

**AG Name: Aquatic Macrophyte Ecotoxicology Group (AMEG)**

**Submitted by: Gertie Arts, chair of AMEG**

**Date: 27 October 2010**

**Council/Board Liaison: World Council**

**Reporting period: 2009 - 2010**

- 1. Organization:** The organization is described in our AMEG SOP of the 1<sup>st</sup> of July 2009 (uploaded on our communities website). The Steering Committee includes 12 members evenly distributed amongst the three stakeholder groups. The chair and co-chair represent different geographical units. No significant changes to the group have occurred during the reporting period.

## **2. Activities Summary**

Paragraphs 2.1 and 2.2 describe the follow-up activities of two working groups which were initiated during the 2008 AMRAP workshop (=Aquatic Macrophyte Risk Assessment of Pesticides) and are now under the umbrella of AMEG. Paragraph 2.3 describes the meetings which were attended by AMEG SC members and where AMEG was presented.

### **2.1 Species Sensitivity Distribution Working Group**

On the 13th of Dec 2009 the project of the SSD WG was officially launched by a signed confidentiality agreement agreed by all interested parties. 13 stakeholders (academia, contract laboratories, consultancies, industry, research facilities) are involved. The project is funded by 7 companies and the collected data are being examined by an environmental consultant. The aim of the project is to generate a better understanding and potential guidelines for use of species sensitivity distributions (SSDs) with aquatic macrophytes as a higher tier tool in risk assessments.

The project steps include:

- 1) Tasks 1 and 2 of the project are in progress: 1) Evaluation of the macrophyte data in the available database as well as contribution of additional macrophyte data by stakeholders (confidential and publicly available data) and 2) The SSD WG has discussed via audio (01/02/10) proposed criteria for evaluation of data for the macrophyte SSD project, and a proposed list of fields for the database.
- 2) The progress-to-date of the project of the SSD work group has been presented during SETAC Seville 2010 in a poster corner presentation on the.
- 3) Future audios have not been scheduled but they will take place if needed. In the audio of May 7<sup>th</sup> 2010 the group discussed preliminary findings from 4 substances and the poster presentation for SETAC Seville in May 2010.
- 4) The project is scheduled for completion in October 2010. As there are still 4 to 5 more substances to be considered for SSD analysis, there may be at least one month extension to the previous deadline, pending on remaining activities.

5) During the Ag Chem Forum in Lyon on Sep 8<sup>th</sup> the AMRAP SSD WG was invited to give a presentation in Stream 3 on Environmental Safety: Ecotox and Fate. All participants interested in ecotoxicology were very active asking questions about the project, making suggestions and recommendations too. The following topics can be highlighted as most important for our project:

- a) Include uncertainties identified during the exercise which have particular regulatory interest.
- b) It would be good also to show in more detail where *Myriophyllum* stands within these SSDs and give direct comparison with *Lemna* and the other macrophytes.
- c) Based on our assessment it would be a good opportunity to test the safety factor of 10 and how protective it is.
- d) EFSA's representatives expressed their interest to review and comment on the outcome of this work - they would do so once we have addressed also item (a) (above) as this is most important from the regulatory point of view. They are also willing to incorporate any recommendations from this project in the EU Aquatic Guidance document which is under revision at the moment by EFSA's WGs.

6) Next scientific review will take place during the SETAC Portland meeting mid November 2010, where Jeff Giddings (CSI and Project Coordinator) will give a platform presentation on the current work / findings in the session for Aquatic macrophytes.

## **2.2 *Myriophyllum* Working Group**

In autumn 2009 a laboratory test protocol for *Myriophyllum* species was pre-tested by 11 research organizations, contract laboratories and industry laboratories. The data have been evaluated and the preliminary results of the *Myriophyllum* pre-test have been presented during the AMEG AG meeting in Seville. The results will help to define the final ring-test, which is scheduled for autumn 2010.

## **2.3 Meetings and presentations (in chronological order):**

- The inaugural meeting of AMEG was held in Göteborg, June 2009.
- The second meeting of AMEG was held during the SETAC North America Meeting in New Orleans, November 20<sup>th</sup> 2009; AMEG was introduced and the protocol for the *Myriophyllum* pre-test was presented. Special guests were Kris Garber and Sujatha Sankula from US EPA, OPP, EFED. They presented an "Overview of the Office of Pesticide Programs Risk Assessment Methodology for Aquatic Plants".
- The objectives and plans of AMEG were introduced during the SETAC Laurentian Chapter meeting in Ottawa, Canada, in June 2009.
- The objectives and plans of AMEG were introduced during the SETAC German Language branch in Freising-Weihenstephan, October 2009.
- The objectives and plans of AMEG were introduced during the SETAC North America Meeting in New Orleans, November 2009.
- AMEG was announced via a poster during the SETAC Africa meeting in Kampala (Uganda), November 2009.

