



## Supplementary Material

# Differential Impact of Different Land-Use Types on the Population Density and Community Assemblages of Edaphic Macroinvertebrates in District Sargodha, Punjab, Pakistan

Muhammad Zeeshan Majeed<sup>1,2,\*</sup>, Abu Bakar Muhammad Raza<sup>2</sup>, Muhammad Afzal<sup>2</sup>, Hafiz Salah-ud-Din<sup>2</sup>, Imtiaz Sarwar<sup>2</sup>, Muhammad Yahya<sup>2</sup> and Khurram Shehzad<sup>3</sup>

<sup>1</sup>State Key Laboratory for Biology of Plant Diseases and Insect Pests, Institute of Plant Protection, Chinese Academy of Agricultural Sciences, Beijing 100193, PR China

<sup>2</sup>Department of Entomology, College of Agriculture, University of Sargodha, 40100, Sargodha, Pakistan

<sup>3</sup>Department of Soil and Environmental Sciences, College of Agriculture, University of Sargodha, 40100, Sargodha, Pakistan

\* Corresponding author: shani2000\_uaf@yahoo.com; zeeshan.majeed@uos.edu.pk  
0030-9923/2018/0003-0911 \$ 9.00/0  
Copyright 2018 Zoological Society of Pakistan

**Supplementary Table I.- Analyses of variance for various macrofaunal groups collected from different land-use types in district Sialkot during winter 2014.**

	Source	DF	SS	MS	F	P
Ants ( <i>Monomorium</i> sp.)	Land-use	6	0.98008	0.16335	4.86	0.0010
	Error	35	1.17542	0.03358		
	Total	41	2.15550			
	Grand Mean		0.6031			
	CV		30.39			
Ants ( <i>Camponotus</i> sp.)	Land-use	6	0.19131	0.03189	1.71	0.1479
	Error	35	0.65280	0.01865		
	Total	41	0.84411			
	Grand Mean		0.4314			
	CV		31.66			
Coleopteran grubs	Land-use	6	0.45755	0.07626	6.66	0.0001
	Error	35	0.40082	0.01145		
	Total	41	0.85836			
	Grand Mean		0.4564			
	CV		23.45			
Crickets	Land-use	6	0.05040	0.00840	0.68	0.6634
	Error	35	0.42960	0.01227		
	Total	41	0.48000			
	Grand Mean		0.3800			
	CV		29.16			

	<b>Source</b>	<b>DF</b>	<b>SS</b>	<b>MS</b>	<b>F</b>	<b>P</b>
Earthworms	Land-use	6	0.47669	0.07945	4.01	0.0037
	Error	35	0.69415	0.01983		
	Total	41	1.17084			
	Grand Mean		0.4712			
	CV		29.89			
Earwigs	Land-use	6	0.38733	0.06455	3.64	0.0065
	Error	35	0.62035	0.01772		
	Total	41	1.00768			
	Grand Mean		0.4407			
	CV		30.21			
Ground beetles	Land-use	6	0.37423	0.06237	4.68	0.0014
	Error	35	0.46620	0.01332		
	Total	41	0.84043			
	Grand Mean		0.4643			
	CV		24.86			
Holometabolus larvae	Land-use	6	0.12291	0.02049	2.23	0.0636
	Error	35	0.32220	0.00921		
	Total	41	0.44511			
	Grand Mean		0.3814			
	CV		25.15			
Isopods	Land-use	6	0.35392	0.05899	3.58	0.0072
	Error	35	0.57667	0.01648		
	Total	41	0.93059			
	Grand Mean		0.4438			
	CV		28.92			
Myriapods	Land-use	6	0.04166	0.00694	1.23	0.3143
	Error	35	0.19740	0.00564		
	Total	41	0.23906			
	Grand Mean		0.3329			
	CV		22.56			
Rove beetles	Land-use	6	0.63301	0.10550	4.67	0.0014
	Error	35	0.79010	0.02257		
	Total	41	1.42311			
	Grand Mean		0.4914			
	CV		30.57			
Spiders	Land-use	6	0.72275	0.12046	6.32	0.0001
	Error	35	0.66737	0.01907		
	Total	41	1.39011			
	Grand Mean		0.5314			
	CV		25.98			
Surface grasshopper	Land-use	6	0.10091	0.01682	1.37	0.2534
	Error	35	0.42933	0.01227		
	Total	41	0.53025			
	Grand Mean		0.3781			
	CV		29.29			

**Supplementary Table II.- Analyses of variance for various macrofaunal groups collected from different land-use types in district Sialkot during summer 2015.**

	Source	DF	SS	MS	F	P
Ants ( <i>Monomorium</i> sp.)	Land-use	6	1.25306	0.20884	10.03	0.0000
	Error	35	0.72898	0.02083		
	Total	41	1.98204			
	Grand Mean		0.6555			
	CV		22.02			
Ants ( <i>Camponotus</i> sp.)	Land-use	6	0.24718	0.04120	3.97	0.0039
	Error	35	0.36327	0.01038		
	Total	41	0.61045			
	Grand Mean		0.4748			
	CV		21.46			
Coleopteran grubs	Land-use	6	0.23053	0.03842	2.13	0.0746
	Error	35	0.63180	0.01805		
	Total	41	0.86233			
	Grand Mean		0.4967			
	CV		CV 27.05			
Crickets	Land-use	6	0.10131	0.01689	1.41	0.2381
	Error	35	0.41880	0.01197		
	Total	41	0.52011			
	Grand Mean		0.3914			
	CV		27.95			
Earthworms	Land-use	6	0.64872	0.10812	7.54	0.0000
	Error	35	0.50187	0.01434		
	Total	41	1.15059			
	Grand Mean		0.5695			
	CV		21.03			
Earwigs	Land-use	6	0.36263	0.06044	5.59	0.0004
	Error	35	0.37813	0.01080		
	Total	41	0.74076			
	Grand Mean		0.4810			
	CV		21.61			
Ground beetles	Land-use	6	0.21352	0.03559	2.20	0.0665
	Error	35	0.56667	0.01619		
	Total	41	0.78019			
	Grand Mean		0.5238			
	CV		24.29			
Holometabolus larvae	Land-use	6	0.36453	0.06076	3.64	0.0065
	Error	35	0.58420	0.01669		
	Total	41	0.94873			
	Grand Mean		0.4433			
	CV		29.14			

	<b>Source</b>	<b>DF</b>	<b>SS</b>	<b>MS</b>	<b>F</b>	<b>P</b>
Isopods	Land-use	6	0.28749	0.04792	2.40	0.0478
	Error	35	0.69895	0.01997		
	Total	41	0.98644			
	Grand Mean		0.4488			
	CV		31.49			
Myriapods	Land-use	6	0.12406	0.02068	2.25	0.0607
	Error	35	0.32113	0.00918		
	Total	41	0.44519			
	Grand Mean		0.3538			
	CV		27.07			
Rove beetles	Land-use	6	0.69010	0.11502	6.70	0.0001
	Error	35	0.60115	0.01718		
	Total	41	1.29125			
	Grand Mean		0.5250			
	CV		24.96			
Spiders	Land-use	6	0.58861	0.09810	5.33	0.0005
	Error	35	0.64383	0.01840		
	Total	41	1.23245			
	Grand Mean		0.5481			
	CV		24.75			
Surface grasshopper	Land-use	6	0.19326	0.03221	1.94	0.1019
	Error	35	0.58160	0.01662		
	Total	41	0.77486			
	Grand Mean		0.4229			
	CV		30.48			