

Extraction of Chitin from the Wings of the Desert Locust (*Schistocerca gregaria*): Protocol Optimization

Salma ARRAFI ^a, Soukaina ELKADAoui ^{a,b}, Manar AZZI ^{a,b}, Abdelouahed TOLAIMATE ^a

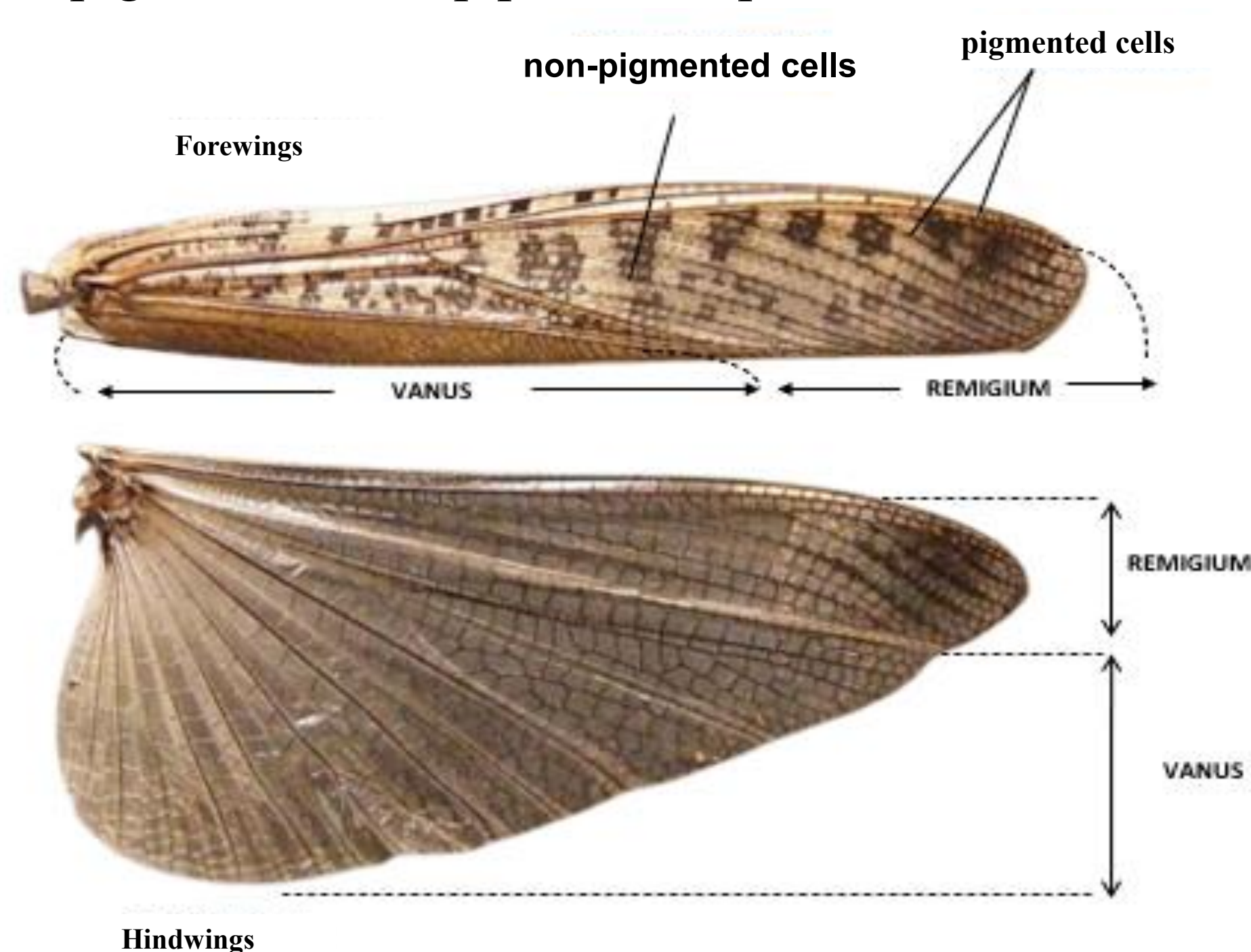
^a Interdisciplinary Research Laboratory in Bioresources Environment and Materials (LIRBEM), ENS, Cadi Ayyad University, Hay Hassani, 40000 Marrakech, Morocco

