



Study on the Potential Use of the Aqueous Extract of Arabian Rose (*Rosa arabica*) as an Insecticide and Plant Nutrient

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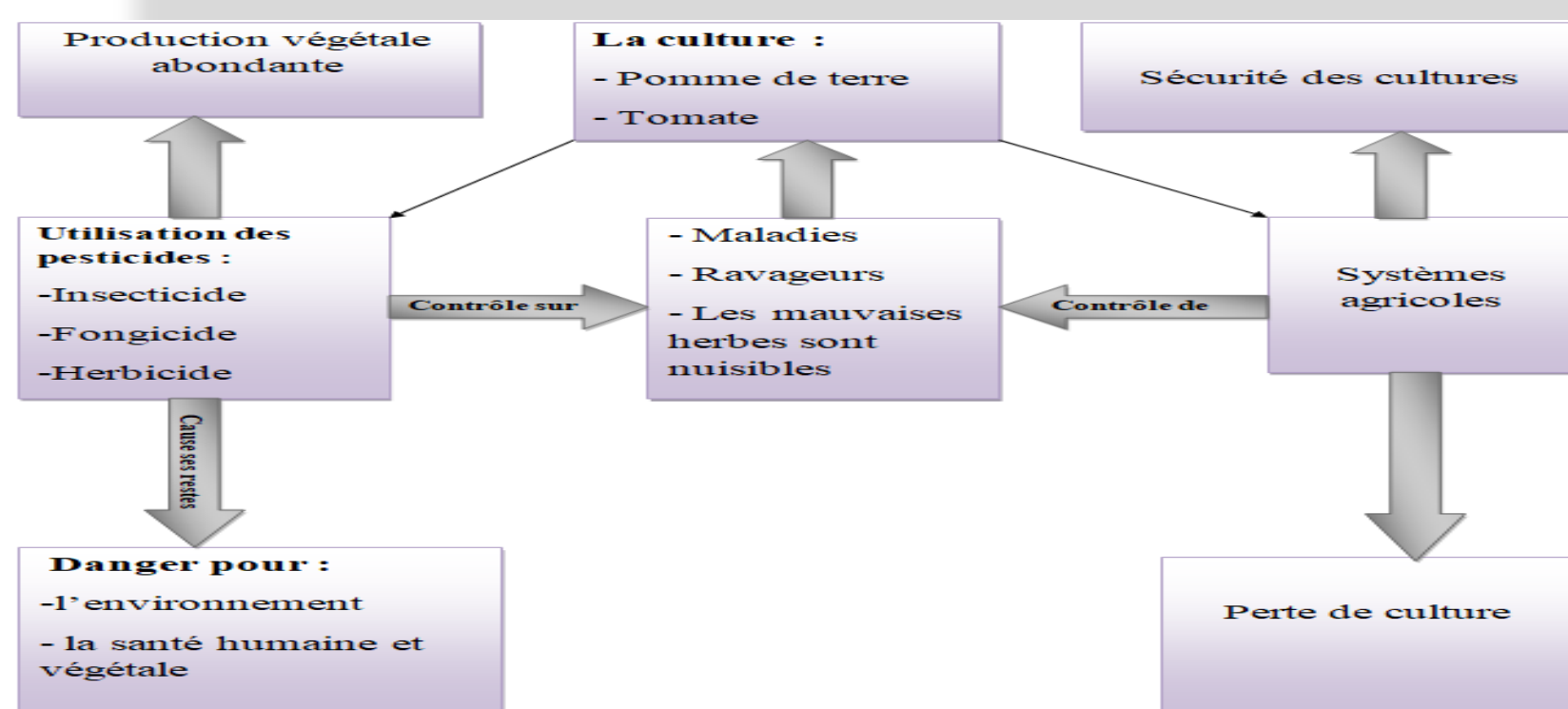
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ABSTRACT:

