension was considered appropriate for the determination of spinosad in EC and proposed to be accepted as provisional.

4.9 Clothainidin by Mr Ralf Hänel (4692)

Results of a method extension presented last year but could not be accepted from a technical points of view (at the same meeting the original methods was proposed so it was not possible to already do an extension).

5. Other matters

Mr Ralf Hänel asked the organisers of the trials to send the presentations and data beforehand if possible, to help the participants to consider the data before the meeting. Within the trials it is useful for the labs to know what their individual lab number is (although not to announce publically in the meeting).

Remarks from the editors of the handbooks:

The editors asked the authors of the methods to provide the methods in the CIPAC format, in word format rather than in pdf, and if possible to clean the images up so that no data fields, identity etc. are present. If contacted by the editors with request for information – please respond. They are only asking information that is required in the CIPAC guidance.

As a consequence of the lecture given by Mr Rainer Kober, CIPAC will use the ACD software to generate the IUPAC name.

5.1 MT 73.1 Total Hardness of Water by Mr Jürgen Zindel (4712)

New method proposed on behalf of DAPF to reflect the changes since the original method was written. This is a simplified version of the old method with commercially available reagents.

In the proposed collaborative trial no samples will be shipped, the participants should use their own water and must buy the reagents.

Comments:

Previously used to determine Ca and total hardness – but know just total hardness? Yes.

If no samples are being supplied what is the point of the trial? To check that the total hardness can be determined by the new method, the value is not needed, just to see if a clear endpoint can be reached or if not, is note 1 of the method working.

Why use the trade names? Could you describe the reagents in generic terms rather than by trade name? However, we have already methods where a certain commercial product is necessary. Any issue with basing a CIPAC method on only a single supplier was raised. It was discussed in DAPF that they didn't want to have a list of all the manufactures, they just checked what is worldwide available. It was asked if members could indicate any other well known suppliers, too. I was proposed to test the local water and in addition, one standard water, too to have some standardisation of the method.

5.2 MT 193 Friability of Tablets by Mr Jürgen Zindel (4731)
Due to the fact that the method determines rather attrition than friability it is proposed to amend the methods where appropriate, e.g. to change the name to the attrition of tablets.

5.3 MT 41 Dilution stability of aqueous solutions by Mr Thomas Kröhl (4732)
Mr Thomas Kröhl presented the proposals of DAPF concerning MT41 arising from the review of MT methods. It was proposed to change the title and remove the word 'herbicide', to add the scope, to change CIPAC water C to D, to change the test temperature from 20 °C to 30 °C and also to change standing time from 18 hours to 24 hours, to add a test point after 30 min and to add a section for sieving according to MT185.
Comments:
The approach for the temperature has been inconsistent: for suspensibility it had been proposed to move from 30 °C to ambient, but here we are proposing to go to 30 °C. The previous temperature of 20 °C was difficult to maintain for some QC laboratories. The tolerance levels should be added.
Using MT 41 as the name of the method would be confusing as some people would go back to the original method in handbook H. We should consider renaming/numbering MT 41.1.

General comments on numbering system: Changing the numbers can lead to issue in the regulatory system. If a major change is made to the method then the number should be changed.

5.4 MT 172.1 Flowability of WGs by Mr Thomas Kröhl (4733)
DAPF considered MT 172 candidate for renewal. It was proposed to change the title of the method, to extend the scope to all granular materials, to extend to all MT 46 accelerated storage stability schemes and not just 2 weeks at 54 °C and instead of lead to use plastic coated with metal. The proposal was to extend the method with no need for a collaborative trial.
Comments:
Why the different temperatures are needed? Not only the a.i. content might change, but also the physical properties can be affected.

