

Full title: Monitoring the Age of Mosquito Populations Using Near-Infrared Spectroscopy

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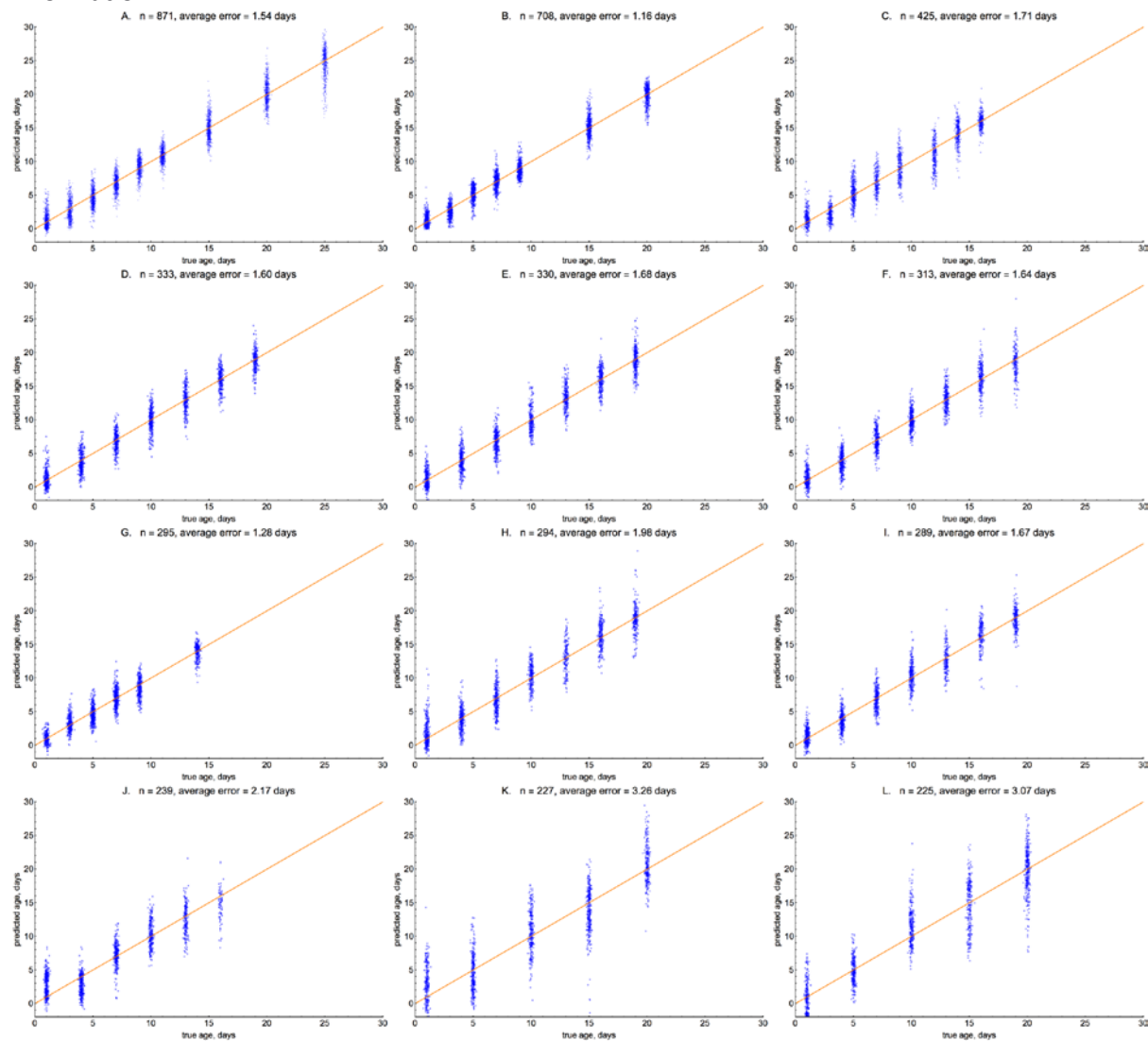
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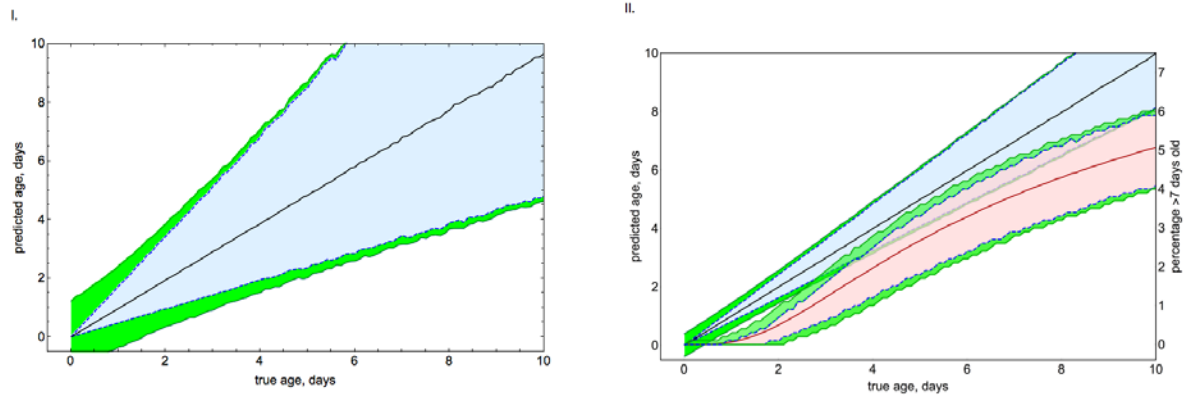
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Supplementary Information



Supporting Fig 1. The ability of NIRS to predict the age of individual laboratory reared *Anopheles gambiae s.l.* (studies A. to J.) and *Aedes aegypti* (K. and L.) mosquitoes using novel NIRS chemometric methods.

Figure shows novel predictions of mosquito age on independent test sets for all studies separately, along with the total numbers of individuals in each study. Blue points indicate the individual-age estimates (with jitter added to the x-axis) whilst the orange line which shows the ideal ($y = x$ perfect correlation) line.



Supporting Fig 2. The ability of NIRS to predict the average age of a mosquito population.

I. The contribution of sampling variability and NIRS accuracy to the overall uncertainty. Shaded area indicates 95% CI caused by sampling variability (dashed line, light blue area) and the additional uncertainty caused by NIRS measurement error (solid green line, outer green area). Estimates were generated sampling (I.) 10 or (II.) 100 mosquitoes (both using 300 mosquitoes in the calibration dataset). In II., the red line shows the relationship between the true mosquito population age and the percentage of mosquitoes >7 days old. Unlike the mean age estimate, the percentage of mosquitoes >7 days old estimates are biased by measurement error with red line showing the average estimate once measurement error is considered.