



EVALUATION OF THE EFFECTS OF SORGHUM FLOURS ON THE VIABILITY AND DEVELOPMENT ON *DROSOPHILA* LARVAE

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ABSTRACT

Sorghum has a wide range of health related aspects such as anti-bacterial, anti-obesity, and anti-inflammatory effects that have been studied extensively in vitro and in vivo. Due to the relatively high content of polyphenols and flavonoids, especially tannins sorghum can alleviate chronic diseases like Type 2 diabetes or cardiovascular related diseases, by initiating mechanisms on molecular and cellular level. The amount of these bioactive compounds are greatly dependent on the plant, variety and the processing steps. *Drosophila melanogaster* is a key animal model species for studying the genetic regulative immunophysiological effects. Our research is aimed to evaluate the nutritional effect of sorghum based media by estimating viability and the development of *Drosophila* individuals. Furthermore, we will also study how viability reduction caused by a high sugar diet can be alleviated using sorghum based media utilizing the antidiabetic effect of sorghum. We also evaluate how sorghum based extracts can be used as a food supplement and influence our nutrition. Preliminary results show great potential as flavonoid rich plant material depending on the variety used for extraction. Early trials with *Drosophila* also showed beneficial development progress in the hatching and development stage, but the results are still under analysis.

Keywords: Sorghum, polyphenols, Drosophila