AG Name: Aquatic Macrophyte Ecotoxicology Group (AMEG)

Submitted by: Gertie Arts, chair of AMEG

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Council/Board Liaison: World Council

Reporting period: 2010 – 2011

1. **Organization:** The organization of AMEG is described in the AMEG SOP of the 1st of July 2009 (uploaded on the communities website). According to our rules of operation a new Steering Committee was elected in May this year. A request for candidates was circulated by two SC members (Udo Hommen and Mark Hanson) and the SETAC Pensacola office organized the on-line elections. Three SC members stepped down and 16 candidates stepped forward including 7 new candidates. After the elections and since 5 May 2011 the new Steering Committee includes 11 members: four from Academia and Business each and three from Government. Because only three candidates from Government had stepped forward, the SC includes 11 members in total (instead of the former 12). During the meeting of the new Steering Committee in Milan in May 2011, the chair and co-chair were chosen by the SC.
   The elected SC is listed below:

   Government – Katja Knauer (BLW, CH), Silvia Mohr (UBA, DE), Véronique Poulsen (Anses, FR)

   Business – Jo Davies (Syngenta, UK), Margit Dollinger (BayerCropscience, DE), Jeff Giddings (CSI, US), Stephania Loutseti (DuPont, GR)

   Academia – Mark Hanson (University of Manitoba, CA, co-chair), Udo Hommen Fraunhofer, DE), Gertie Arts (Alterra, NL, chair), Chris Wilson (University of Florida, US)

2. **Activities Summary**

The AMEG Advisory Group has been very active during its first two years with sessions and group meetings at the SETAC North America and SETAC Europe meetings and presentations at other workshops and conferences around the globe. The working groups (*Myriophyllum* WG and SSD WG) have also been very active. These working groups developed from the workshop on Aquatic Macrophyte Risk Assessment for Pesticides (AMRAP) in 2008 supported by the European Society of Environmental Toxicology and Chemistry (SETAC-Europe). Spin-offs from AMRAP, including the working groups and their activities, were later incorporated into the activities of the SETAC Aquatic Macrophyte Ecotoxicology Group (AMEG).
Paragraphs 2.1 and 2.2 describe the follow-up activities of the two working groups. Paragraph 2.3 describes the meetings that were attended by AMEG SC members and where AMEG work was presented in the period 2010-211.

2.1 Species Sensitivity Distribution Working Group (SSD WG)

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. Thirteen stakeholders (academia, contract laboratories, consultancies, industry and 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 of the sensitivity of standard test species to herbicides and fungicides using species sensitivity distributions (SSDs) with aquatic macrophytes as a higher tier tool in risk assessments.

The results of the project have been presented in the macrophyte session organized as part of the SETAC North America Annual meeting in Portland, 7 -11 November 2010 and as part of the SETAC Europe meeting in Milan, 15-19 May 2011. The platform presentations were titled:

Giddings, J., 2010. Analysis of Herbicide Toxicity to Aquatic Macrophytes Based on Species Sensitivity Distributions. A project of the SETAC Aquatic Macrophyte Ecotoxicology Group (AMEG). On behalf of the AMEG SSD Workgroup. Platform presentation SETAC North-America.

Giddings, J., S. Loutseti, G. Arts, N. Cedergreen, H. Christl, J. Davies, M. Dobbs, M. Hanson, U. Hommen, J. Honegger, P. Manson, G. Meregalli, G. Weyman, 2011. Relative Sensitivity of Macrophyte and Algal Species to Herbicides and Fungicides using Species Sensitivity Distributions. Platform presentation SETAC Milan.

At the end of September 2011 the SSD WG completed their report titled "The Relative Sensitivity of Macrophyte and Algal Species to Herbicides and Fungicides: An Analysis Using Species Sensitivity Distributions" by J.M. Giddings. This report was submitted to the EFSA (European Food Safety Authority) in order to be considered in the update of the Aquatic Guidance document for the pesticide registration in Europe.

At the moment the WG is working on a paper for IEAM in which the main results of the project are described and discussed.

2.2 *Myriophyllum* Working Group (WG)

The aim of the *Myriophyllum* WG is to develop a test guideline for *Myriophyllum* sp. to be used in the pesticide registration process. The submerged, dicotyledonous species *Myriophyllum* was selected by AMRAP participants as a suitable test species in light of prior experience and its known sensitivity to some herbicide chemistries.

