

Professor Hans Blanck

Selected publications

Thesis

Blanck H. 1983. On the Impact of Long-chained Aliphatic Amines on Photosynthesis and Algal Growth in Ecotoxicological Test Systems. Ph. D. Thesis. Department of Plant Physiology, Göteborg University, Sweden. ISBN 91-86022-20-2.

First paper

Egnéus H. & Blanck H. 1977. The effect of a quaternary amine (Aliquat 336) on growth and photosynthesis of the green alga *Chlorella emersonii* and the effect on photosynthesis in isolated spinach chloroplasts. *Physiol. Plant.* 41:73-78

Ecotoxicological methods

Blanck H. Dave G. & Gustafsson K. 1978. An annotated literature survey of methods for the determination of effects and fate of pollutants in aquatic environments. SNV PM 1050. National Swedish Environment Protection Board, Solna. 398 pp.

Blanck H. Wallin G. & Wängberg S-Å. 1984. Species-dependent variation in algal sensitivity to chemical compounds. *Ecotox. Environ. Safety* 8:339-351

Blanck H. & Wängberg S-Å. 1988. The validity of an ecotoxicological test system. Short-term and long-term effects of arsenate on marine periphyton communities in laboratory systems. *Can J Fish Aquat Sci* 45(10):1807- 1815

Dahl B & Blanck H, 1996. Use of sand-living microalgal communities (epipsammon) in ecotoxicological testing. *Mar. Ecol Progr. Ser.* 144:163-173

Porsbring T, Arrhenius Å, Backhaus T, Kuylenstierna M, Scholze M, Blanck H 2007. The SWIFT periphyton test for high-capacity assessments of toxicant effects on microalgal community development. *J Exp Marine Biology* 349:299-312

Early SSDs (Species Sensitivity Distributions)

Blanck H. 1984. Species dependent variation among aquatic organisms in their sensitivity to chemicals. *Ecol. Bull.* 36:107-119

Blanck H. Wallin G. & Wängberg S-Å. 1984. Species-dependent variation in algal sensitivity to chemical compounds. *Ecotox. Environ. Safety* 8:339-351

Wängberg, S-Å and Blanck, H. 1988. Multivariate patterns of algal sensitivity to chemicals in relation to phylogeny. *Ecotoxicol. Environ. Safety.* 16:72-82

Pollution-induced community tolerance

Blanck H. & Wängberg S-Å. 1988. Induced community tolerance in marine periphyton established under arsenate stress. *Can J Fish Aquat Sci* 45(10):1816-1819

Blanck H, Wängberg S-Å. & Molander S. 1988. Pollution- induced community tolerance - a new ecotoxicological tool. *Functional Testing of Aquatic Biota for Estimating Hazards of Chemicals*. ASTM STP 988. J Cairns Jr and J R Pratt (eds) American Society for Testing and Materials, Philadelphia pp 219-230.

Blanck, H. and Wängberg S-Å. 1991. Pattern of co-tolerance in marine periphyton communities established under arsenate stress. *Aquatic Toxicology* 21:1-14.

Dahl B & Blanck H. 1996. Pollution-Induced Community Tolerance (PICT) in periphyton communities established under tri-n-butyltin (TBT) stress in marine microcosms. *Aquatic Toxicology* 34:305-325

Blanck H & Dahl B. 1996. Pollution-induced community tolerance (PICT) in marine periphyton in a gradient of tri-n-butyltin contamination *Aquatic Toxicology* 35:59-77

Blanck H & Dahl B 1998. Recovery of marine periphyton communities around a Swedish marina after the ban of TBT use in antifouling paint. *Marine Pollution Bulletin* 36(6): 437-442

Blanck H. 2002. Critical review of procedures and approaches used for assessing Pollution-induced community tolerance (PICT) in biotic communities. *Human Ecol Risk Assessm* 8(5):1003-1034

Blanck H, Eriksson KM, Grönvall F, Dahl B, Martinez Guijarro K, Birgersson G, Kylin H. 2009. A retrospective analysis of contamination and periphyton PICT patterns for the antifoulant irgarol 1051, around a small marina on the Swedish west coast. *Mar Poll Bull* 58:230-237

Advanced Hazard Assessment

Blanck H, Holmgren K, Landner L, Norin H, Notini M, Rosemarin A, Sundelin B. 1989. Advanced hazard assessment of arsenic in the Swedish environment. *In* *Chemicals in the Aquatic Environment - Advanced Hazard Assessment*. Landner L (ed.). Springer Series on Environmental Management. Springer Verlag , Berlin Heidelberg. pp. 256-328.

