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ENDOCRINE TOXICITY OF TRENBOLONE DURING LARVAL DEVELOPMENT OF XENOPUS TROPICALIS

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Trenbolone is a non-aromatizeable androgen agonist used extensively in the beef industry. It can be excreted from cattle in an active form and has been measured in aquatic systems associated with or near concentrated animal feeding operations. We characterized the effects of aqueous exposure to 17-beta-trenbolone to larval *Xenopus tropicalis* during larval development. Trenbolone exposure resulted in increased mortality of post-NF58 tadpoles at concentrations ≥100 ng/L. Necropsies of these mortalities showed lungs devoid of air and air present within the digestive tract. These morphological observations and the timing of the mortality is consistent with the larynx becoming hypertrophic following the onset of androgen sensitivity. Development of nuptial pads, a male secondary sex characteristic, was induced in newly metamorphed tadpoles of both sexes at 100 ng/L. Effects on time to complete metamorphosis or body sizes were not observed; however, grow outs placed in clean media for six weeks had significantly smaller wet weights and snout-vent lengths at 78 ng/L. Effects on sex ratios were equivocal, with the first experiment showing a significant shift in sex ratio towards males at 78 ng/L and in the second experiment, no significant effects were observed up to 100 ng/L, although the overall sex ratios were similar. Histological assessment of gonads at NF66 is in progress. These results indicate that larval trenbolone exposure results in toxicity at 17-beta-trenbolone concentrations around 100 ng/L and illustrate the risks of exposure to chemicals possessing androgenic activity in anurans.