- AMEG circulates a newsletter by email to announce new developments and upcoming SETAC meetings where AMEG has organised discussions and sessions.
- AMEG was presented during the Robson Annual meeting organised by the Aquatic Plant Management Group of the Centre for Ecology and Hydrology, Wallingford, UK to exchange information relating to the ecology and management of aquatic and riparian plants. This year, the meeting was held in St. Ives, Cambridgeshire, UK on the 9<sup>th</sup> and 10<sup>th</sup> February, 2010 and was attended by representatives from UK & Dutch government authorities and research institutes, academic institutions, flood defence and waterway management organizations, nature conservation organizations and independent consultancies. Over 25 presentations covered a range of topics focusing on the current challenges in the management of aquatic vegetation, especially strategies for non-native species.
- AMEG was presented during the AMEG presentation at the 1st SETAC Vietnam International Conference on Environmental Pollution, Restoration and Management, 1-5 March, Ho Chi Minh City, Vietnam. This conference followed the 1st VN-US workshop on Ecosystem Assessment, Management, and Restoration, which was held in Hanoi in 2004. The goal of the conference was to bring environmental scientists from the developed and developing countries together to exchange experiences and to discuss existing environmental issues. This conference was designed to initiate and to further strengthen ongoing collaborations between environmental scientists from all over the world. The activity of the SETAC AMEG group was presented including the focus on future AMEG activities and topics such as the use of macrophytes for bioremediation. Overall, there seemed to be little macrophyte research presented at the conference itself, but the interest in the AMEG activity was quite high. The organisation of trainings and workshops on SETAC Asia-Pacific meetings concerning macrophyte ecotoxicology and bioremediation could therefore be very fruitful.
- The ideas and future plans of AMEG were published in a paper in ESPR (online publication 1 March 2010): Gertie Arts, Jo Davies, Michael Dobbs, Peter Ebke, Mark Hanson, Udo Hommen, Katja Knauer, Stefania Loutseti, Lorraine Maltby, Silvia Mohr, Angela Poovey and Véronique Poulsen (2010). AMEG: the new SETAC advisory group on aquatic macrophyte ecotoxicology. *Environ Sci Pollut Res* 17:820–823.
- AMEG organised a poster corner during the SETAC annual meeting in Seville, Spain in May 2010. A summary of the session has been published in the GLOBE: Gertie Arts, Jo Davies, Michael Dobbs, Peter Ebke, Mark Hanson, Udo Hommen, Katja Knauer, Stefania Loutseti, Lorraine Maltby, Silvia Mohr, Angela Poovey and Véronique Poulsen (2010). “Aquatic Macrophyte Ecotoxicology and Risk Assessment: State of the Art”. SETAC GLOBE 11(10).
- During the SETAC Europe annual meeting in Seville in May 2010 an AMEG AG meeting was organised for all AG members and interested participants of the SETAC conference. This meeting included presentations on *Myriophyllum* testing and discussions.

- Ritzenthaler, R., Dören, L., Wagner, E., Ebke, K. P. (2010): Risk assessment of chemicals: a pH-measuring system to monitor the effects of pollutants on aquatic macrophytes. SETAC Europe annual meeting, Seville, Spain.
- A number of macrophyte related platforms were presented during the SETAC GLB meeting, September 2010 at UBA in Dessau.

#### **Posters:**

Schhott, J., Langer, M., Friede, K., Mohr, S.: Sind zusätzliche Makrophytentests für eine sichere Risikobewertung von Auxinen und Fettsäuresynthesen-Hemmern notwendig?

Feige, D., Dören, L., Ebke, K. P.: *Myriophyllum aquaticum* in der Risikobewertung von Chemikalien: Vergleich der Sensitivitäten emers und submers vorkultivierter Pflanzen gegenüber Atrazin.

Binder, M., Ebke, K. P., Düring R.- A.: Kombinationswirkung der drei Pharmazeutika Carbamazepin, Diclofenac und Ibuprofen auf die Wasserminze (*Mentha aquatica*).

#### **Platform:**

Riedl, J. Arts, G., Heilmeier, H. Altenburger, R. Schmitt-Jansen, M.: Metabolomics using aquatic macrophytes in ecotoxicology.

### **Future Plans**

- During the SETAC NA 2010 meeting in Portland a session will be organised on the topic of “Why macrophytes matter”.
- During the SETAC NA meeting in Portland an AMEG AG meeting will be organised.
- Development of training and workshops in macrophyte ecotoxicology, macrophyte risk assessment and bioremediation.
- Participation at the start up workshop organised by UBA for a ring-test using a sediment-free method with *Myriophyllum spicatum* using saccharose medium as organic carbon source under sterile conditions, 18/19 Oct.2010. 10 laboratories participated (AMEG members Fraunhofer IME and Mesocosm GmbH)
- Involve other GU.

### **Membership Communications**

We would prefer to use the listserv for our emailing newsletter, but up to now only a limited part of the interested scientists have registered officially via the SETAC website, despite

formal questions from the SC. The question from AMEG SC to the World Council is: how can we organize / improve this?

### **Issues/Problems**

- As AG we can not check directly who is AMEG member and how many official members we have at any moment. Is it possible to make a direct link to this information ?
- We have some recommendations for further improvement of the web presence of the Advisory Groups. See also the email of Udo Hommen sent to SETAC by the 1<sup>st</sup> of March. In summary, AMEG would prefer to have a website such as [www.setac.org/AMEG](http://www.setac.org/AMEG) which could be managed by the SC and which is more flexible.
- The problem raised above: how can we improve the communication via the listserv and encourage participants to register as an official member of the AG?

### **Current Steering Committee**

#### ***Academia:***

Mark Hanson, University of Manitoba, CA

Lorraine Maltby, University of Sheffield, UK,

Udo Hommen, Fraunhofer IME, DE

Gertie Arts, Alterra WUR, NL,

(Chair)

#### ***Business:***

Jo Davies, Syngenta, UK

Peter Ebke, MESOCOSM GmbH, DE

Stefania Loutseti, DuPont, GR

Michael Dobbs, BayerCropscience, US

#### ***Government:***

Véronique Poulsen, AFSSA, FR

Angela Poovey, US Army Corps of Engineers, US

(Co-chair)

Katja Knauer, BLW, CH

Silvia Mohr, UBA, DE

After two years (that will be in 2011) each SC member has to be elected again or replaced by another scientist by the vote of the AMEG members.

AMEG is a Global Advisory Group

**No. active members:** 30 as a rough estimate (Steering Committee and Two Working Groups)

***Total membership:*** officially: 72 (via listserv, august 2010)  
unofficially (number of accounts in emailing list): about 100  
Both lists do not match.