# Effect of Bacteria and Fungal Interactions on Mosquito Egg Hatching

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Mosquitoes represent a significant proportion of insect biodiversity, and yeasts fill important roles in food webs, decomposition of organic matter, and nutrient cycling in aquatic ecosystems, but potential mosquito-fungal interactions remain largely unknown. The purpose of this scientific investigation was to evaluate the potential differences of bacteria within red and white Meyerozyma yeast isolates. It was observed that agar plates with Meyerozyma yeast and different antibiotics affected the pigment of the samples. The Meyerozyma red and white yeast samples went through DNA extraction and PCR, and samples were sent to a commercial lab for next generation Illumina sequencing. After analyzing 133,127 sequences obtained from six isolates of Meyerozyma red and white, it was determined that the bacterial communities within Meyerozyma-red and white were abundant and diverse, with eleven genera identified. The most abundant bacteria found within the Meyerozyma-red isolates was Serratia (88.87%), and the most abundant bacteria found within the Meyerozyma-white isolates was Sphingobacterium (87.38%). These bacteria can affect the morphology of the yeasts, in this case causing the red pigment of Meyerozyma red. Additional research on Serratia is needed in order to fully understand its impact on mosquito-fungal interactions.

**Awards Won:**