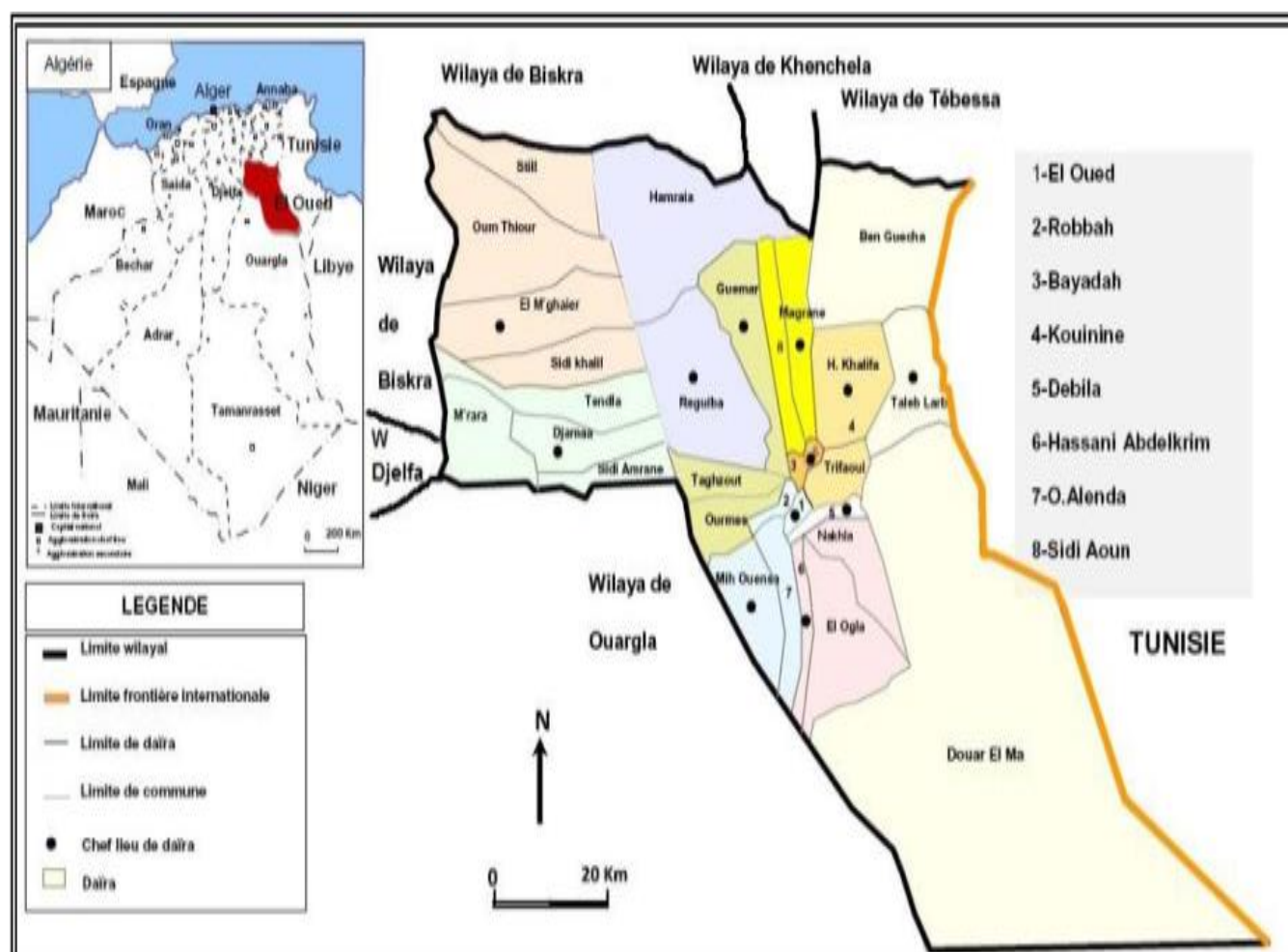
This study aims to investigate the potential use of the aqueous extract of *Rosa arabica* as both a plant nutrient and an insect repellent. The research was conducted in the Oued Souf region of Algeria. Rose water was tested as a plant nutrient by applying it to pumpkin seeds at different concentrations. The results showed significant differences in the germination and growth of the pumpkin seeds. Additionally, the aqueous extract of *Rosa arabica* was evaluated as a pesticide against aphids on oleander and vine plants and pea larvae. The results demonstrated promising effects, particularly on aphids and pea larvae. The aphids showed visible swelling and a color change from yellow to brown, while green aphids also turned brown. Regarding the pea larvae, they ceased feeding, swelled, and changed color from green to brown. Eventually, the brown larvae turned black and died, resulting in a significant mortality rate. The findings indicate that the aqueous extract of *Rosa arabica* exhibits a toxic effect on aphids in vineyards. As the extract concentration increased, the aphid mortality rate increased over time, reaching a maximum death rate of 95%. Moreover, our study confirmed that the aqueous extract of *Rosa arabica* has no harmful effects on plants. These results suggest that the aqueous extract of *Rosa arabica* effectively eliminates aphids and pea larvae, making it a safe and environmentally friendly biological control method. This natural alternative could replace chemical pesticides, which often have harmful environmental effects.

