

## **B chromosome influence on macro-spermatid amount in the grasshopper *Abracris flavolineata* (Orthoptera: Acrididae)**

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### Abstract/Resumo

B chromosomes are additional elements that occur in some individuals of determined populations. These chromosomes are regularly known to behave as a parasitic element that could promote harmful effects to your hosts despite their ability of transmission related to distinct drive mechanisms. One of the effects of B chromosome presence is related to the abnormal formation of spermatids that could have interference on viability of gametes. Here, we tested if B chromosome harboring individuals (1B) of *Abracris flavolineata* present different rate of abnormal spermatids (presenting ploidy higher than haploidy “n”) in comparison to individuals with no B chromosomes (0B). Abnormal spermatids can be easily recognized by size and number of centriolar adjuncts labeled through silver nitrate treatment followed by Giemsa 5% staining. The counting of 400 spermatids of four individuals from Rio Claro/SP for each condition revealed mean percentage of macro spermatids of 0,625% in 0B samples, while for 1B samples a slightly increase was noticed, with 0,812%. For both conditions diploid spermatids were noticed, but for 1B individuals tetraploidy was also common. Our data, with occurrence of 30% more macro-spermatids in 1B individuals is contrasting with the observed in *Eyprepocnemis plorans* that showed an increase of almost five times the number of macro-spermatids on B carriers. The data suggests a less harmful effect of B chromosomes in reproduction capacity of *A. flavolineata*. A next step is to investigate if B chromosome would be present in these abnormal spermatids, indicating a defensive mechanism by the host genome, through B chromosome expulsion.

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