

Using the HET-CAM Test and ICE Test in Determining the Eye Irritation Potential of Some Pesticides

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Plant protection pesticides must be tested for eye irritation propensity before being authorized for use. For decades, the Draize test (*in vivo*), which uses rabbits, was widely accepted but became one of the most criticized test methods by animal welfare groups and the public due to the harm inflicted on the test rabbits. This led to the development of *in vitro* techniques, such as the HET-CAM and ICE tests, which have been validated by the OECD to examine the eye irritation potential of pesticides. In our study, a group of four pesticides were subjected to screening to establish *in vitro* data using the HET-CAM and ICE tests and compare them with already established *in vivo* findings. The HET-CAM was conducted according to Invitox Protocol No. 47, while the ICE test was performed as stipulated in OECD 438. A complete tissue, the chorioallantoic membrane (CAM) of a hen's egg, responds to injury with a full-blown inflammatory response, much like the conjunctival tissue of a rabbit's eye responds to an induced chemical. The results obtained showed a good correlation between *in vivo* data and the HET-CAM of 75%; *in vivo* and ICE of 50%; and the least level of agreement of 25% between the two *in vitro* methods. HET-CAM and ICE tests are good tools for examining the possible eye irritation potential of pesticides, which can be suggested as a component of a series of tests employed to do away with the use of animals as test subjects. The HET-CAM and ICE tests can be said to be useful tools for determining potential conjunctival irritation and studying corneal irritant effects in detail, respectively.