Keywords: Aqueous extract of *Rosa arabica*, Aphids, Pea larvae, Plant nutrient, Biological control.

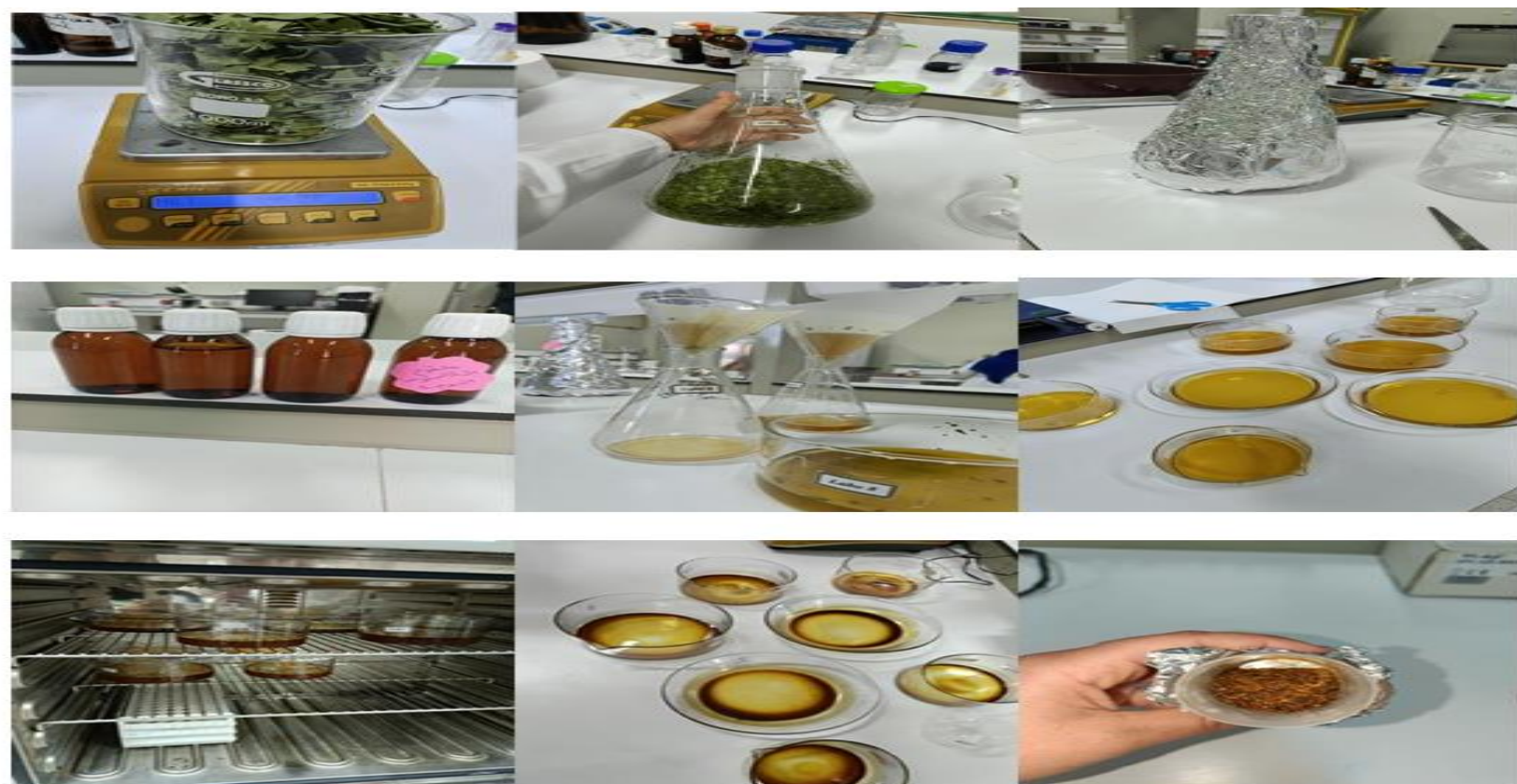
INTRODUCTION



