【他誌掲載論文要旨】

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Title: Studies on the behavior and ecotoxicity of pesticides and their transformation products in a river

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Summary: To clarify the properties of pesticide transformation products (TPs) for which the risk to aquatic organisms should be evaluated, I monitored the concentrations of paddy pesticides and their TPs in the Sakura River, Japan, during the rice-growing season in 2007–2010. I also conducted algal growth inhibition tests of herbicides and their TPs using a diatom and a green alga and acute toxicity tests of insecticides and their TPs using a caddisfly and a daphnid. Moreover, on the basis of the results of pesticide monitoring and toxicity tests, I attempted to evaluate the risk of these compounds to the riverine organisms as well as the risk of mixtures of insecticides and their TPs for caddisflies and cladocerans. The TPs were detected in the river water depending on the half-lives of the parent compounds and of the TPs in water and soil. The toxicities of the parent compound and its TPs may be related to their hydrophobicities and chemical structures. Some toxic and persistent TPs that formed rapidly in water and soil posed a risk to the organisms over a long period. The physicochemical properties and chemical structures of a parent compound and its TPs can be key factors in evaluating the pesticide TP risk to aquatic organisms in rivers.

注：本論文の著者は、論文掲載時に FAMIC から食品安全委員会事務局へ出向中であった。