Title:	Bacterial supergroup-specific “cost” of Wolbachia infections in Nasoniavitripennis
Authors:	Tiwary, Alok (/jspui/browse?type=author&value=Tiwary%2C+Alok) Babu, Rahul (/jspui/browse?type=author&value=Babu%2C+Rahul) choudhury, Rhitoban Ray (/jspui/browse?type=author&value=choudhury%2C+Rhitoban+Ray)
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Abstract:	The maternally inherited endosymbiont, Wolbachia, is known to alter the reproductive biology of its arthropod hosts for its own benefit and can induce both positive and negative fitness effects in many hosts. Here, we describe the effects of the maintenance of two distinct Wolbachia infections, one each from supergroups A and B, on the parasitoid host Nasonia vitripennis. We compare the effect of Wolbachia infections on various traits between the uninfected, single A-infected, single B-infected, and double-infected lines with their cured versions. Contrary to some previous reports, our results suggest that there is a significant cost associated with the maintenance of Wolbachia infections where traits such as family size, fecundity, longevity, and rates of male copulation are compromised in Wolbachia-infected lines. The double Wolbachia infection has the most detrimental impact on the host as compared to single infections. Moreover, there is a supergroup-specific negative impact on these wasps as the supergroup B infection elicits the most pronounced negative effects. These negative effects can be attributed to a higher Wolbachia titer seen in the double and the single supergroup B infection lines when compared to supergroup A. Our findings raise important questions on the mechanism of survival and maintenance of these reproductive parasites in arthropod hosts.
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