



Environmentally Relevant Mixture of Pesticides Affects Free-Swimming Behavior and Induces Oxidative and Nitritative Stress in Goldfish

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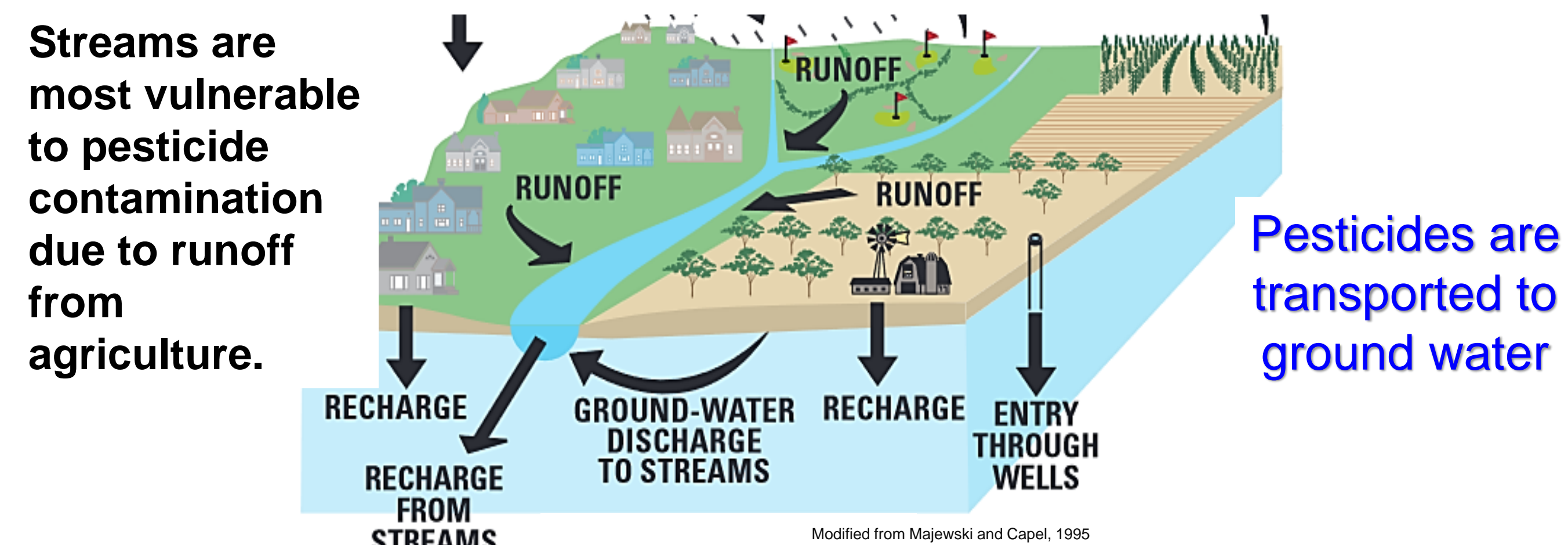
Introduction

