

# Bio-Pesticide from Custard Apple Seed

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**Abstract:** *The present investigation was conducted to evaluate the antibacterial and Insecticidal efficiency of traditional plant Annona squamosa. Seeds extract of plant Annona squamosa were prepared by methanol extraction method with different feed (custard apple powder) to solvent ratio of 1:1, 1:2, 1:3 and 1:4 as custard apple seed to the methanol. At ratio of 1:4 shows the 80- 85 % recovery of biopesticide which is optimum value. Tests of susceptibility for larvae and imaginal stage of mosquitoes were realized to determine mortality and LC50 of mosquitoes. Chemical identifications showed that these extracts contain alkaloids and flavonoids compounds that probably confer their biological Pesticidal proprieties. Pesticidal effects were observed with methanol extracts of seeds of Annona squamosa. The seed extracts of plants may be used as a natural Pesticide. Bio-pesticides are eco-friendly pesticides which are obtained from naturally occurring substances (biochemicals), microbes and plants. Not all-natural products are biopesticides. Some are chemical pesticides if they act on nervous system of the pest. Biopesticide reduces the pollution which make earth life safe, protecting the human and animal health. Quality of crops also clean due to bio or organic pesticides.*

**Keywords:** Bio-Pesticide, Custard Apple Seed, Extraction, Solvents

## REFERENCES

- [1]. Ajay. V. Gawali<sup>1</sup>, Sapna K. Denotable and Toes Younus Shaikh, Annona Squamosa: A Source of Natural Pesticide, Department of Chemical Engineering, A. E. C., Chikhli, India, International Advanced Research Journal in Science, Engineering and Technology, Jawaharlal Darda Institute of Engineering and Technology, Avital, Vol. 4, Special Issue 3, January 2017.
- [2]. Department of Anesthesiology & Critical Care, Mahatma Gandhi Medical College and Research Institute, Sri Balaji Vidyapeeth University, Puducherry, India.
- [3]. Kulkarni C.P. and Kirti M. Antibacterial and Insecticidal Activity of Crude Seed Extracts of Annona squamosa, Department of Chemistry and Doongursee College of Arts, Science and Commerce, Dadar (W), Mumbai - 400028, INDIA, International Journal of Pharmaceutical Science Invention ISSN (Online): 2319 – 6718, ISSN (Print): 2319 – 670X www.ijpsi.org Volume 6 Issue 9 | September 2017 | PP. 25-29
- [4]. Kalpana Gyawali, Pesticide Uses and its Effects on Public Health and Environment, Lecturer, Sanathimi Campus, Bhaktapur, Journal of Health Promotion, Vol. 6, June 2018.
- [5]. Lokhande A.R. and Wane K.S., Study of Diethanolamide in Custard Apple Seed, Department of Chemical Engineering college, SSBT's Jalgaon, India, International Journal of Engg. and Research Tech. IJERT, ISSN, 2278- 0181, Vol 2, Sep 2013.
- [6]. M R Suchitra and S Parthasarathy, Department of Biochemistry, SASTRA university (SRC), Kumbakonam and Department of Anesthesiology & Critical Care, Mahatma Gandhi Medical College and Research Institute, Sri Balaji Vidyapeeth University, Puducherry, India, Research Journal of Pharmaceutical, Biological and Chemical Sciences, May - June 2015, RJPBCS ISSN: 0975-8585
- [7]. Suman Gupta and A. K. Dikshit, Biopesticides: An eco-friendly approach for pest control, Journal of Biopesticides 3(1 Special Issue) 186 - 188 (2010).

- [8]. Shilpi Sharma and Pramila Malik, Biopesticides, Types and Applications, Post Graduate Govt College, Sector-11, Chandigarh, India, International Journal of Advances in Pharmacy, Biology and Chemistry, IJAPBC – Vol. 1(4), Oct- Dec, 2012 ISSN: 2277 – 4688.
- [9]. Shukla N, Kabadwa B.C., Sharma R and Kumar J, Present Status and Future Prospects of Bio- Agents in Agriculture, International Journal of Current Microbiology and Applied Sciences ISSN: 2319-7706, Volume 8, Nov 04 (2019).
- [10]. Sharma B. and Pandey R., Toxicity Potential and Anti AChE Activity of Some Plant Extracts in *Musca domestica* Nighat Begum, Department of Zoology, and Department of Biochemistry, University of Allahabad, Allahabad-211002, India.
- [11]. Shweta Raghav, Rajveer Kaur and Gurjot Kaur Mavi, Pesticides Classification and its Impact on Environment, Department of Veterinary Anatomy, Fisheries, Guru Angad Dev Veterinary and Animal Sciences University, School of Animal Biotechnology and Department of Animal Genetics and Breeding, Ludhiana-141004 (Punjab), India, International Journal of Current Microbiology and Applied Sciences ISSN: 2319-7706 Volume 8 Number 03 (2019).
- [12]. Tulsi Bhardwaj and J.P. Sharma, Impact of Pesticides Application in Agricultural Industry: An Indian Scenario, Division of Agricultural
- [13]. Extension, IARI, Pusa, New Delhi, International Journal of Agriculture and Food Science Technology. ISSN 2249-3050, Volume 4, Number 8 (2013), pp. 817-822.
- [14]. Toxicity Potential and Anti AChE Activity of Some Plant Extracts in *Musca domestica* Nighat Begum, Ravi S. Pandey and Buchan Sharma, Department of Zoology, and Department of Biochemistry, University of Allahabad, Allahabad- 211002, India.
- [15]. Vaishali Kendal, Biopesticides, Agricultural Engineering, G. B. P. U. A. T. Pantnagar, Uttarakh and, INDIA.
- [16]. Website [http://www.agrilife.in/biopesti\\_botananosom.htm](http://www.agrilife.in/biopesti_botananosom.htm) (Jully 2021)