

Review of: "The Assembly of the Y Chromosome Reveals Amplification of Genes Regulating Male Fertility in *Bactrocera Dorsalis*"

Rachel Jesudasan^{1,2}

¹ (Retired), Centre for Cellular and Molecular Biology, Hyderabad, India

² Genetics, Osmania University, India

Potential competing interests: No potential competing interests to declare.

"The Assembly of the Y Chromosome Reveals Amplification of Genes Regulating Male Fertility in *Bactrocera Dorsalis*" by Wu et al. has sequenced and assembled the *Bactrocera Dorsalis* Y chromosome almost to completion for the first time for Tephritidae using short and long sequencing strategies. Assembling the Y chromosome sequences is a rather difficult task owing to its repeat content. This study reveals interesting features like the amplification of certain sequences from a gene localizing to the X chromosome, on the Y, as has been reported for other insects of the Tephritidae family. These amplified sequences appear to be crucial for controlling male fertility.

The comments and corrections have been included within the manuscript in the corresponding places. Tables are to be named in the order they appear in the text. The same applies for figures and supplementary figures. The link given for the PONDR is not accessible. Please label the chromosome sets in Supplementary figure 5.

- Can you provide specific examples of how the identified gene amplifications impact male fertility in *Bactrocera dorsalis*?

The authors have done RNAi-type experiments where they have used anti-oligos of different concentrations to reduce sperm numbers. If they run into naturally occurring Y-chromosomal deletions in populations, these can be studied for their effect on sperm morphological and motility-related abnormalities, and fertility. Multi-copy genes regulating genes involved in sperm parameters have been studied in mice. Such deletions have an effect on sperm parameters, sperm numbers, fertility, skewed male-female ratio, etc.

All the work cannot be accommodated into a single paper. Other suggestions related to Y-chromosomal regulation have been incorporated into the edited PDF attached here.

You are welcome to get back to me for further clarifications.