5.5 Washing methods for LNs
5.5.1 CIPAC Washing Method for LN formulations by Mr Olivier Pigeon
Mr Olivier Pigeon presented the preliminary studies on the draft CIPAC wash method. The precision for the incorporated nets was higher than the precision for the coated nets. The denier number plays important role in the repeatability in the washing methods. The variation was not correlated with the number of washes, the type of soap, detergent and the concentration of the detergent. The retention index was calculated on the mean of minimum 3 pieces.

5.5.2 Importance of the choice of detergent agent for the CIPAC LN method by Ms Yumiko Kozuki
Ms Yumiko Kozuki presented what are the advantages and disadvantages of the 'Savon de Marseille' and of the 'IEC detergent A' as a LN washing agent. She also presented a comparison of the detergency power of four washing agents and that of 'Savon de Marseille' and of the 'IEC detergent A'. Washing agent 2 was proposed to be used in the method for the determination of the wash resistence index of LNs.
Comments:
'Savon de Marseille' consists of many differ components other than oleic acid so its pH is high.
'IEC detergent A' designed for use in different waters, its pH is high.
When a dilute solution is used micelles are formed. What is the critical concentration for micelle formation? (for washing we would need to be above this critical concentration). Are they mixed micelles (ionic and non-ionic)? Very small micelles are formed. In soft water ionic surfactants work, but in hard water non-ionic surfactants work to give good emulsification.

5.5.3 Proposal on wash resistance index definition for LN formulations and its determination Mr Martin Rodler

Mr Martin Rodler presented the aspects and parameters where consensus exists concerning the CIPAC wash method and the parameters that need further evaluation and the proposed way forward. Based on the preliminary study on the draft CIPAC wash method, a test method was proposed that could be collaboratively tested under the auspices of CIPAC. The proposed modifications aimed to allow more flexibility on the equipment side; to be more prescriptive to increase clarity what to do and to take into consideration the difference between coated and incorporated nets (heating /replenishing step). For incorporated nets a heating step was proposed to allow equilibration of the a.i. distribution, the replenishment of the a.i. on the surface after the wash step. Provided sensible parameters can be determined, a small scale collaborative trial would be conducted. The aim is to present the results next year in Beijing.

Comments:

What is the appropriate temperature and time at which the net should be stored? In principle it is expected that this temperature depends on the specific product. However it would be beneficial to agree on a temperature for the method that is not product specific. 22 hours and 40 °C was proposed to ensure equilibration but minimising degradation and evaporation.

No data has been seen on heating of LN incorporated except for one product. It was questioned where was it decided that the additional heating /equilibration step is needed, and also why 22 hours at 40°C? It's a precautionary measure to ensure that we have equilibration. There are two possible approaches: We either evaluate each net or come up with a model situation that would ideally cover all cases.

It has to be proved that this is appropriate – the only data we have seen indicates that a much longer time is needed (and possible higher temperatures).

Should we differentiate between incorporated and coated nets? This is only based on what we know for existing products- there may be others that have yet to be developed so for the moment we should reflect only to the existing products.

Additional notes:

CIPAC trials on solution stability and disintegration of ST formulations will be considered by DAPF.

Please let CIPAC know if there are any issues with delivery of handbooks and CD ROMs from Marston so these can be followed up.

6. Replacement of obsolete methods

6.1 Update on Review of MT methods by Mr Ralf Hänel (4734)

Review of MT methods is based on ongoing project from DAPF. The version has been commented upon by JAPAC and ESPAC. On the basis of the comments Mr Hänel has made a proposal that will be discussed by CIPAC. Once the meeting agreed the table will be made published on the website and industry for comment within a timeline.

Announcements from the chairman of CIPAC:

Homage for Ms Teodora Iuraşcu for the 15 years of CIPAC activities as she has resigned from CIPAC due to no longer working in the regulatory side.

Thanks to FAO/WHO and industry for using the CIPAC platform to test the methods.

The open meeting then was closed.

7. Minutes of the 53rd meeting (4707/P)
With the corrections received in writing, the Minutes of the 53rd meeting were unanimously accepted as correct.