In 2011, a ring-test was organized by the *Myriophyllum* WG. In total, 14 laboratories participated with the aim of testing an agreed protocol for *Myriophyllum spicatum* and *Myriophyllum aquaticum*. Also, at the start of 2011, the *Myriophyllum* sp. test was submitted to the OECD for consideration and approval as an OECD test guideline. The ring test results are expected to be available by the end of 2011 or early 2012. The final draft test guideline is expected in June 2012.

The results of the *Myriophyllum* pre-test were presented during the open AMEG AG meetings in Portland and Milan:

Dohmen, P., G. Arts, E. Bruns, N. Cedergreen, J. Davies, M.Dobbs, U. Feiler, M. Hanson, U. Hommen, K. Knauer, J. Kubitza, D. Maletzki, L. Maltby, A. Poovey, 2010. *Myriophyllum sp*. Test Methodology for a Rooted Aquatic Macrophyte. AMRAP – workgroup: method development. Platform presentation Portland.

Dohmen, P., 2011. First results of an inter laboratory ring test with the rooted aquatic macrophyte *Myriophyllum* sp.in a sediment containing test system. Platform presentation SETAC Milan.

2.3 Meetings and presentations:

- Several times a year AMEG circulates a newsletter to their members via the SETAC listserver to announce new developments and upcoming SETAC meetings where AMEG has organized discussions and sessions.
- AMEG organized a session during the SETAC North America Annual meeting in Portland, 7-11 November 2010 including nine platform presentations presenting topics in the field of aquatic macrophyte ecology and ecotoxicology. The session was reported in the GLOBE: Why Macrophytes Matter - Session Summary SETAC NA meeting 2010, Portland. GLOBE 2011 Volume 12(1) (http://www.setac.org/globe/2011/january/macrophytes.html)
- AMEG organized a poster corner during the SETAC annual meeting in Milan, Italy in May 2010. A summary of this session has been published in the GLOBE: Silvia Mohr, Jo Davies and Chris Wilson, New Developments from SETAC Milan in Aquatic Macrophyte Testing, Higher Tier Risk Assessment and Ecotoxicology. GLOBE 2011, 12 (9) http://www.setac.org/globe/2011/september/september-15-2011.
- During the SETAC Europe annual meeting in Milan, 15-19 May 2011 an AMEG AG meeting was organized for all AG members and interested participants of the SETAC conference. This meeting included a presentation about AMEG activities and presentations about *Myriophyllum* testing and discussions.
- During the SETAC North America Annual meeting in Portland, 7-11 November 2010 AMEG organized an AG meeting for all AG members and interested participants of the SETAC conference. This meeting included a macrophyte presentation and discussions.
- A number of macrophyte related platform presentations were initiated during the SETAC GLB meeting, September 2011 in Landau (DE).
- A presentation was performed on the topic of Aquatic Macrophyte Risk Assessment during a modelling workshop in Monheim, DE: Arts, G.H.P., Davies, J., Dollinger, M., Giddings, J., Hanson, M., Hommen, U., Knauer, K., Loutseti, S., 2011. Macrophytes in Environmental Risk Assessment of Plant Protection Products: new insights from AMEG.
- A platform presentation was given during the PEER/EurAqua workshop on pesticides held in Montpellier, 26 – 28 October 2011 titled Arts, G.H.P., Davies, J., Dollinger, M., Giddings, J., Hanson, M., Hommen, U., Knauer, K., Loutseti, S., Mohr, S., 2011. Aquatic Macrophyte Risk Assessment: Current Status and Future Challenges.

Future Plans

- During the SETAC World congress in Berlin a session will be organized on the topic of "Plants and chemicals in the environment: risk assessment, pest management and phytoremediation". AMEG's intention is to organize this session broader than ecotoxicology only. It hopefully interests colleagues from other Geographical Units as well.
- During the SETAC NA meeting in Boston an AMEG AG and an AMEG SC meeting have been organized.
- Development of training and workshops in macrophyte ecotoxicology, macrophyte risk assessment and bioremediation.
- Involve other GU (ongoing).
- Initiate new working groups e.g. on topics such as pest management, phytoremediation, global regulations, marine plants, retrospective risk assessments, guidelines for emergent plants.
- Enhance student involvement.
- Identify other research/data interpretation needs from the environmental management and research communities.
- Improvement of AMEG website.

Membership Communications

Membership communications are organized by regular circulating an AMEG Newsletter and by regular SC and AG meetings during the annual SETAC conferences.

Number of active members: 30 as a rough estimate (Steering Committee and Two Working Groups)

Total membership: officially 122 (via listserv, October 2011)