^b Bioresource and food safety laboratory, Cadi Ayyad University, Faculty of Sciences and Technologies, 112 Boulevard Abdelkrim Al Khattabi, 40000 Marrakech

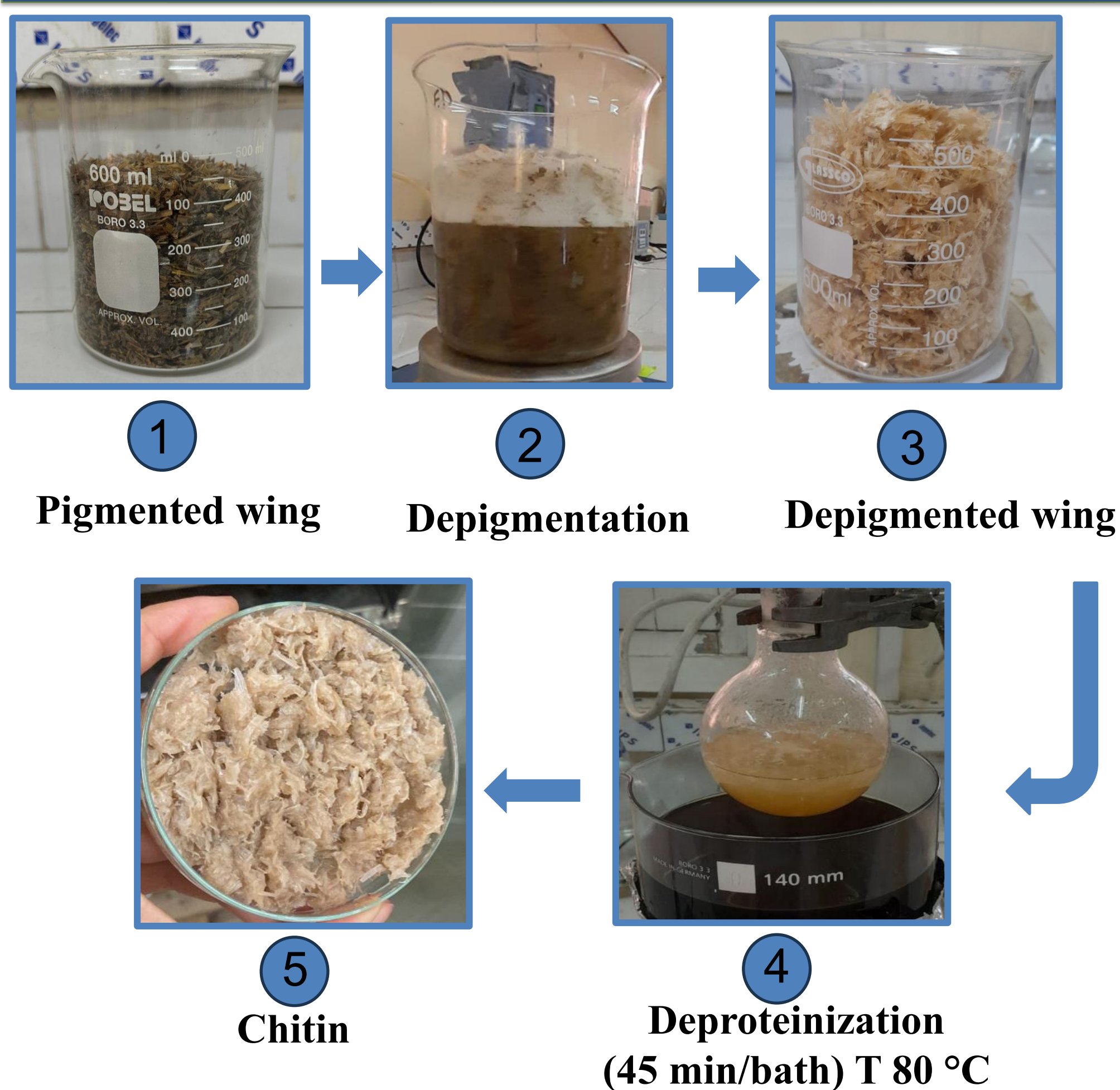
INTRODUCTION

In previous work conducted at LIRBEM, the extraction of chitin from the wings of the desert locust (*Schistocerca gregaria*) required 7 deproteinization baths of 45 minutes using 2M NaOH at 80°C.