8. Secretary's report (4709/P)
Mr László Bura presented the Secretary's report for the period from the 53rd CIPAC meeting held in Sonsonate, El Salvador, covering the attendance, number of trials conducted, the decisions taken concerning the methods and the election of correspondents and members of CIPAC.

9. Discussion of individual compounds

Alpha-cypermethrin
The soap washing method for the determination of remaining active ingredient concentration remains a tentative MT method because of the ongoing general work on LN washing method(s)

Clothianidin
The reversed phase HPLC method (CIPAC/4658) for the determination of clothianidin in TC, WG, SC, GR and SG formulations was accepted as a full CIPAC method.

Deltamethrin (LN extension)
The extension of the scope of CIPAC method 333 (CIPAC/4497) for the determination of the total content of deltamethrin in LN formulations was accepted as a provisional CIPAC method in 2009. The method showed many differences from the original methods – many adaptations were needed to make the method fit the standard CIPAC format. In addition there were some outstanding issues that needed response form the company. The meeting considered that the method should remain provisional.

The method for the determination of wash retention of LN formulations remains a provisional washing MT method because of the ongoing general work on LN washing method(s).

Fluazinam
The reversed phase HPLC method (CIPAC/4686) for the determination of fluazinam in TC and SC formulations was accepted as a tentative CIPAC method in 2009, based on a previous decision on a similar case (acetamiprid in Brno) where the criterion of having minimum 8 valid set of results was not met. In 2010 samples from the same batches were sent to new laboratories for collaborative testing. The meeting agreed that the method should be provisional

Haloxyfop-P-methyl
The chiral normal phase HPLC method (CIPAC/4618) for the determination of haloxyfop-P-methyl in TC and EC formulations was accepted as a full CIPAC method as further information had been provided from the manufacturer of the column that the higher pressures were acceptable for the column. The statement from the manufacturer will need to be incorporated into the method.

Lambda-cyhalothrin
The extension of the scope of CIPAC method 463 (CIPAC/4664) for the determination of the content of lambda cyhalothrin in LN formulations was accepted as a full CIPAC method.

1-methylcyclopropene
The capillary GC method (CIPAC/4669) for the determination of 1-methylcyclopropene in the SmartFresh 3.3% vapour-releasing product was accepted as a provisional CIPAC method in 2009.

Further information about results from another laboratory had been submitted form the company – these data still did not meet the Horwitz criteria but only data from 2 labs. Remains provisional. Need feedback from laboratories conducting this work.

Piperonyl butoxide
The method extension to the capillary GC method (AOAC-CIPAC 32+33+345/TK(M)) (CIPAC/4675) for the determination of piperonyl butoxide in incorporated PE LN formulations was accepted as a provisional CIPAC method in 2009.
The method showed differences from the original methods – many adaptations were needed to make the method fit the standard CIPAC format. The meeting considered that the method should remain provisional.

Triadimefon
The extension of the scope of CIPAC method 352 (CIPAC/4689) for the determination of the content of triadimefon in EC, WG and GR formulations was accepted as a full CIPAC method.

Triadimenol
The extension of the scope of CIPAC method 398 (CIPAC/4687) for the determination of the content of triadimenol in SC, FS and EW formulations was accepted as a full CIPAC method.

Dimoxystrobin
There were many labs removed. But the labs were removed because they were statistically identified as outliers. They have followed the correct procedure and have removed those as necessary. The meeting agreed that method is OK for the TC to be provisional. It's clear that 21 and 23 labs should not be included in the data set. Chairman of DAPA will follow-up to make sure if there is any reason for the stragglers.
The capillary GC method (CIPAC/4710) for the determination of the content of dimoxystrobin in TC, SE and SC formulations was accepted as a provisional CIPAC method.

