

Review

Insects-2855137

To find environmental-friendly repellents for different disease-vector insects is crucial for sustainable environment, therefore the aim of the present manuscript is important and useful for the research community working on this objects, but also for a wider audience. The concrete subject of the study was to investigate the repellent activity of two essential oils and their main components alone or in combination with each other. For practical use it is important to find the optimal composition, ratio and amounts of the repellents. Investigating the effect of tested combinations on non-target organisms increase the value of the manuscript, as it is important to consider every aspect of the effectiveness of the potential repellence. Even the manuscript is a valuable work and I think it worth to be published, due to some unclarity in methodology and inappropriate aspects of results, I recommend publishing only after a major revision. More detailed comments can be found below.

INTRODUCTION

The manuscript give a good overview of the study area with appropriate references, however it would be good to detail more the reasons why the lemongrass and star anise were choose.

The term 'combination formulation' is really constrained, it would be enough to use simple 'combination'.

MATERIAL and METHODS

The applied methods are adequate, however there are some unclear details especially in connection with the evaluation of repellent activity bioassay and the applied calculations of the different indices. In connection with the equations it would be better to use mathematical sings instead of text.

l. 203-205 it would be good to clear up the concept of synergistic effect, which is more that the summary of the effect if the individual components, so regarding to your explanation of the meaning of SRI it would be good to insert one more category: addition ($SRI \approx 1$, which occur when the effect of the tested combination equal to the sum of the individual effects. The presented equation is also wrong, the correct would be:

$SRI = \%RR_{comb} / \sum(\%RR_{Indiv})$, where

$\%RR_{comb}$ is the $\%RR$ of combination, $\%RR_{Indiv}$ is the $\%RR$ of individual components.

According to the referred publications of this part, Ref 25 does not contain any SRI, so it is not relevant. Ref. 19 contain a synergistic index and it provides the same formula as I suggested. So please correct the formula and also recalculate your results, as according to the Figure 4. your calculations are wrong.

l. 247 LT_{50} is an abbreviation, please explain it in the text even it is obvious for those one who working on this area.

2.9. Statistical analysis

Please provide more details in connection with statistics, eg. how did you checked assumptions of the applied statistical method. According to the Figure 1., you used regression, please provide the details of this analysis as well.

RESULTS

l. 344-346 explanation of IR should be provided in M&M section.

l. 350-353 this part should be deleted, as it could be find in the M&M

l. 368-371 this part also should be deleted, as it could be find in the M&M

Figure 7 – unfortunately these pictures are not appropriate to see morphological changes.