**College of Agriculture**

**University of Sargodha, Sargodha**

**Department of Entomology**

**Synopsis for the M.Sc. (Hons.) Agri. Entomology**

###### Title: Determination of oral and dermal toxicity of different concentrations of acetamiprid on the mortality of *Apis mellifera* L. (Hymenoptera: Apidae)

Name of student : Owais Hameed

Registration No. : PAGF16 E050

**ABSTRACT**

Honey bee is a widely managed crop pollinator that provides sustainability and economic viability to the agricultural industry needed to satisfy the food and fiber requirements of our society. Excessive use of agrochemicals such as acetamiprid …………. (One Paragraph; About 250 – 300 words)

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Date of admission : 19-09-2016

Date of initiation : 26-09-2016

Probable duration : 02 Years

**PERSONAL**

Name of student : Owais Hameed

Registration No. : PAGF16 E050

Supervisor : Dr. Muhammad Anjum Aqueel

**SUPERVISORY COMMITTEE:**

1. **Supervisor**

Dr. Muhammad Anjum Aqueel \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Assistant Professor (Entomology)

1. **Co-supervisor**

 Dr. Abu Bakar Muhammad Raza \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Associate Professor (Entomology)

**1. Introduction**

Food production must be increased to feed the growing population of the world. According to an estimate ………………………. (about 750-1000 words) (In paragraphs form)

**1.1 Need of Research Project** (One paragraph about 80-100 words)

**1.2 Research Objectives** (with roman numbering)

**2. Review of literature**

(In paragraphs form) (About 1500-2000 words)

(Section wise; Each section may be given the sub-heading with numbering e.g.)

**2.1 Toxicity of acetamiprid to honey bees**

The effects of acetamiprid were studied after acute sublethal treatment on behavior of the honeybees under controlled laboratory conditions by ……………..

(With in each section, the references should be in coronological order)

**3. Materials and methods**

(About 500-700 words)

(Section wise; Each section may be given the sub-heading with numbering e.g.)

**3.1 Preparation of concentrations**

From stock solution of acetamiprid, three concentrations of 25 ppm, 50 ppm and 100 ppm will be prepared……………

**4. Literature cited**

(University recommends APA style. However, all references must be in same style and format; 1.5 line spacing; Times Roman style; No gap in between the references). For Example;

(Abidi et al., 1989) (Journal)

(Cresswell et al., 2012) (Journal)

(Chen et al., 2004) (Journal)

(Godfray, 1994) (Book)

(Lopez & Levinton, 2011) (Book Section)

(Purves et al., 2005) (Conference)

(Crickmore et al., 2015) (Web page)

Abidi, A. Z., Kumar, A. & Tripathi, C. (1989). Impact of males on the numerical response of *Diaeretiella rapae* (M'Intosh)(Hym., Aphidiidae), a parasitoid of *Lipaphis erysimi* Kalt.(Hem., Aphididae). *Zoosystematics and Evolution, 65*(1), 161-169.

Chen, Y. Z., Lin, L., Wang, C. W., Yeh, C. C. & Hwang, S. Y. (2004). Response of two *Pieris* (Lepidoptera : Pieridae) species to fertilization of a host plant. *Zoological Studies, 43*(4), 778-786.

Cresswell, J. E., Page, C. J., Uygun, M. B., Holmbergh, M., Li, Y., Wheeler, J. G., Laycock, I., Pook, C. J., de Ibarra, N. H. & Smirnoff, N. (2012). Differential sensitivity of honey bees and bumble bees to a dietary insecticide (imidacloprid). *Zoology, 115*(6), 365-371.

Crickmore, N., Baum, J., Bravo, A., Lereclus, D., Narva, K., Sampson, K., Schnepf, E., Sun, M. & Zeigler, D. (2015). *Bacillus thuringiensis* toxin nomenclature. 2014. Retrieved from <http://www.btnomenclature.info/>

Godfray, H. C. J. (1994). Parasitoids: behavioral and evolutionary ecology. *Princeton University Press, Princeton*, pp. 473.

Lopez, G. R. & Levinton, J. S. (2011). Particulate Organic Detritus and Detritus Feeders in Coastal Food Webs. In: E. Wolanski & D. McLusky (Eds.), *Treatise on Estuarine and Coastal Science* (pp. 5-21). Waltham: Academic Press.

Purves, R., Clough, P. & Joho, H. (2005). *Identifying imprecise regions for geographic information retrieval using the web.* Paper presented at the GIS Research UK 13th Annual Conference.

**DECLARATION**

I solemnly declare that I have not been registered with any other university or institution for M.Sc. (Hons.) Agri. Entomology other than the University of Sargodha.

Dated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature of applicant

###### It is certified that the research topic and synopsis have been prepared according to the approved format of University. It is also certified that applicant has not been registered as M.Sc. (Hons.) student in any other University or Institute. Moreover, no research was made on the prepared topic “Determination of oral and dermal toxicity of different concentrations of acetamiprid on the mortality of *Api smellifera* L. (Hymenoptera: Apidae)” previously.

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Assistant Professor (Entomology)

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Associate Professor (Entomology)

**REVIEWED AND WITNESSED**

**Chairman Principal**

Department of Entomology College of Agriculture

College of Agriculture, UOS University of Sargodha, Sargodha

**Dean**

Faculty of Agriculture

University of Sargodha, Sargodha