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Title:	Sperm depletion in relation to developmental nutrition and genotype in <i>Drosophila melanogaster</i>
Authors:	Meena, Abhishek (/jspui/browse?type=author&value=Meena%2C+Abhishek)
Keywords:	Fitness GEI genotype mating propensity nutrition sperm number
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Abstract:	Nutrient limitation during development can restrict the ability of adults to invest in costly fitness traits, and genotypes can vary in their sensitivity to developmental nutrition. However, little is known about how genotype and nutrition affect male ability to maintain ejaculate allocation and achieve fertilization across successive matings. Using 17 isogenic lines of <i>Drosophila melanogaster</i> , we investigated how variation in developmental nutrition affects males' abilities to mate, transfer sperm, and sire offspring when presented with successive virgin females. We found that, with each successive mating, males required longer to initiate copulation, transferred fewer sperm, and sired fewer offspring. Males reared on a low-nutrient diet transferred fewer sperm than those reared on nutritionally superior diets, but the rate at which males depleted their sperm, as well as their reproductive performance, was largely independent of diet. Genotype and the genotype \times diet interaction explained little of the variation in these male reproductive traits. Our results show that sperm depletion can occur rapidly and impose substantial fitness costs for <i>D. melanogaster</i> males across multiple genotypes and developmental environments.
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