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Title:	Can Male Drosophila assess how good their Competitors are? And how they Change their investment Pattern Accordingly?
Authors:	Dhiman, Arya
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Abstract:	<p>This study aimed to investigate whether male <i>Drosophila melanogaster</i> can adjust their reproductive investment based on the perceived level of sperm competition in their environment. The study examined whether the presence of early life competitors affected male reproductive investment, including copulation duration and sperm defense ability. The identity of competitors was manipulated by deriving males from populations with different sex ratios and body sizes. The results indicated that male reproductive investment increased in response to the presence of competitor males in early life, but there was no evidence to suggest that the magnitude of this increase was influenced by the number or identity of competitors. Male sperm competition is a widespread phenomenon observed in many animal species, where males increase their reproductive investment in response to the perceived level of sperm competition. In <i>Drosophila melanogaster</i>, promiscuous females mate with multiple males, leading to post-copulatory sexual selection (PCSS). This study aimed to investigate whether male <i>D. melanogaster</i> can plastically modulate their reproductive investment in response to varying numbers and identities of early life competitors. The identity of competitors was manipulated by deriving males from populations by deriving competitor males with small or large body sizes. Results suggest that male reproductive investment, as measured by copulation duration and sperm defense ability, increases in response to the presence of competitor males in early life. However, no evidence was found to suggest that the magnitude of this increase is sensitive to the exact number or the identity of competitor males. These findings contribute to our understanding of how males adjust their reproductive strategies in response to environmental cues, shedding light on the mechanisms of male sperm competition .</p>
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