

APPENDICES

9 APPENDICES

Appendix-A

LIST OF SAMPLING SITES

Sl. No.	Tea Gardens	Latitude	Longitude	Block	District
1	Atal Satbhaiya	26.6739490	88.2117552	Naxalbari	Darjeeling
2	Bagrakote	26.8751372	88.5652404	Mal	Jalpaiguri
3	Binnaguri	26.7576674	89.0504551	Jalpaiguri	Jalpaiguri
4	Dalmore	26.7517723	89.1301554	Madarihat	Jalpaiguri
5	Kalchini	26.6980273	89.4218054	Kalchini	Jalpaiguri
6	Kamalpur	26.7112429	88.3057880	Naxalbari	Darjeeling
7	Kumai	26.9954472	88.8111153	Gorubathan	Darjeeling
8	Kumargram	26.6678478	89.8274703	Kumargram	Jalpaiguri
9	Lankapara	26.7940624	89.1862203	Madarihat	Jalpaiguri
10	Laxmipara	26.8158772	88.9981454	Dhupguri	Jalpaiguri
11	Longview	26.8192146	88.2499914	Kurseong	Darjeeling
12	Maruti	26.6984098	88.3092963	Naxalbari	Darjeeling
13	Matigara	26.7077459	88.3745847	Matigara	Darjeeling
14	Nagrakata	26.9135666	88.8921475	Nagrakata	Jalpaiguri
15	North Bengal University	26.7123224	88.3512609	Naxalbari	Darjeeling
16	Patharjhora	26.9488658	88.6517448	Mal	Jalpaiguri
17	Samsing	26.9866576	88.8064770	Matiali	Jalpaiguri
18	Simulbari	26.7920583	88.3048597	Kurseong	Darjeeling
19	Trihana	26.7617488	88.2624352	Naxalbari	Darjeeling

Appendix-B

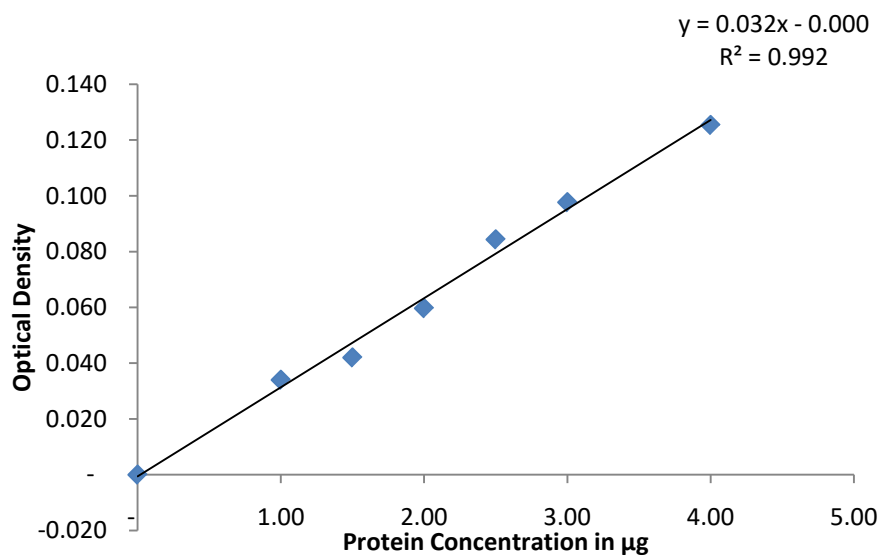


Figure: BSA standard curve for determination of protein concentration

Appendix-C

DATA MATRIX FOR PROBIT ANALYSIS TO DETERMINE HALF THE MAXIMUM INHIBITORY CONCENTRATION (IC₅₀)

1) *In vitro* inhibition of GE by DEF *n=34 for each concentration

GE Inhibition			
Conc. (mM)*	X=Log Dose	%Inhibition	Y=Probit of % Inhibition
0.0794	-1.10	7.50	4.05
0.1658	-0.78	12.88	3.82
0.2500	-0.60	18.03	4.08
0.3330	-0.48	29.00	4.45
0.4762	-0.32	46.52	4.92
0.6349	-0.20	60.88	5.28
0.9995	0.00	75.35	5.67
1.3333	0.12	82.25	5.92