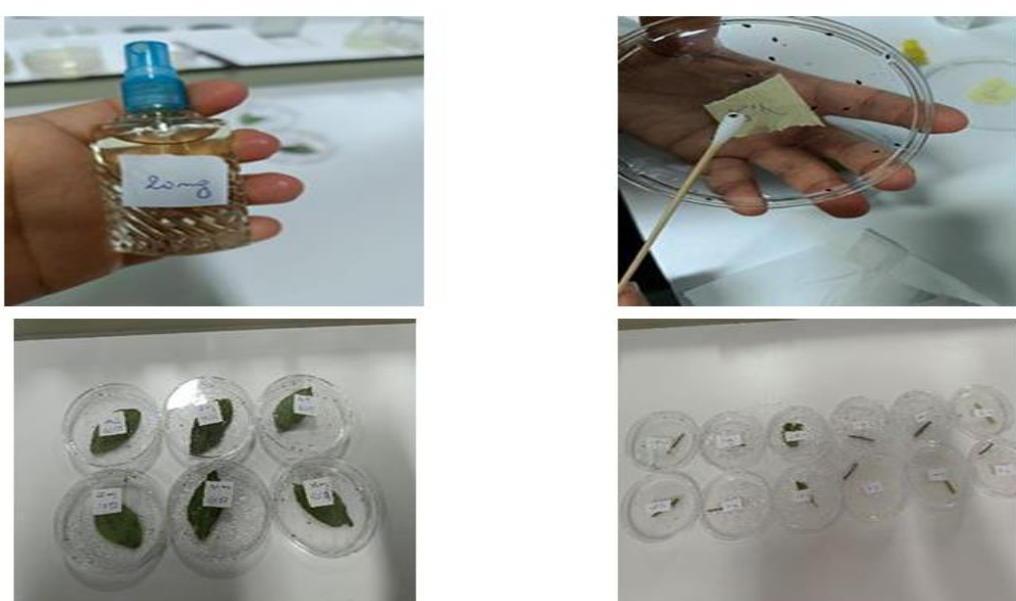
MATERIALS AND METHODS



Geographic map of Souf



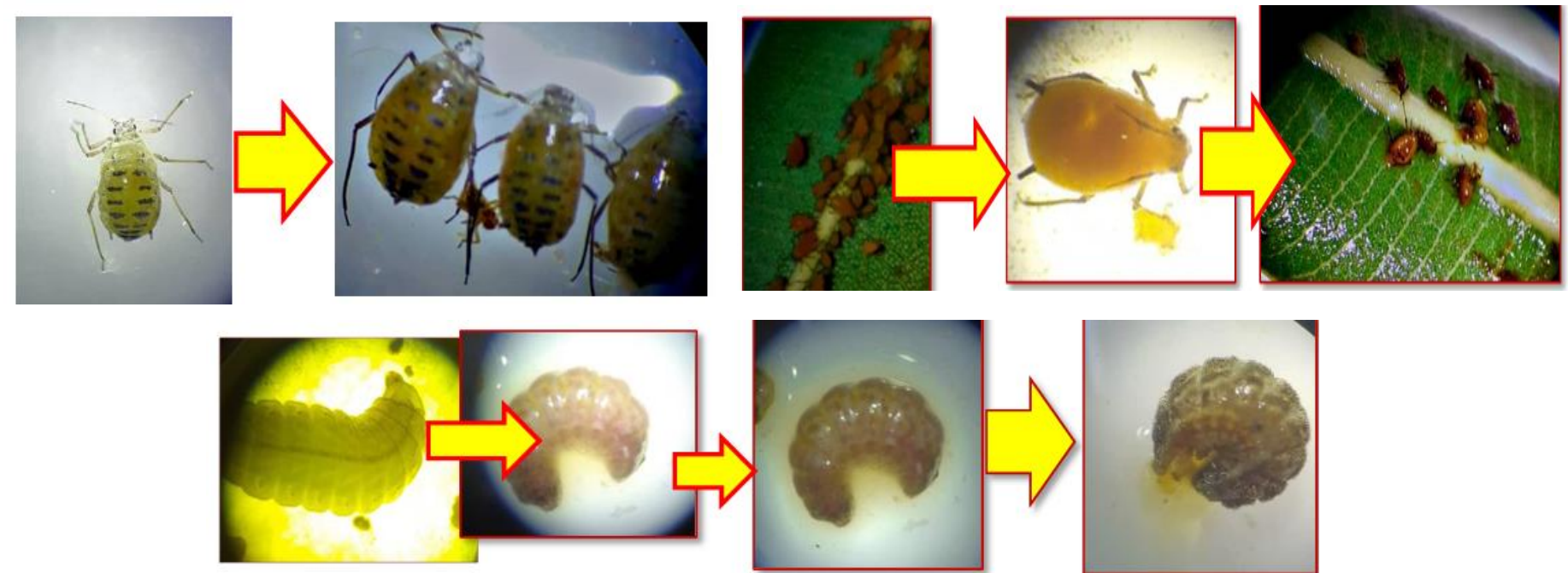
Stages of preparation of water and oil extract



