

Abstract

Histopathological Alteration on Marsh Frog Skin Induced by the Action of Dual Gold 960EC Herbicide [†]

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The aim of this study was to establish the influence of Dual Gold 960EC herbicide upon skin structure in marsh frog (*Pelophylax ridibundus*).

The sublethal concentration used in the experiments was 2.5–10⁻³ mg metolachlor/g body weight, respectively, 0.0026 × 10⁻³ mL Dual Gold/g body weight, administered to *Pelophylax ridibundus* specimens by intraperitoneal injection, 1 injection every 2 days for 3 weeks [1].

The histopathology of the tegument determined by the action of the Dual Gold 960EC herbicide on *Pelophylax ridibundus* specimens describes the presence of a stratified covering epithelium, consisting of 7–8 cell layers, as a result of the increase in the number of layers made up of horn cells (Figure 1). The cells of the superficial layer retain their nuclei, but show an exfoliation tendency. The cells of the basal layer are tall and cylindrical, with elongated nuclei that divide themselves continuously, in order to ensure the regeneration of the epithelium. In the dermis, immediately below the epidermis, the presence of melanophores is observed. These present a small amount of melanin. The mucous glands are large, hypertrophied and formed by secretory cells that are in full activity (Figure 1).

Around the glands are numerous collagen fibers, intensely colored red with Sirius red. At the base of the glands, a band of collagen fiber lysis can be seen (Figure 1). The deep dermis is made up of irregularly arranged connective fibers.

In conclusion, the sublethal concentration used in the experiment determined histopathological changes in marsh frog skin.

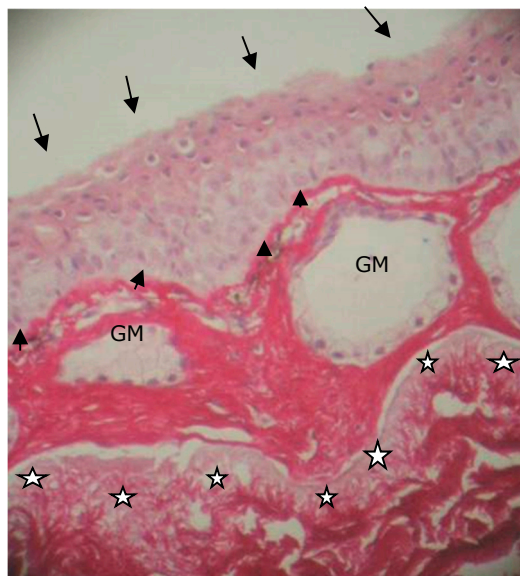


Figure 1. Skin in *Pelophylax ridibundus* specimens exposed to the action of the Dual Gold 960EC herbicide at a temperature of 4–6 °C. Stratified epithelium (black arrow); melanophores (arrowhead); hypertrophied mucous glands (MG); collagenolysis (stars). 100×. H-Sirius red coloring.

References

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