

SETAC North America 35th Annual Meeting

Session Track: Aquatic Toxicology and Ecology

Session Title: What do we know about the ecological risk of Consumer and Personal Care Product ingredients?

Title: Effects of the anti-microbial, triclocarban, on the reproductive function and ovarian transcriptome of the fathead minnow (*Pimephales promelas*).

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Triclocarban (TCC) is a widely used antimicrobial agent that is routinely detected in surface waters. The present study was designed to examine TCC's efficacy and mode of action as a reproductive toxicant in fish. Reproductively mature *Pimephales promelas* were continuously exposed to either 1 or 5 µg TCC/L, 0.5 µg 17β-trenbolone (TRB)/L or a mixture (MIX) of 5 µg TCC and 0.5 µg TRB/L for 22 d and a variety of reproductive and endocrine-related endpoints were examined. Cumulative fecundity was significantly reduced in fathead minnows exposed to TRB, MIX or 5 µg TCC/L. Exposure to 1 µg TCC/L had no effect on reproduction. In general both TRB and MIX treatments caused similar physiological effects, evoking significant reductions in female plasma vitellogenin, estradiol, and testosterone, and significant increases in male plasma estradiol. However, effects of the MIX treatment on the ovarian transcriptome had little resemblance to those elicited by either TRB or TCC (5 µg/L) only. Overall, TCC was reproductively toxic to fish at concentrations at or near those that have been measured in surface water. There was little evidence that TCC elicits reproductive toxicity through a specific mode of endocrine or reproductive action, nor that it could augment the androgenic effects of TRB. Nonetheless, transcriptomic results pointed toward modulation of certain signaling pathways known to cross-talk with steroid hormone signaling. *The contents of abstract neither constitute nor necessarily reflect US EPA policy.*