



Phytochemical study, insecticidal activity of extracts and compounds isolated from the leaves of *Bobgunnia madagascariensis* (Fabaceae) against adults of *Callosobruchus maculatus*



Edwige Haman Anagued¹, Jean Momeni¹, Gaston Domga¹ and Mahamat²

¹Department of Chemistry, Faculty of Science, University of Ngaoundere, PO Box 454, Ngaoundere, Cameroon

²Department of Biological Sciences, Faculty of Science, University of Ngaoundere, P. O Box 454, Ngaoundere, Cameroon

Introduction

Agriculture is one of the appropriate ways to fight famine in the world and in Africa in particular. Stored foodstuffs after haverst are destroyed by several types of insects. The objective of this work is to evaluate the extracts and compounds of the leaves of *Bobgunnia madagascariensis* against the adults of *Callosobruchus maculatus*, one of the main pests of foodstuffs stored in granaries in Cameroon.

Material and Methods

The plant material use is the leaves of *Bobgunnia madagascariensis* and the biological material is *Callosobruchus maculatus*, one of the pests that cause major losses to cowpea (*Vigna unguiculata*) in Cameroon;

Extraction of leaves powder by sequential maceration using succesively: dichloromethane, ethyl acetate, acetone and ethanol help to obtain the different extracts ;

The insecticide test on extracts and compounds was carried out according to the method used by Ndomo *et al.* (2009) with some modifications.

Results and discussion

Tableau 1 show the DL50 values of the differents extracts and lupeol

	DL ₅₀ (g of extract per gram of cowpea)
Dichloromethane extract	0,24
Ethyl acetate extract	0,28
Mixture of dichloromethane and ethyl acetate extracts	0,09
Lupeol	10,0

Table 1 shows that all the extracts are toxic against *Callosobruchus maculatus* adults but the mixture of the two extracts is more toxic than the extracts tested separately.

Fig. 1 shows the mortality of insects from the mixture of the two extracts which rises to 100% on the sixth day of the test.

