ACTIVITY OF QUINOLIZIDINE ALKALOIDS FROM THREE MEXICAN *LUPINUS* AGAINST THE LEPIDOPTERAN CROP PEST *SPODOPTERA FRUGIPERDA*.

ABSTRACT

Bitter lupins (*Lupinus* spp.) are not used as a protein source because of their toxicity. However, they may have alternative uses as potential sources of natural insecticides. Quinolizidine alkaloids (QA) of three Mexican *Lupinus* species (Fabaceae): *L. montanus* (HBK), *L. stipulatus* (Agardh) and *L. aschenbornii* (Schauer), were analyzed by capillary Gas Chromatography-Mass Spectrometry. Sparteine was found in high amounts in both *L. montanus* and *L. aschenbornii* while the major alkaloids in *L. stipulatus* extract were aphylline and an epiaphylline-like compound. Alkaloid extracts were tested for their insecticidal activity using larvae of the Fall Armyworm, *Spodoptera frugiperda* (Smith); (Lepidoptera, Noctuidae) as a model pest. We compared LD_{50} values and mean weight of caterpillars fed with alkaloid extracts of the three species studied with those of sparteine, a widespread QA found in various lupin species. Extracts of *L. montanus* and *L. aschenbornii* were found to be as effective as sparteine and extracts *L. stipulatus* were found to be the most toxic against the larvae of *S. frugiperda*. This suggests that the various QA act differently on caterpillars, and could be used to control *Spodoptera* populations.

http://link.springer.com/article/10.1007%2Fs10526-008-9180-y

CEPROBI - IPN

Autores: Kalina Bermúdez-Torres*, Jorge Martínez Herrera, Rodolfo Figueroa Brito, Michael Wink, Luc Legal.

Revista: Biocontrol. Volume 54, Issue 3, pages 359 – 466.