Assessing the Effect of Blue Light upon the Courtship Behavior of Drosophila melanogaster in Accordance with Varying Eye Color

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Light pollution affects organisms throughout the entire ecosystem via disruption and interference of reproductive fitness. Drosophila melanogaster were chosen for this study because of the incredibly fast rate at which a new generation is produced and can be studied, scientifically accepted and established parameters of reproduction, and position among the food web as a primary consumer. Testing involved sexually receptive Drosophila melanogaster of varying eye colors to be paired underneath light pollution mimicking man made and natural environments. Results indicate the white eyed Drosophila to have had the highest detriment, with the success of copulation reduced by 40% (p=0.03). Ultimately the sepia eyed group had the least impact upon courtship behavior compared to the white and red eyed test groups. This study suggests the absence of melanin within the ommatidium of the Drosophila to be a potential biological mechanism behind the copulation and mating behavior reduction, thus affecting their general fitness and collective biodiversity.

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