1 Environmental Pollution – **Runoff**

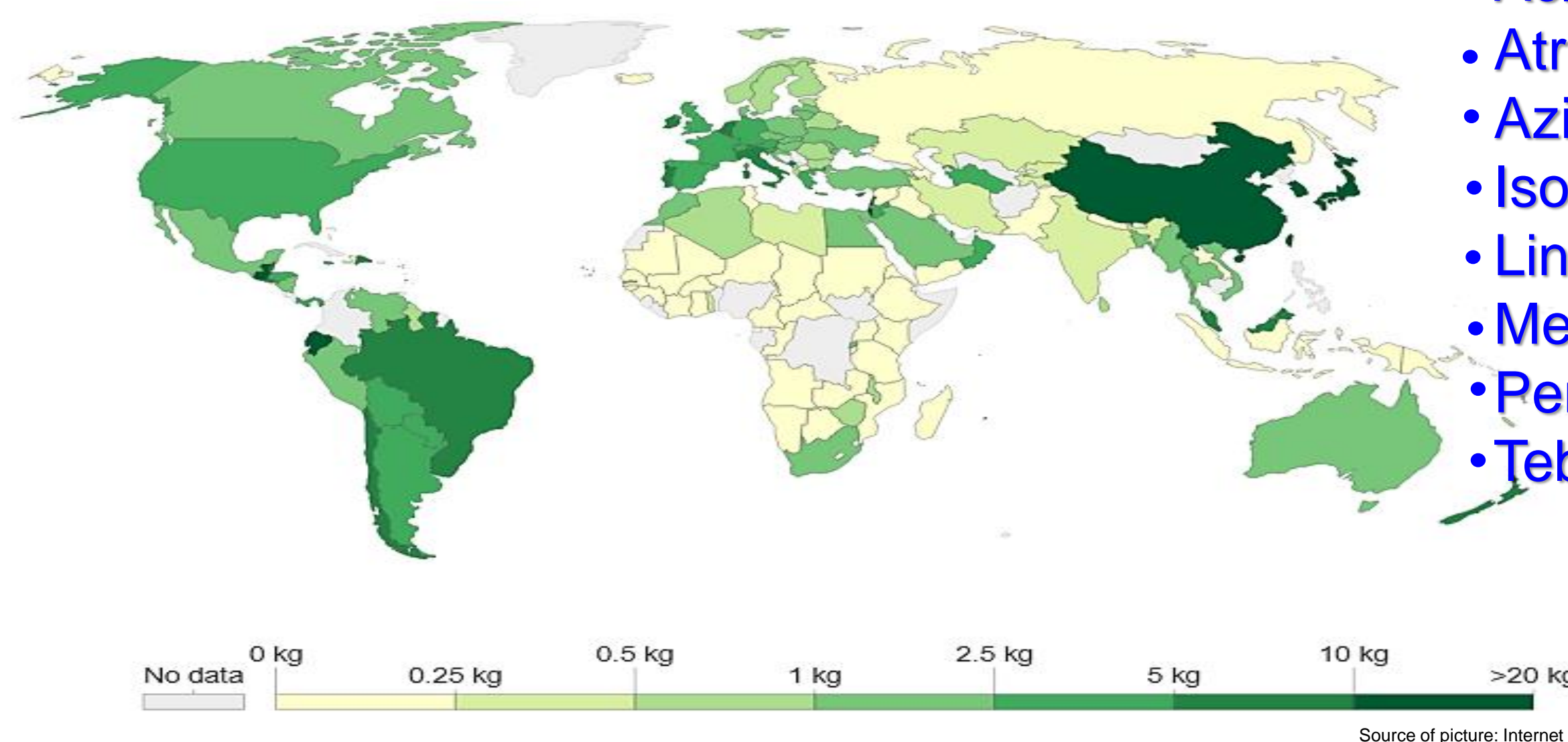
Water Pollution are chemical substances or materials which end up in water due to anthropogenic activities.

Runoff is when pesticides wash down into the soil and into ground water, it then discharges into streams and deposits in the ocean.

