

**Table S1.** Analysis of variance (mean square) for the effect of seasons in different regions of Punjab regarding water quality parameters.

Source	Degree of freedom	Mean squares		
		pH	EC	Temperature
Season (S)	1	0.21904**	3122984**	1420.710**
Regions (R)	2	0.00561	482927	0.710**
S × R	2	0.00258	210042	0.470*
Error	84	0.01351	305991	0.099
Total	89			

NS = Non-significant (P>0.05); \* = Significant (P<0.05); \*\* = Highly significant (P<0.01); Water quality parameters= pH, EC (Electrical conductivity (μS), Temperature(°C) Seasons=winter and summer; Regions=Core area, Non-core area, Marginal area

**Table S2.** Analysis of variance (mean square) for the effect of seasons in different regions for neonicotinoids pesticide residues in potable water.

Source	Degree of freedom	Mean squares				
		Thiamethoxam	Imidacloprid	Thiacloprid	Acetamiprid	Fipronil
Season (S)	1	21917796**	25637454*	1226111**	1982532*	254409**
Regions (R)	2	182703534**	99975468**	2093291**	9328416**	2192363**
S × R	2	20279626**	13067077*	176068 <sup>NS</sup>	849659 <sup>NS</sup>	173360**
Error	84	1792854	4104954	123239	477318	31399
Total	89					

NS = Non-significant (P>0.05); \* = Significant (P<0.05); \*\* = Highly significant (P<0.01)  
Seasons=winter and summer; Regions=Core area, Non-core area, Marginal area

**Table S3.** Analysis of variance (mean square) for the effect of seasons in different regions for organophosphates and carbamates pesticide residues in potable water.

Source	Degree of freedom	Mean squares				
		Triazophos	Profenofos	Chlorpyrifos	Carbaryl	Cypermethrin
Season (S)	1	21429**	42581891**	14969164**	9758654**	1828956**
Regions (R)	2	73399**	84884012**	96636756**	64494302**	12660383**
S × R	2	8229**	14895825**	11747829**	6449233**	1421680**
Error	84	1250	641630	967921	907020	110517
Total	89					

NS = Non-significant (P>0.05); \* = Significant (P<0.05); \*\* = Highly significant (P<0.01)  
Seasons=Winter and Summer; Regions=Core area, Non-core area, Marginal area