

Defined Approach for Detection of Eye Irritants and Corrosives for Pesticide Formulations

N Choksi¹, AJ Clippinger², S Gehen³, M Corvaro⁴, S Ng⁵, SN Kolle⁶, A van Cott⁷, A Hofstra⁸, M Inforzato⁹, N Ryan¹⁰, E Webb¹¹, W Casey¹², D Allen¹

¹ILS, RTP, NC, United States; ²PISC, Philadelphia, PA, United States; ³Corteva Agriscience, Indianapolis, IN, United States; ⁴Corteva Agriscience, Rome, Italy; ⁵Corteva Agriscience, Newark, DE, United States; ⁶BASF SE, Ludwigshafen, Germany; ⁷BASF Corp, RTP, NC, United States; ⁸Syngenta Canada Inc, Guelph, ON, Canada; ⁹Syngenta Crop Protection LLC, Greensboro, NC, United States; ¹⁰Bayer CropScience, RTP, NC, United States; ¹¹Bayer Crop Science, St. Louis, MO, United States; ¹²NIH/NIEHS/DNTP/NICEATM, RTP, NC, United States

In 2018, ICCVAM released a roadmap to expedite the development, use, and regulatory acceptance of new approach methodologies. Central to achieving these goals is the formation of public-private partnerships that allow cross-sector cooperation. These partnerships are being implemented to explore new approaches to assess eye irritation/corrosion potential for pesticide formulations. The PETA International Science Consortium Ltd. (PISC), NICEATM, the U.S. Environmental Protection Agency, and CropLife America companies are collaborating to develop an *in vitro* defined approach for classification of eye irritation potential of pesticide formulations. A three-phase prospective evaluation is being employed to assess the applicability of seven *in vitro* eye irritation/corrosion methods to pesticide formulations and develop a defined testing approach for prediction of U.S. and international irritancy classifications. In Phase 1, six formulations were tested in seven eye irritation test methods: bovine corneal opacity and permeability, neutral red release, isolated chicken eye, porcine cornea reversibility, EpiOcular Eye Irritation Test, and two EpiOcular ET-50 approaches. Results showed that each test method misclassified at least one formulation, but none misclassified all tested formulations. All methods will be included in Phase 2, which will evaluate 10 formulations that represent a range of eye irritancy classifications. Based on these results, an expanded set of pesticide formulations may be tested in Phase 3 in one or more of the test methods. The outcomes of this analysis will suggest endpoints that can form the basis of a defined approach for pesticide formulations testing for eye irritation/corrosion potential. This was funded with U.S. federal funds from NIEHS/NIH/HHS under Contract HHSN273201500010C.

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