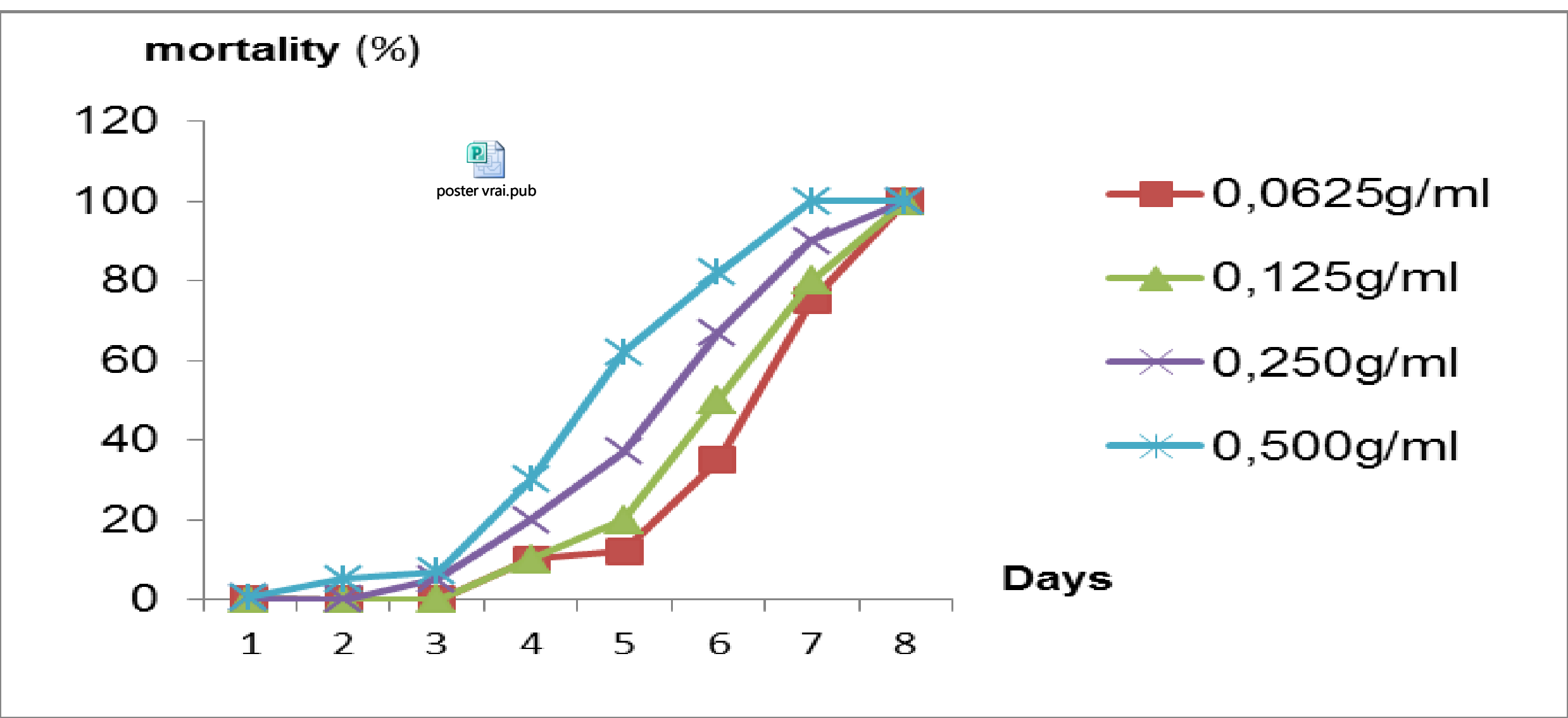


Fig. 1 : Insecticide test of the mixture of dichloromethane extract and ethyl acetate extract of *C. maculatus*