Environmental pollution



2 Pesticide Use in the Cropland



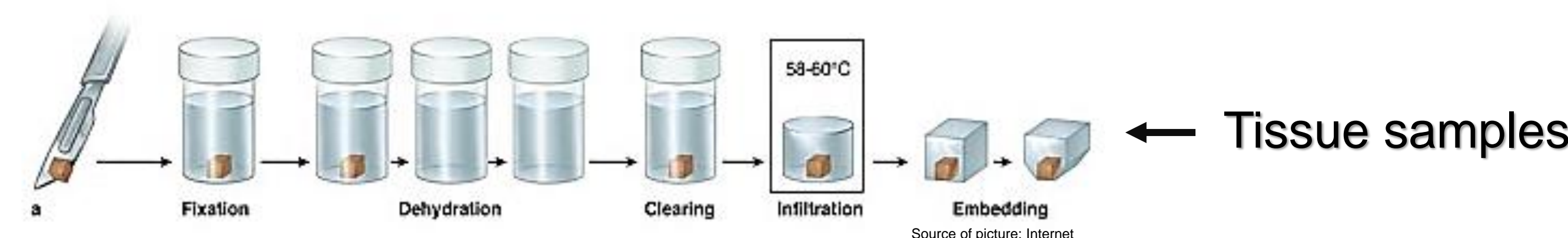
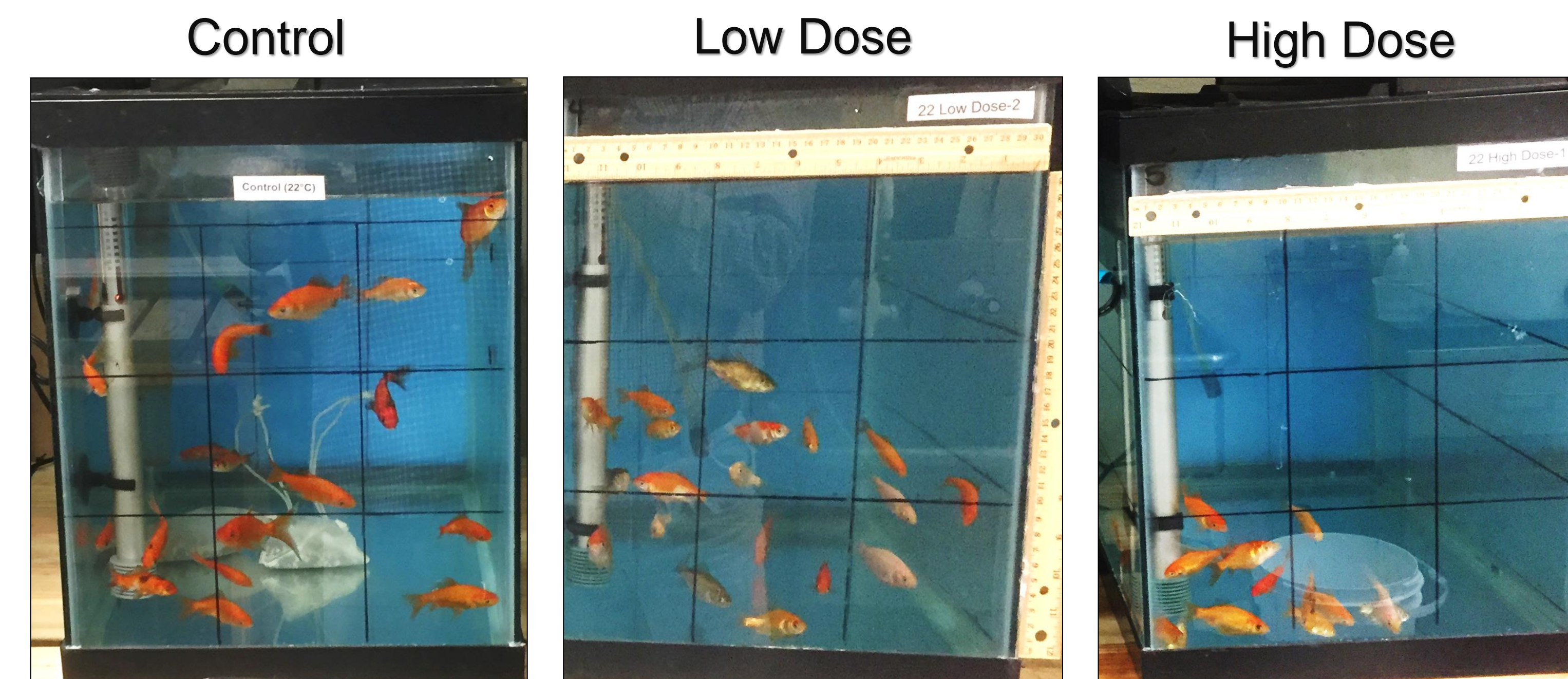
- Aclonifen
- Atrazine
- Azinphos-methyl
- Isoproturon
- Linuron
- Metolachlor
- Pendimethalin
- Tebuconazole

3 Objectives

- To determine the effects of short-term exposure (1-week) of pesticide mixtures on free-swimming behavior in goldfish.
- To determine the effects of short-term exposure (1-week) of pesticide mixtures on nitritative stress and renin expression in kidney of goldfish

