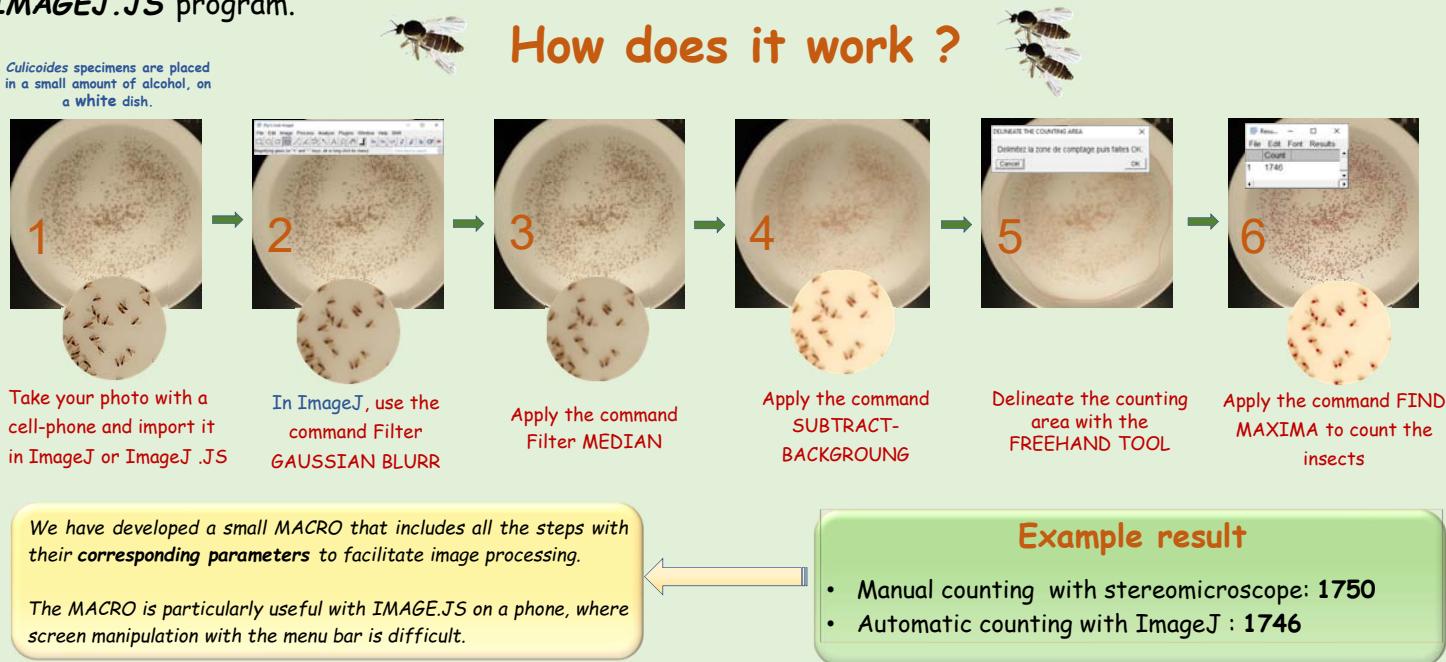


# Effortless Counting of Sorted Culicoides from Light-Traps

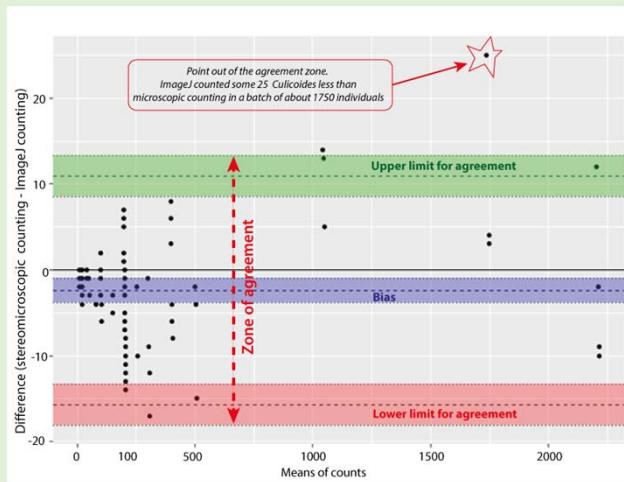
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Counting Culicoides from sorted light traps may be tedious when numerous samples are being studied. Despite advancements in artificial intelligence (AI) and the availability of AI-based applications for object counting, the technique remains costly or difficult to implement in a straightforward manner. We propose a simple, cost-free, and easy-to-implement method for counting Culicoides which relies on the utilization of the freeware **IMAGEJ (FIJI)**.

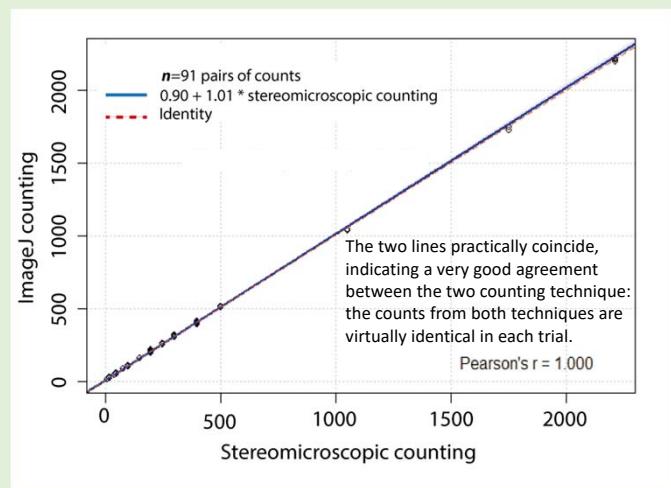
The method can be used on a computer with **IMAGEJ** installed or directly on a **cell phone** using the **IMAGEJ.JS** program.



Agreement of ImageJ counting with exact manual counting using a stereomicroscope was evaluated using **Bland-Altman** analysis (Fig. 1) and **Passing-Bablok** regression (Fig. 2) using 91 pairs of counts from 10 to 2200.



**Fig. 1.** Bland-Altman plot for comparison of stereomicroscopic and ImageJ countings



**Fig. 2.** Passing-Bablok Regression Fit

## Conclusion

With a clean sample where individuals are not overcrowded, the ImageJ method is as precise as standard manual counting and can thus be used in routine analysis.

For details on parameters for ImageJ commands, and optimal conditions of use of our method, please refer to this document.

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