2) *In vitro* inhibition of CYP450 by PBO *n=34 for each concentration

CYP450 Inhibition			
Conc. (mM)*	Log Dose	%Inhibition	Probit of % Inhibition
0.167	-0.78	7.267	3.52
0.333	-0.48	13.787	3.92
0.500	-0.30	25.649	4.36
0.667	-0.18	40.611	4.77
1.000	0.00	61.986	5.31
1.333	0.12	66.261	5.41
2.000	0.30	72.673	5.61
2.667	0.43	86.566	6.13

Appendix-D

LIST OF PUBLICATIONS

1. **Kumar Basnet**, Min Bahadur & Ananda Mukhopadhyay, 2017. Change in activity of detoxifying enzymes in directionally selected population of tea mosquito bug (*Helopeltis theivora*) (Heteroptera: Miridae) by an organophosphate insecticide. *Phytoparasitica* Springer Journal. (Accepted for publication)
2. Ananda Mukhopadhyay, Somnath Roy, Soma Das & **Kumar Basnet**, 2016. Pesticide Resistance in Insect and Mite Pests of Tea in Sub-Himalayan Terai-Dooars Plantations: Status, Detection and Possible Management. In: Tea: Technological Initiatives (ed. by N Bag, A Bag & LMS Palni) New India Publishing Agency, New Delhi, India, p. 346.
3. **Kumar Basnet** and Ananda Mukhopadhyay, 2015. Life history of the spider, *Oxyopes javanus* (Araneae: Oxyopidae), an active predator of tea mosquito bug *Helopeltis theivora* (Heteroptera: Miridae) in Terai-Dooars tea plantations. *NBU Journal of Animal Sciences*, 9: 1-8.
4. **Kumar Basnet** and Ananda Mukhopadhyay, 2014. Biocontrol potential of lynx spider *Oxyopes javanus* (Araneae: Oxyopidae) against the tea mosquito bug, *Helopeltis theivora* (Heteroptera : Miridae). *International Journal of Tropical Insect Science*. Cambridge Journals, Cambridge University Press, 34: 232-238.
5. **Kumar Basnet**, Dhiraj Saha and Ananda Mukhopadhyay, 2015. Enhancement of Resistance vis-à-vis Defence-Enzyme Activity in Tea Mosquito Bug, *Helopeltis theivora* Waterhouse (Hemiptera:Miridae) Selected Through Exposure to Sub-lethal Doses of Monochrotophos. *Proceedings of Zoological Society*, Springer Journal. 68: 184-188.

PAPER PRESENTED AT SYMPOSIA AND SEMINARS

1. **Kumar Basnet** and Ananda Mukhopadhyay, 2015. Defence enzyme based technique for determining insecticide-tolerance level in Tea mosquito bug, *Helopeltis theivora* Waterhouse. National Seminar on 'Plant Protection in Tea: Recent Advances' organized by TRA, Tocklai Tea Research Institute, Jorhat, Assam, India.
2. **Kumar Basnet** and Ananda Mukhopadhyay, 2015. Climate change and its impact on the incidence of Tea mosquito bug, *Helopeltis theivora* Waterhouse in the tea plantations of North Bengal and their possible management. National Seminar on 'Global climate change and its impact on Flora, Fauna and Microbial biodiversity held at St. Joseph's College, Darjeeling, India.
3. **Kumar Basnet** and Ananda Mukhopadhyay. 2014. Study on biological control potential of Lynx spider, *Oxyopes shweta* (Araenea: Oxyopidae) against tea mosquito bug, *Helopeltis theivora* (Heteroptera: Miridae). AZRA Silver Jubilee International Conference, organised by Applied Zoologists' Research Association (AZRA) held at Cuttack, Odisha, India.
4. **Kumar Basnet** and Ananda Mukhopadhyay. 2012. A new technique for determining the tolerance level of tea pests against pesticides. Plantation Crop Symposium XX, held at Coimbatore, Tamil Nadu, India.