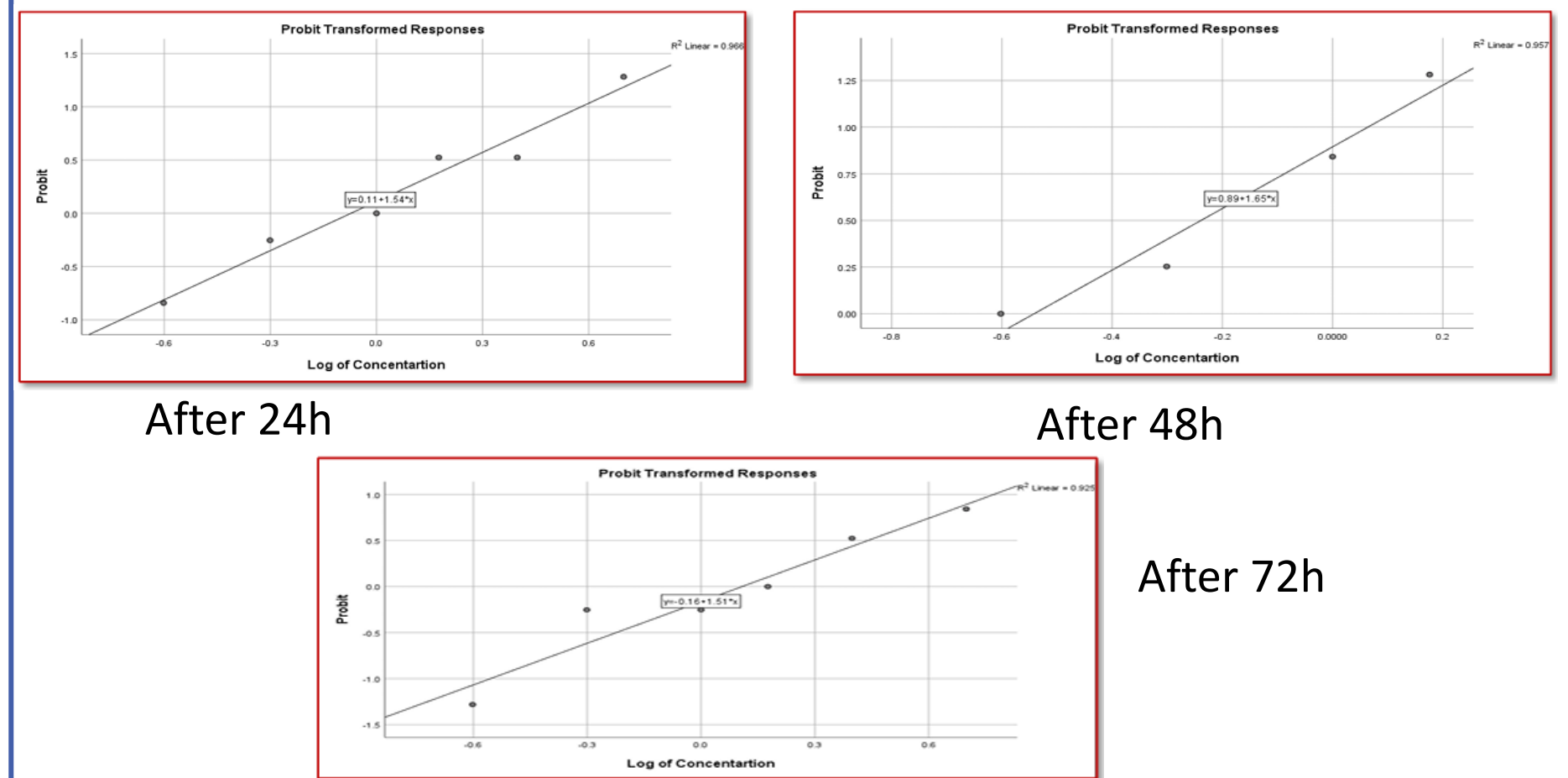
Application of water

RESULTS AND DISCUSSION

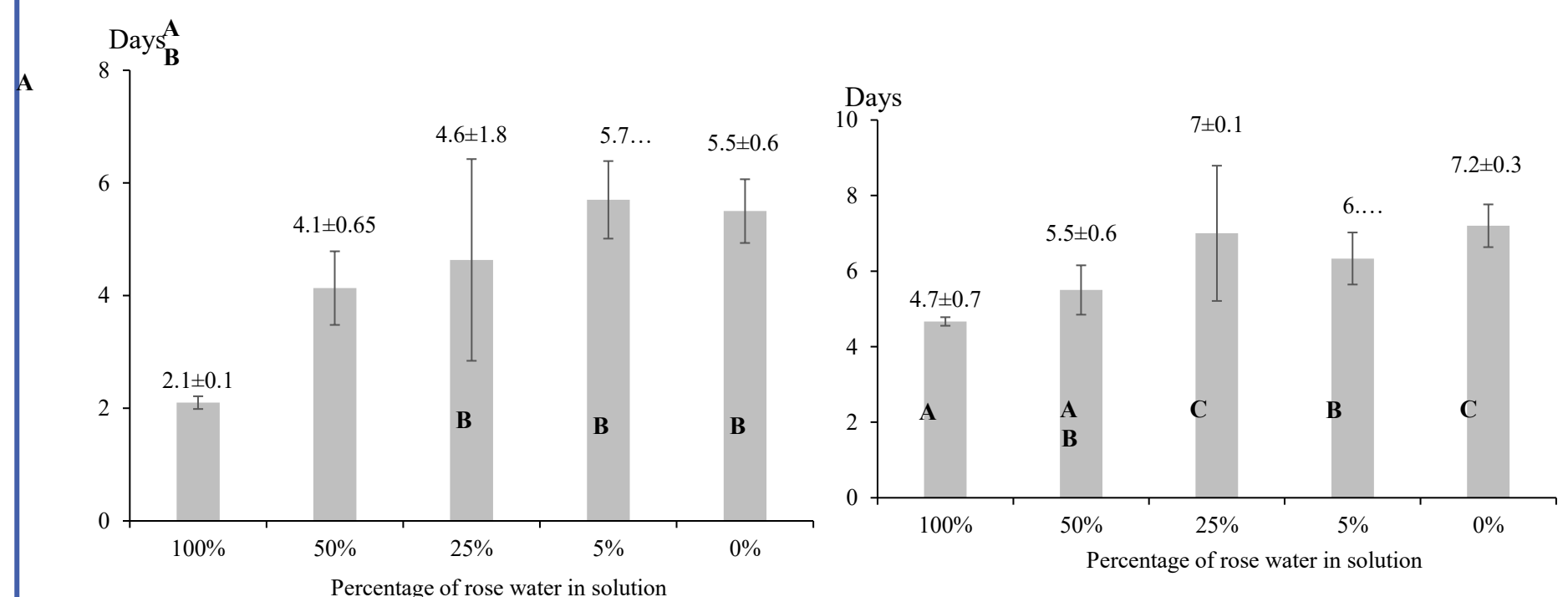
Visual results



Results of the water extract control (Analyze Probit)



Results of the water extract from the Germination control



CONCLUSION

The plant of all kinds and at various stages of its development is infected with many insect pests, which lead to a shortage of the crop. Therefore, farmers resort to the use of chemical insecticides to eliminate these pests without realizing their disadvantages to the plant, humans, animals, and the environment. Still, over time, these pests have developed the ability to cope with chemical pesticides and have emerged resistant to the effective substances contained in them. Hence, the specialists' vision is geared towards reducing their use and finding environmentally friendly alternatives that maintain both human and animal health and safety. One such alternative is to examine the impact of many natural products, mainly plant extracts, on controlling agricultural pests.