Fig. 2 shows the percentage of insect mortality using lupeol

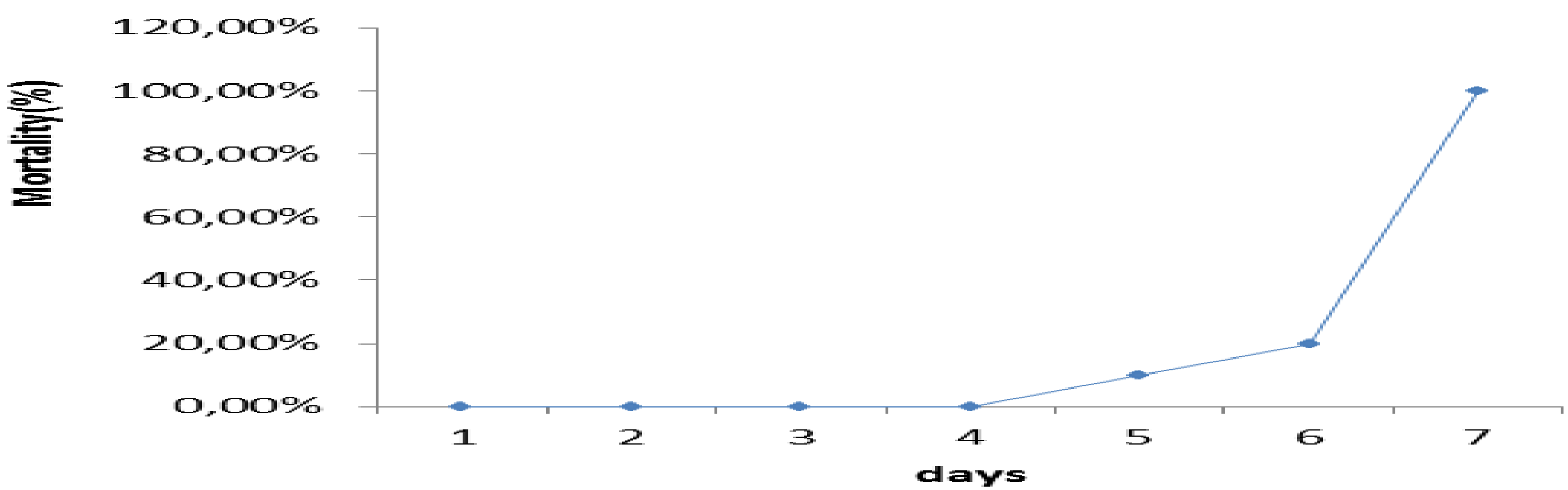
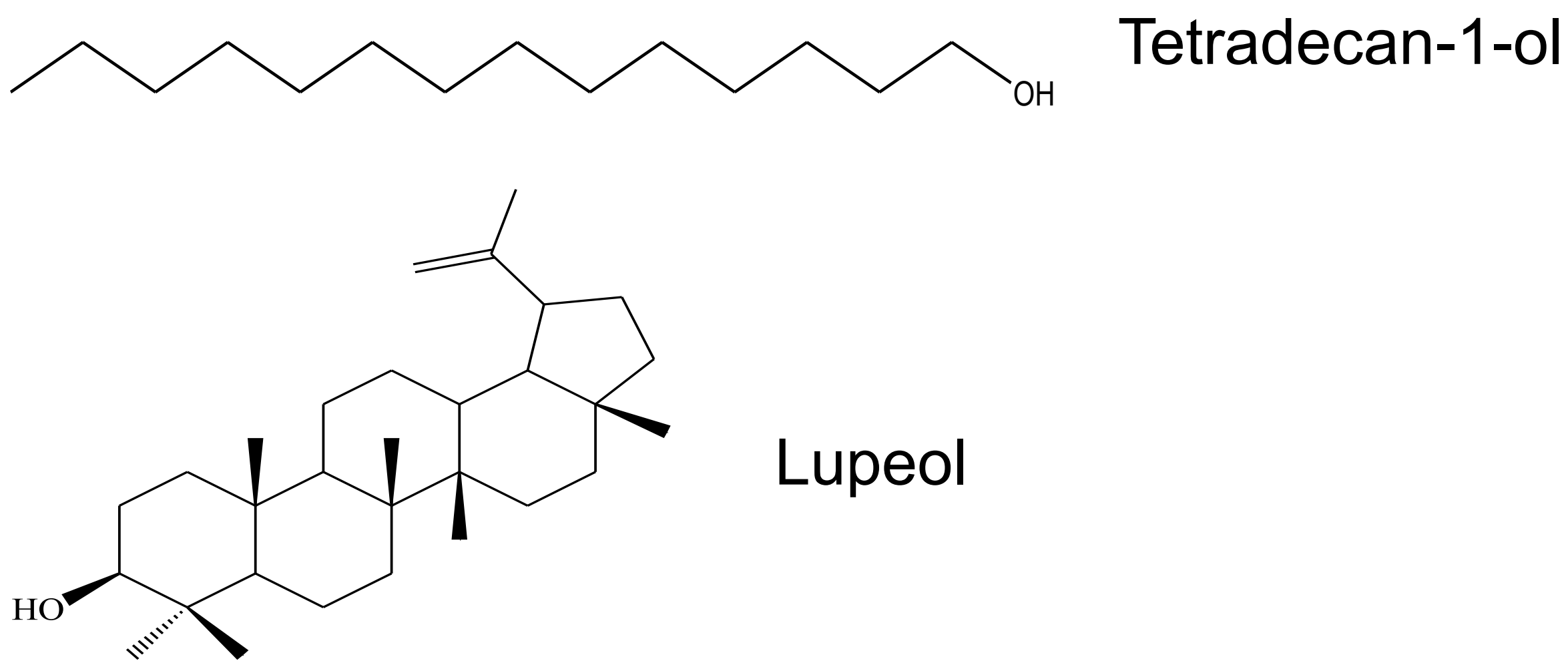


Fig.2 : insecticidal test of lupeol against adults *C. maculatus*

Two compounds were isolated. 1H and 13C NMR allowed us to identify them to Tetradecan-1-ol and Lupeol.



Conclusion : Extracts and lupeol from the leaves of *Bobgunnia madagascariensis* have insecticidal properties. The leaves of this plant can be used as bio-pesticides.

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