

Sample collection campaign from 19.05.2022 in Moldova Nouă area for sustainability of the RoS-NET2 project: ecotoxicological analysis at molecular level

As an effect of water, soil, and sediment samples on acid phosphatase activity can be observed in the following table. The assay consisted of reading the product Para nitrophenol spectrophotometrically at 405 nm obtained from para nitrophenyl phosphate, which is a substrate for acid phosphatase. The product can be read only in basic pH.

Table 1 Results of enzymatic activity of acid phosphatase in contact with surface water samples (W18-W23), groundwater samples (WU11-WU14), sediment samples (S82-S84) and soil samples (S85-S88)

Sample ID	OD405 Mean	EA mg/ml*min	Yield %
H ₂ O	0.450	0.339	89
Buffer Citrate	0.505	0.380	100
NaOH	0.056	0.042	11
Ammonium Molybdate	0.077	0.058	15
W18	0.438	0.329	87
W19	0.507	0.381	100
W20	0.444	0.334	88
W21	0.449	0.338	89
W22	0.361	0.272	72
W23	0.400	0.301	79
WU11	0.465	0.350	92
WU12	0.442	0.332	87
WU13	0.442	0.332	87
WU14	0.511	0.385	101
S82	0.500	0.376	99
S83	0.558	0.420	110
S84	0.537	0.404	106
S85	0.456	0.343	90
S86	0.347	0.261	69
S87	0.509	0.383	101
S88	0.482	0.363	95

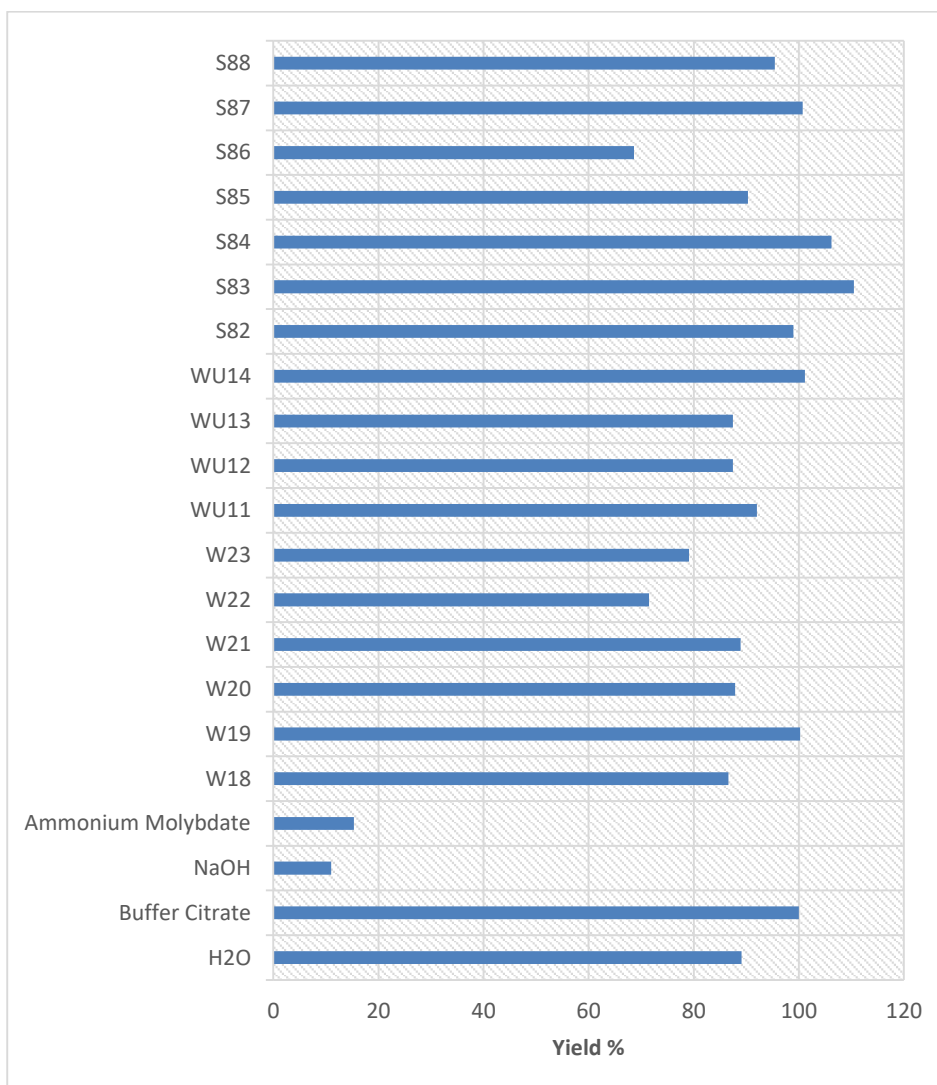


Figure 1 Yield of acid phosphatase activity inhibited by surface water samples (W18-W23), groundwater samples (WU11-WU14), sediment samples (S82-S84) and soil samples (S85-S88)

The effect of the water and soil solutions from the Moldova Noua area on the enzymatic activity of the acid phosphate enzyme was tested, and the results showed that the S86 sample had the most inhibitory effect on the enzymatic activity, and the S83 sample had the effect of increasing the enzymatic activity.