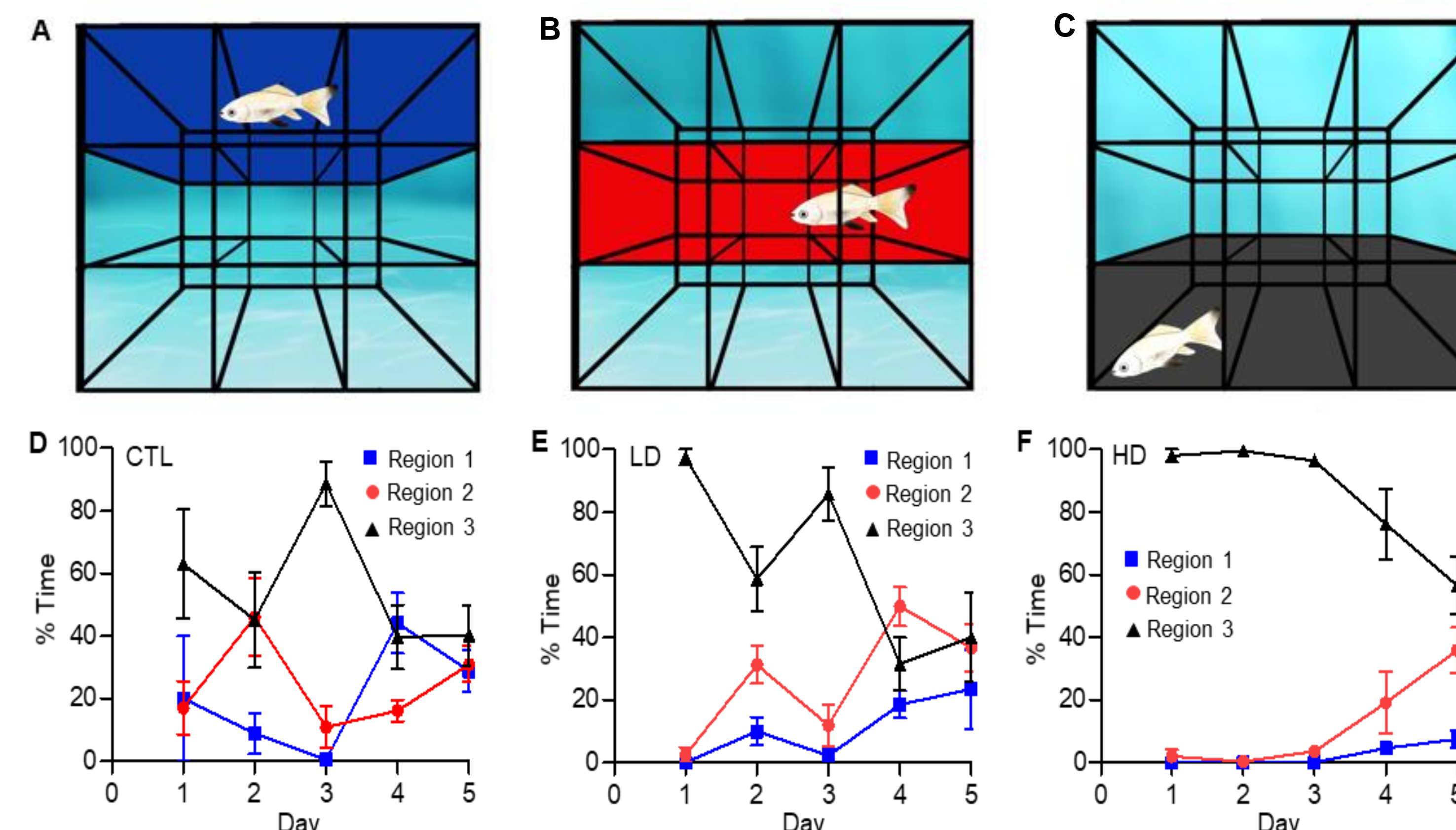
Experimental Design

4 Effects of Pesticide Mixtures of Goldfish Behavior



5 Effects of Pesticide Mixtures of Goldfish Behavior

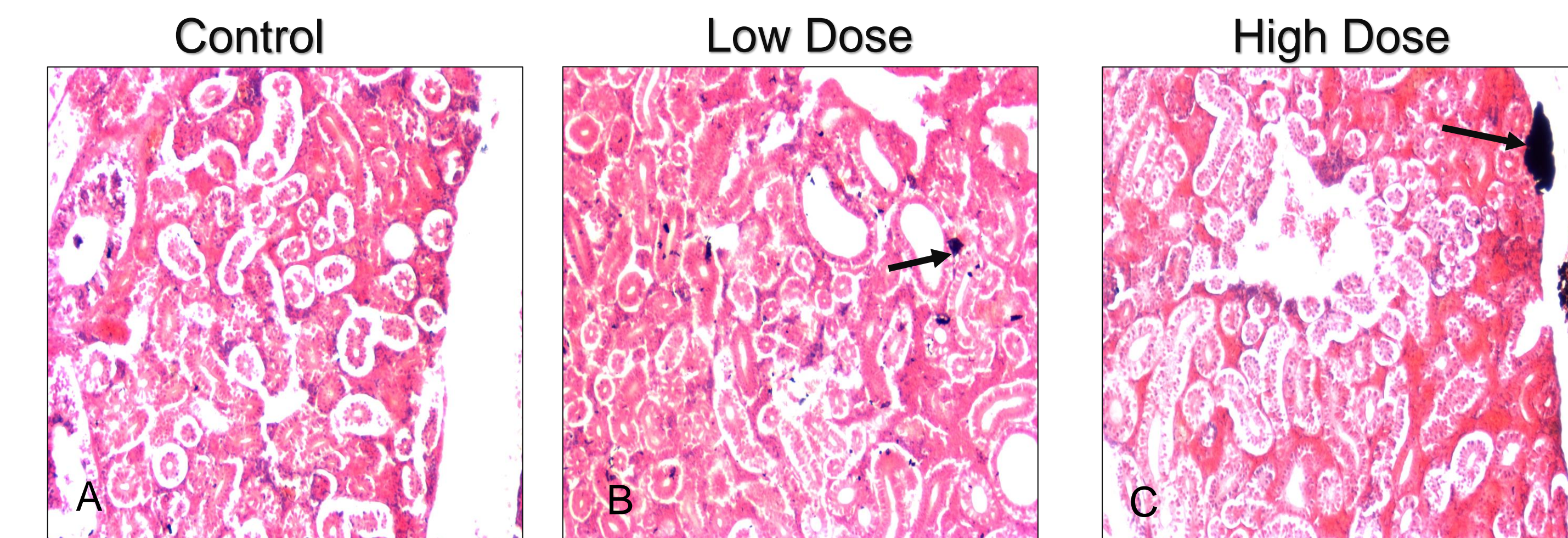
Horizontal Distance



Decrease in distance swam due to pesticides exposure

