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AQUAREF intercomparison passive sampling exercise: monitoring of pesticides in surface water

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The Water Framework Directive (WFD) is probably the most significant legislation in the water field that has been introduced for many years. Several publications pointed out that passive samplers (PSs) can be valuable tools as complementary method in monitoring water quality in the context of the WFD. However, there is still a lack of quality assurance and control (QA/QC) procedures that demonstrate the reliability and the comparability of results obtained by passive sampling. Up to date, very few in situ intercomparison exercises on PSs have been performed until now. To our knowledge only three pan-European or international intercomparison studies have been organized *in situ* since 2007 (ICES Passive sampling survey and intercalibration, AQUAREF, IPSIC and NORMAN). Among them, the AQUAREF intercomparison exercise was conducted on several passive samplers for priority pollutants (PAH, pesticides and metals) in surface and coastal waters. Presentation of this exercise and first outputs have been already published (Miège et al., 2012) and showed that in spite of variety of expert laboratories, strategies and tools, we observed a low and satisfactory uncertainty on the estimation of mean TWA concentrations with passive sampling. The objective of this poster is to present specific results obtained during this interlaboratory exercise for pesticide sampling. Two trials were conducted during 14 days in the Charente River (at Beillant, France) and in a marine site, the Thau Lagoon (Hérault, France) with the participation of 11 laboratories at Beillant and 8 laboratories at Thau. Nine pesticides (acetochlor, S-metolachlor, 5 WFD priority substances, i.e., alachlor, atrazine, diuron, isoproturon, simazine and two atrazine metabolites, i.e. desethylatrazine, deisopropylatrazine) were considered. Among the tested PSs, we found Polar Organic Chemical Integrative Sampler (POCIS, pharmaceutical & pesticide configuration), polar Chemcatcher (with SDB-XC, SDB-RPS or C18 phases), silicon rod and silicon sheet, speedisk hydrophylic DVB06, ... We will present here and discuss results on i) Comparison of pesticide quantities accumulated

per surface of passive sampler exposed ii) Mean and variability of Time Weighted Average (TWA) water concentrations of pesticides obtained with passive samplers and comparison with water concentration from grab samples iii) Pesticide fingerprints in the various passive samplers compared with those in grab samples