Sediment Ecotoxicology

Dahllöf I, Blanck H & Hall P. 1999. Short-term effects of tri-n-butyl tin on marine sediment samples using nutrient fluxes as effect indicators. *Environmental Toxicology and Chemistry* 18(5):850-857

Dahllöf I, Blanck H, Hall POJ & Molander S 1999. Long-term effects of tri-n-butyl tin on the function of a marine sediment system using nutrient and oxygen fluxes as effect indicators. *Marine Ecology Progress Series* 188:1-11

Dahllöf I, Agrenius S, Blanck H, Hall POJ, Magnusson K & Molander S 2001. The effect of TBT on the structure of a marine sediment conity – a boxcosm study. *Marine Pollution Bulletin* 42(8):689-695.

Karle IM, Agrenius S, Molander S, Magnusson K, Blanck H, Dahl B, Hall P, Dahllöf I. 2007. Verification of a benthic boxcosm system with potential of extrapolating experimental results to the field. *J Exp Mar Biol Ecol* 353:265-278

Antifouling

Dahl B & Blanck H. 1996. Toxic effects of the antifouling agent Irgarol 1051 on marine periphyton communities in coastal water microcosms. *Marine Pollution Bulletin* 32(4):342-350

Dahllöf I, Blanck H & Hall P. 1999. Short-term effects of tri-n-butyl tin on marine sediment samples using nutrient fluxes as effect indicators. *Environmental Toxicology and Chemistry* 18(5):850-857

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Shtykova L, Fant C, Handa P, Berntsson K, Larsson A, Blanck H, Simonsson R, Nydén M, Ingelsten Härelind H. 2009. Adsorption of antifouling booster biocides on metal oxide nanoparticles: Effect of different metal oxides and solvents. *Progr. Organic Coatings* 64:20-26

Dahlbäck B, Blanck H, Nydén M 2010. The challenge to find new sustainable antifouling approaches for shipping. *Coastal Marine Science* (in press)

Zinc

Paulsson M, Nyström B & Blanck H 2000. Long-term toxicity of zinc to bacteria and algae in periphyton communities from the river Göta älv, based on a microcosm study. *Aquatic toxicology*, 47:243-257

Paulsson M, Månsson V & Blanck H 2002. Effects of zinc on the phosphorus availability to periphyton from the river Göta älv. *Aquatic Toxicology*, 56(2):103-113

Blanck H, Admiraal W, Cleven RFMJ, Guasch H, van den Hoop MAGT, Ivorra N, Nyström B, Paulsson M, Petterson RP, Sabater S & Tubbing GMJ. 2003. Variability in zinc tolerance, measured as incorporation of radiolabelled carbon dioxide and thymidine, in periphyton communities sampled from 15 European river stretches. *Arch Environ Contam Toxicol* 44(1):17-29

Pharmaceuticals

Backhaus T, Sumpter J, Blanck H 2008. On the ecotoxicology of pharmaceutical mixtures. *In* "Pharmaceuticals in the Environment" ed. by K. Kümmerer, 3rd edition, Springer publishers, ISBN 978-3-540-74663-8,

Porsbring T, Backhaus T, Tjellström H & Blanck H 2009. Toxicity of the pharmaceutical clotrimazole to marine microalgal communities. *Aquatic Toxicology* 91(3):203-211

Mixture Ecotoxicology

Faust M, Altenburger R, Backhaus T, Blanck H, Boedeker W, Gramatica P, Hamer V, Scholze M, Vighi M & Grimme LH 2001. Predicting the joint algal toxicity of multi-component s-triazine mixtures at low-effect concentrations of individual toxicants. *Aquatic toxicology* 56(1):13-32

Faust M, Altenburger R, Backhaus T, Blanck H, Boedeker W, Gramatica P, Hamer V, Scholze M, Vighi M & Grimme LH 2003. Joint algal toxicity to 16 dissimilarly acting chemicals is predictable by the concept of independent action. *Aquatic toxicology* 63:43-63

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Backhaus H, Arrhenius Å, Blanck H 2004. The toxicity of a mixture of dissimilarly acting substances to natural algal communities: predictive power and limitations of Independent Action and Concentration Addition. *Environmental Science and Technology* 38(23):6363-6370

Arrhenius Å, Backhaus T, Grönvall F, Junghans M, Scholze M, Blanck H 2005. Effects of three antifouling agents on algal communities and algal reproduction: Mixture toxicity studies with TBT, Irgarol, and Sea-Nine, *Archives of Environmental Contamination and Toxicology* 49:1-13

Porsbring T, Backhaus T, Johansson P, Kuylenstierna M, Blanck H. 2010. Mixture toxicity from PSII inhibitors on microalgal community succession is predictable by Concentration Addition. *Environ Toxicol & Chem* (in press)

Ecotoxicogenomics

Eriksson K.M., Clarke A., Franzen L.-G., Kuylenstierna M, Martinez K. and Blanck H. 2009. Community level analysis of the *psbA* gene sequences and irgarol tolerance in marine periphyton. *Appl Environ Microbiol* 75(4):897-906

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