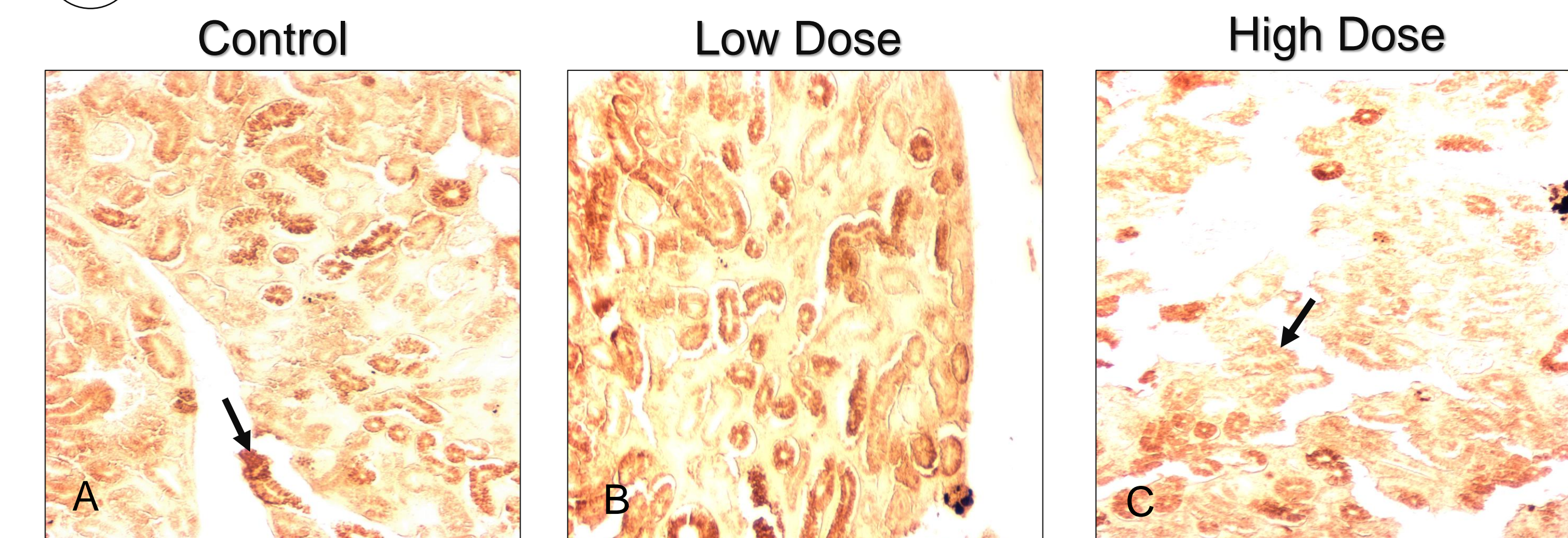
Results

6 Effects of Pesticides on Morphology of Kidney



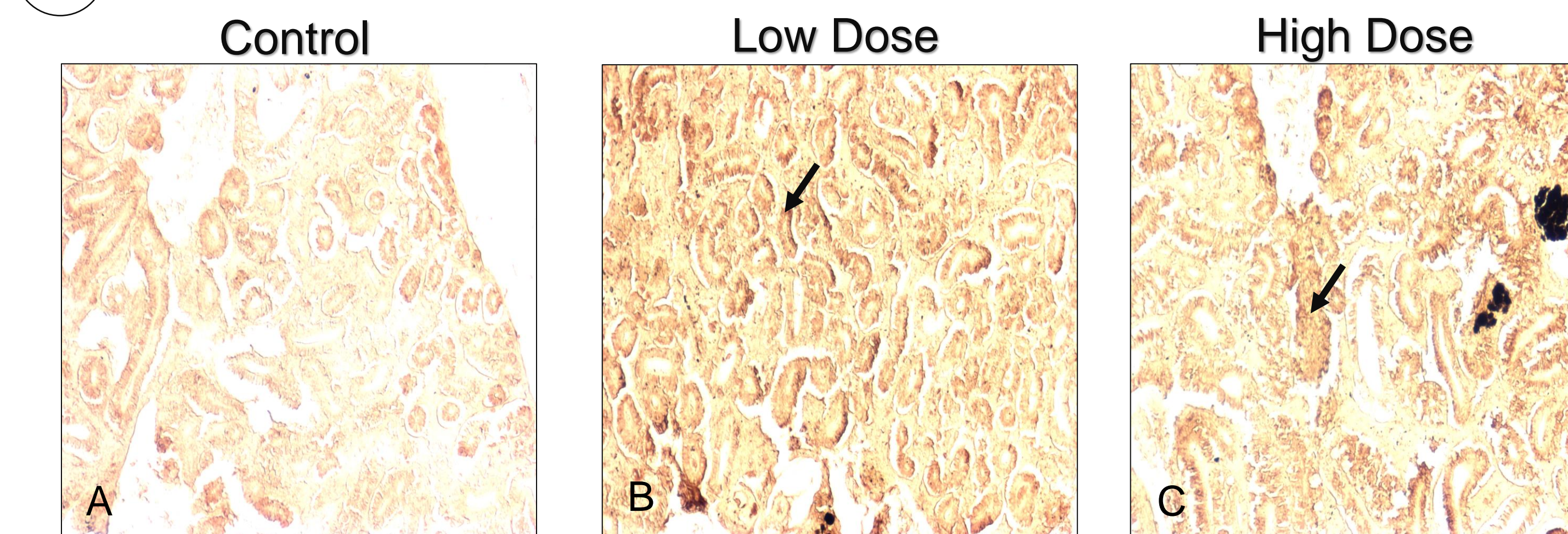
Histological observation shows melanin and widespread tissue damage

7 Effects of Pesticides on Renin Expression in Kidney



A decrease in expression of renin in kidney

8 Effects of Pesticides on Nitrotyrosine Protein Expression



An increase in expression of nitrotyrosine protein in kidney

9 Conclusion

Our results suggest that pesticides induce oxidative/nitritative stress, damage tissues, impair renin expression in kidney.