GUT MICROBIOME DYSBIOSIS IN *Danio rerio* EXPOSED TO GLYPHOSATE

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Xenobiotics can shift the gut microbiome composition and structure, maximizing or inhibiting effects in the host organism. Being the most used pesticide worldwide, glyphosate is present in a wide variety of food products, raising concerns of possible effects due to long term dietary exposure. Although glyphosate is considered non-toxic to vertebrates as they lack the EPSPS enzyme target that inhibits the Shikimate pathways in plants, evidence suggests this compound is in fact able to interfere in analogous pathways in microorganisms such as bacteria, fungi and algae. In gut bacteria in bees, there is evidence of glyphosate interacting with two classes of EPSPS, a) class I associated with susceptibility to the pesticide and b) class II related with resistance. This has been linked to modifications in the taxonomic structure and diversity of the gut microbiota, which in turn translate to susceptibility to pathogens in bees. Based on the previous findings, the objective of this study is to perform an ecological analysis of possible gut bacterial microbiome alterations, using the zebrafish model (*Danio rerio*) and realistic dietary exposure to glyphosate. Thus, if gut dysbiosis is induced, we aim to investigate potential effects in the fish's biological functions, particularly those related with metabolism, immune response, and survival.

To evaluate the effects promoted by the pesticide on the microbiota intestinal, a dietary exposure bioassay was performed with glyphosate incorporated into the food at two concentrations (100 μg/g and 1000 μg/g) for 7 days. Fecal samples were taken for metagenomic analysis and liver and intestine for histological analysis. Among the preliminary results highlights that both classes of enzyme EPSPS (glyphosate target) have been identified in intestinal metagenomes, as well as changes in different taxonomic levels, while at the histological level no effects were characterized by exposure. To date, further bioassays are carried on with another exposure scenario to continue evaluating the susceptibility to pathogens.