

## **ABSTRACT OF THESIS**

### **Testing of pesticides for eye irritation effect with HET-CAM test and on Isolated**

#### **Chicken Eye test**

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Toxicological eye irritation tests are an important part of the licensing process for plant protection products. For decades the Draize eye test is being used to determine the irritation potential of chemicals. Scientists have been trying to develop *in vitro* methods to replace the Draize eye test. In this study, we used the chorioallantoic membrane of the hen's egg (HET-CAM) and isolated chicken eye (ICE) test as alternative toxicological eye irritation tests and compared the results with *in vivo* data. Four pesticides (Tilmor, Prosaro, Zantara and Kideka) were tested using HET-CAM and ICE tests. In the HET-CAM test, each pesticide was applied directly to the CAM and observations related to changes in blood vessels were recorded. In the ICE test, each pesticide was applied to the cornea of an isolated chicken eye and observations related to corneal swelling, opacity and fluorescein retention were observed. The results showed that both *in vitro* tests are closely approximated to the *in vivo* data. Therefore, I recommend HET-CAM and ICE tests as cheaper and faster alternative toxicological eye irritation tests.