

UTILIZING **R** SOFTWARE PACKAGE FOR DOSE RESPONSE STUDIES: THE CONCEPT AND DATA ANALYSIS. Stevan Z. Knezevic, Jens C. Streibig, and Christian Ritz, Haskell Ag. Lab., University of Nebraska, Concord, NE, 68728-2828 and Royal Veterinary and Agricultural University (KVL), Copenhagen, Denmark .

Advances in statistical software allow both standard and more complex statistical methods for non-linear regression analysis of dose response curves to be carried out conveniently by non-statisticians. One such statistical software is the freely available program **R** with the *drc* extension package. The *drc* package can: (1) simultaneously fit multiple dose-response curves, (2) compare curve parameters for significant differences, (3) calculate any point along the curve as the response level of interest, commonly known as an effective dose (eg. ED30, ED50, ED90), and determine its significance, (4) generate graphs for publications or presentations. We believe that when it comes to dose response data, the *drc* package has advantages over many currently available statistical software programs for non-linear regression analysis. Therefore, our objectives are to: (1) provide a review of few common issues in dose response curve fitting, (2) facilitate the use of up-to-date statistical techniques for analysis of dose response curves and (3) invite further debate on the subject (sknezevic2@unl.edu).