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Requests: Projector, chair/stool

Abstract:**The Effects of Ethanol on Courtship and Mating Preference in *Drosophila melanogaster***

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Alcohol addiction is a common affliction with a strong genetic component. Though mammalian systems have provided significant insight into the molecular mechanisms involved in alcohol consumption and addiction, the effects of alcoholism on reproductive behavior have not been well studied. Ethanol acts on multiple neural pathways in order to produce heightened behavioral responses. The fruit fly *Drosophila melanogaster* offers vast genetic resources, tools and databases in an insect model to investigate physiological mechanisms underlying behavior. The adaptive responses of flies have been shown to be strikingly similar to those of mammalian systems such as rodents and human. This implies that ethanol affects the fly and mammalian systems in a similar manner. In this study, we have used *D. melanogaster* as a model to explore the relationship between extensive alcohol feeding and its effect on mate choice. Virgin male fruit flies were fed 5% sucrose and 5% yeast extract in either distilled water or 15% ethanol. Amount of food consumed was monitored over four days, after which each male fly was paired with a virgin female fly (fed untreated Jazz-Mix™ food). Frequency of courtship behaviors and matings were noted for each pair. We found significant effects of alcohol feeding on overall decreased courtship behaviors, which undermined the significantly higher mating success in alcohol-fed males. In the future, fertility (offspring count and sperm viability) will be considered to test the mating success in alcohol-fed male flies. These findings provide novel insights into the physiological effects of ethanol on mating behavior and behavioral plasticity.

Keywords: Alcohol, ethanol, mate choice, mate preference, courtship behavior, mating behavior, Drosophila melanogaster, insects, reproduction.