Flazasulfuron
If all the information raised is taken into consideration and the method adapted then they could perhaps go to full scale trial? Meeting agreed that ESPAC should discuss with the company and see if they can develop something further (i.e. recalculated the result without the internal standard) and if needed conduct a small scale trial. Then, if all OK, go to full-scale trial to present at the next year. Timelines are tight.
Why use acetic acid to buffer a compound that has a pKA lower than acetic acid?
With the submitted data set it was not possible to make a reliable recommendation.
It was proposed to have further consideration within ESPAC.

Fluazinam
The reversed phase HPLC method (CIPAC/4727) for the determination of fluazinam in TC and SC formulations was accepted as a provisional CIPAC method.

Flumioxazin
It was recommended to go for a full scale trial.

Fosthiazate
With the submitted data set it was not possible to make a reliable recommendation. It was proposed to have further consideration within ESPAC, however if ESPAC makes the recommendation to go for a full scale trial, this can be conducted.

Pyperonil butoxide
It was recommended to go for a full scale trial. If differences from the current method, which includes also the impurity determination, are high, further consideration is needed with DAPA.

Permethrin
The extension of the scope of CIPAC method 331/TC/M/3 (CIPAC/4503) for the determination of the content of permethrin in EC formulations was accepted as a provisional CIPAC method.

Spinosad
The extension of the scope of CIPAC method 636/TC/M/3 for the determination of the content of spinosad in EC formulations was accepted as a provisional CIPAC method, with a footnote that mineral oil is not causing clogging of the column.

Clothianidin
The extension of the scope of the HPLC method (CIPAC/4658) for the determination of clothianidin in FS and WS formulations (CIPAC/4692) was accepted as a provisional CIPAC method.

Total hardness of water
It was recommended to go for a full scale trial, but to include in the trial a standardised water, too.
It was recommended to use it as an in-house method and also to keep the existing method, otherwise we will have to rely on two commercially available products.

Friability of tablets
It was decided to change the title to 'Attriton of tablets'.

MT 41 Dilution stability of aqueous solutions
It was accepted to change the title and remove the word 'herbicide'. The proposed changes to method MT 41 (CIPAC/4732) were accepted but to renumber it to 41.1. (to change the temperature to 30±2^{o}C, CIPAC water C to D, to add the observation point at 30 min)

Flowability of WGs
I was asked if the intention is to extend the method to all kinds of granules without a trial? It was clarified that this was the case. Changes proposed to method MT 172.1 (CIPAC/4733) were accepted in this case, in addition it was accepted to extend the method to all accelerated storage schemes according to MT 46.3 with no need for collaborative trial for this specific circumstances only.

CIPAC washing method for LN formulations
It was decided to go for a small scale trial on the lines presented by Mr Martin Rodler.

10. Matters related to FAO and WHO specifications
Mr Markus Müller noted that there is no harmonised way to do the accelerated storage test for LNs. Mr Oliver Pigeon has already begun to draw up a proposal, how to prepare an extension of MT 46.3. The proposal will be discussed by ESPAC, DAPF and JAPAC.

FAO and WHO are updating the old specifications under the old procedure for compounds that are still in use – these are referred back to CIPAC handbooks that are out of print. Is there any way to resolve this? CIPAC will discuss this and come up with a resolution that will be implemented as soon as possible.

Mr Morteza Zaim proposed to change the title of agenda point 10 to 'Matters related to JMPS'. This was accepted.

MT for acidity. Is MT 191 to supersede MT 31? They have seen some wide discrepancies in the results obtained with MT 191 and the old method? They would like some feedback from others on their experiences. It is not foreseen that MT 191 superseded MT 31, however this will be taken into consideration when the review is underway.

11. Date and place of next meeting

The venue of the next meeting in 2011 will be in Beijing, Republic of China. The proposed dates are from 8th – 16th June, however this is not yet fixed.

12. Any other business

None

13. Closure

The Chairman thanked the organising team and the participants for their contribution to the success of the meeting and closed the meeting.

Sonia Tessier	László Bura
Assist. Secretary	Secretary