

Insects modify mating behavior in anticipation of storms

October 2 2013

Insects modify calling and courting mating behavior in response to changes in air pressure, according to results published October 2 in the open-access journal *PLOS ONE* by Ana Cristina Pellegrino and José Maurício Bento, University of São Paulo, and colleagues from other institutions. The bugs' ability to predict adverse weather conditions may help them modify their mating behavior during high winds and rain, reducing risk of injury or even death.

Researchers studied mating behavior changes in the curcurbit beetle, the true armyworm moth, and the potato aphid under falling, stable, and increasing air pressure [conditions](#). When researchers measured the male beetles' response to female sex pheromones under the different conditions, they found a significant decrease in pheromone response when air pressure fell compared to stable or increasing pressure. Furthermore, 63% of males started copulating faster in the presence of females during dropping [atmospheric pressure](#), a condition associated with high rains and winds. By contrast, under stable or rising air pressure conditions, all males showed full courtship behavior.

Additionally, the amount that female armyworm moths and potato aphids showed mate-attracting behavior was also measured under the three atmospheric conditions. The female armyworms' calling was reduced during decreasing air pressure, but the potato aphid showed reduced calling during both decreasing and increasing [air pressure](#), two conditions that can occur with [high winds](#). In both cases, reduced calling went hand-in-hand with reduced [mating behavior](#). Bento explains, "The

results presented show that three very different insect species all modify aspects of their sexual behaviour in response to changing barometric pressure. However, there is a great deal of interspecific variability in their responses that can be related to differences in size, flight ability and the diel periodicity of mating."

More information: Pellegrino AC, Peñaflor MFGV, Nardi C, Bezner-Kerr W, Guglielmo CG, et al. (2013) Weather Forecasting by Insects: Modified Sexual Behaviour in Response to Atmospheric Pressure Changes. *PLoS ONE* 8(10): e75004. [DOI: 10.1371/journal.pone.0075004](https://doi.org/10.1371/journal.pone.0075004)

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