Current Test Methods are Adequate for Identification of Endocrine Adverse Health Effects

Alert – February 13, 2017
Author – Mary Ko Manibusan, M.P.H.

Development of new endocrine disruption-relevant test methods has been the subject of intensive research efforts for the past several decades, prompted in large part by mandates in the 1996 Food Quality Protection Act (FQPA). While scientific understanding and test methods have advanced, questions remain on whether current scientific methods are capable of adequately addressing the complexities of the endocrine system for regulatory human health and ecological risk assessments. To this end, Exponent completed an independent comprehensive review of the current regulatory test methods and validated test guidelines for ability of these test methods to collectively identify endocrine adverse health effects. Approximately 42 existing validated test methods and test guidelines were considered in the evaluation of coverage for endocrine-related adverse health effects, biological pathways and diseases using the adverse outcome pathway framework.

In addition to evaluations of whether test methods are adequate to capture endocrine-related adverse health effects, considerations of further enhancements to current test methods, along with the need to develop novel test methods to further improve and augment existing methods are also described. Based on this evaluation, over 35 validated test methods are capable of informing whether a chemical substance perturbs known endocrine-related biological pathways. Overall, Exponent’s independent analysis concludes that current validated test methods are adequate to discern whether a substance may sufficiently perturb the endocrine system to elicit endocrine related adverse health effects. These test methods predominately form the same core data requirements of a typical food-use pesticide registration submission and by extension, regulatory risk assessments supporting food-use pesticide registrations are protective of endocrine related adverse health effects.