- **Hypothesis:** the high number of baths may be related to the interference caused by pigments rather than to the actual efficiency of the deproteinization process.
- **Objective:** to verify this hypothesis by introducing a depigmentation step prior to deproteinization.



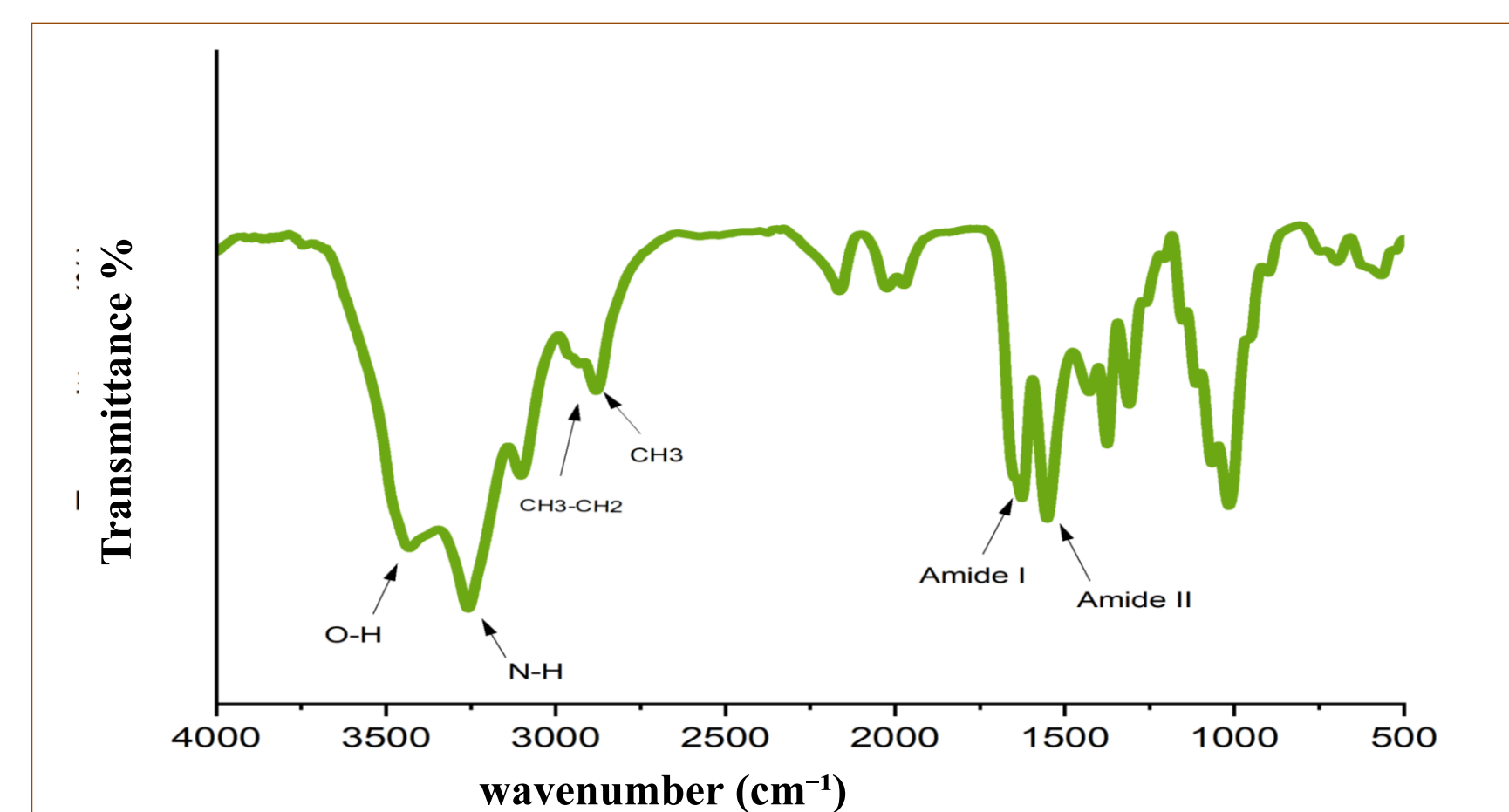
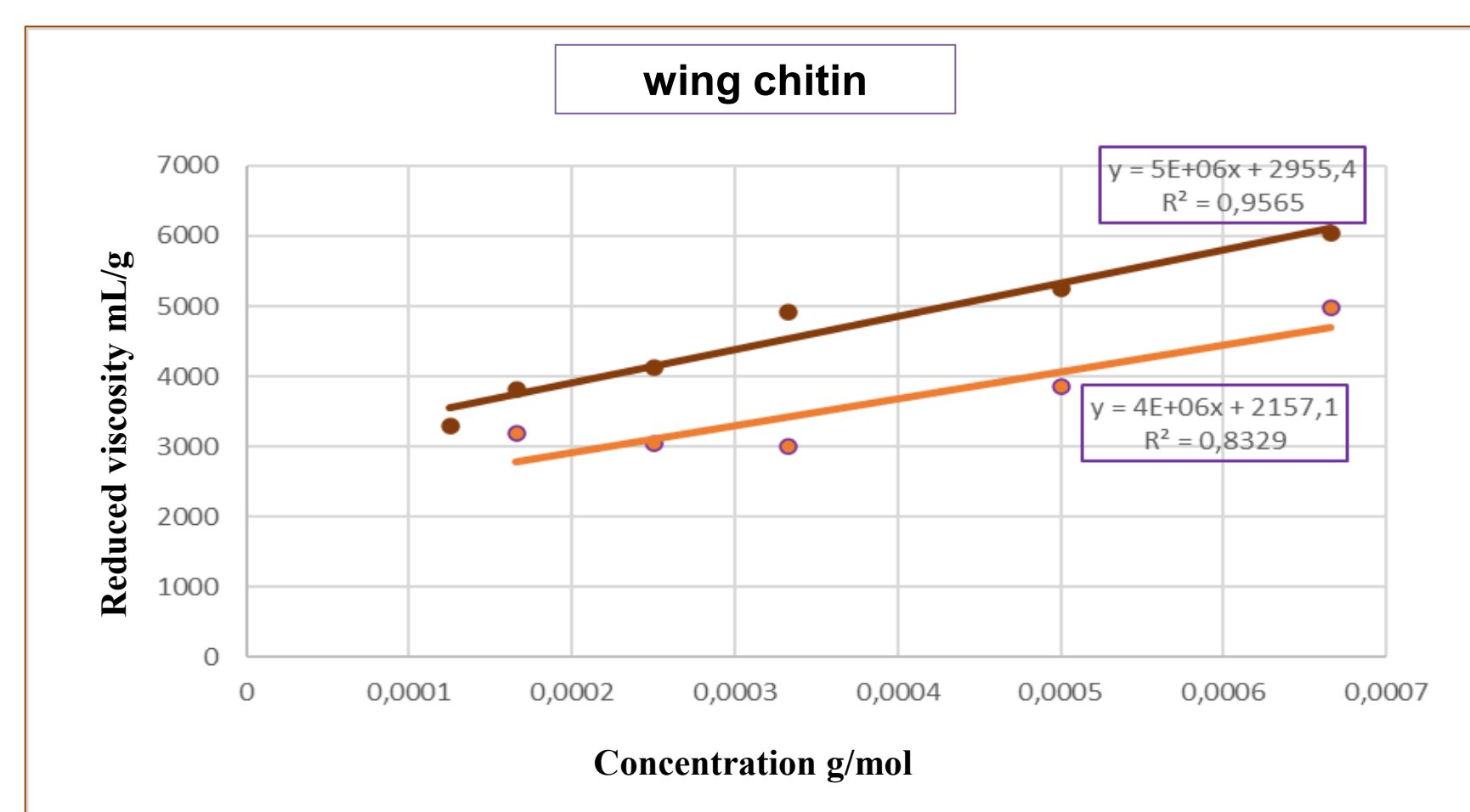
MATERIALS AND METHODS



Chitin from wings	Number of baths	Chitin content (%)	Mv (g/mol ⁻¹)
Deproteinization	7	10	537 000
Deproteinization + depigmentation	4	29	847 000

Depigmentation allowed to:

- Reduce the number of baths (from 7 to 4)
- Improve the chitin yield (from 10% to 29%)
- Increase the molecular weight (from 537,000 to 847,000 g/mol)



CONCLUSION

This study highlights the importance of investigating the role of the source and the process in determining the physicochemical properties of chitin and chitosan.

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- Tolaimate, A., Desbrieres, J., Rhazi, M., & Alagui, A. (2003). Contribution to the preparation of chitins and chitosans with controlled physico-chemical properties. *Polymer*, 44(26), 7939–7952. <https://doi.org/10.1016/j.polymer.2003.10.025>