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2

Deterioration and Aggregation of A Few Heavy Metals in Agricultural Soils And Dicoccum of Industrial Zone

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ABSTRACT To assessing degree of adulteration and aggregation of soils as well as different parts of Dicoccum of the industrial area by heavy metals includes: cobalt (Co), Nickel (Ni), copper(Cu), the Iron (Fe), and total Manganese (Mn). Basic aim to this work is checking of whether pollution is occurred for metal of soils those are obtained by water from nearest river different activities occurring in industries includes the cultivating of dicoccum wheat. For this case sampling is distributed on total four stations of agricultural, surface as 0cm to 15cm along with depth as 15cm to 30cm are performed. Physicochemical analyses are performed. Different dosages, with the help of spectrometry by flame, are carried out over the samples of soil, various parts of wheat containing grains, leaves, roots as well as stems. Finally, values achieved revealed that decreasing metal pollution in soil, strength of heavy metals of soils along with plants of wheat. In some plots, average strength of Cu in soils surpass limit value and results are correlated from literature. The liquid effluents, industrial operations along with agricultural practices disproportionate may be in the beginning of aforementioned pollution by metal.

Keywords: Dicoccum wheat, Agriculture, Physico-chemical parameters, Soils, Pollution from Metals.

I. INTRODUCTION

In general heavy metals were present in the earth crust, by the activities performed by humans and naturally in agriculatural lands. In actual practice these wont undergoes biodegradation. These may present in soil as well as living organisms [1-2]. Mechanisms for absorption to trace elements which are present in roots of plants were not yet studied, maximum elements by plants takes free ionic species only[3]. Both metals like Cu, Zn get inside to leaf as Pb[4]. In solution, low strength for Zn contains pH as 7-8[5]. Degradation of organic matter are more crucial to soil-plant migration of Ni[6]. More than 10.00mg/kg MS, Ni become toxic for plants those are more sensitive greater to 50.00mg/kg MS to tolerant plants[7]. When compared with remaining elements, Cr consists of phyto avialability as very low [8-9]. Roots consists Cr^{+3}, Cr^{+6} is transferred for parts of aerial [8]. If it is a either basic or neutral Cr is acting as a more phyto available to that of acid in soil [9]. Average strength to Cr in soil is 50.00mg/kg MS [10]. In the range 0.01mg/kg – 5.00 mg/kg MS, Ni is noted as a required element. It preserves necrosis by association of urease, which is more responsible to hydrolysis of urea in level of leaves[11]. By considering all these author has chosen total four agricultural areas of Adayar subjected to campaign. In this present author has tried to assess various levels of accumulation of metals includes Co, Ni, Cu, Fe, Mn those are present in soils along different parts of industrial areas. Authors are studied physic-chemical parameters includes pH water, cationic exchange capacity (CEC), porosity, moisture, texture, moisture, pH of KCl, electrical conductivity (CE), content of organic matter. The objective of this work is to assess the degree of accumulation and pollution in soils of agricultural along with various regions dicoccum, by referring to values those are reported in literature.

II. MATERIALS AND METHODS

Context in Geology and hydrology

Adayar River is located in to the south on south–eastern coast of India in north–eastern part of Tamil Nadu. [12-13] this area is subjected to characterization with sedimentary as well as field of metamorphic. Which may consist of clays along with sands those contains agricultural lands. Quaternary recent related to sand as well as alluvial silts of Seybouse.

Agricultural activities are generally consuming nearly 60% of available water, meanwhile domestic as well as industrial sectors using 40%. 2/3rd groundwater is utilized to irrigation 3rd for both drinking, industrial purposes. Around 49.276 ha of agricultural land is situated nearer to this bay. This region consists of various industries includes steel, metal as well as business related to agriculture and different industries. Adyar zone consists of green cover as 30.1 percent, which is against 14.9 percent average to cities.

This industrial area of adayar is characterized by various crops those are citrus, tomatoes, water melons along with remaining vegetables those are generally sprinkled by system of irrigation. Some area of non irrigated land is occupied with different crops referred as grain along with pasture to cattle.

Analysis and Sampling

Present area is located in downstream of river named as adayar, among the sea; In the west area Tharamani, In the south area Thiruvanmiyur , In East Besant Nagar, North west as Kotturpuram along with North past as Raja Annamalai puram the Adyar River. The study area is represented in Fig:1.

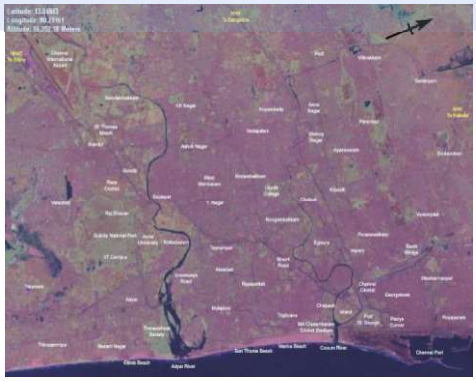

Fig: 1 Schematic view of Adayar

Adyar estuary consists of hundreds of birds species [14] now days which is effected with urbanization activity.[15] For studying origin of contaminations of metal soils, different samples are collected on a plot in control soil, located nearer to 6 km by industrial zone[16].

Authors are carried total two sample carrying campaigns were done. Samples of wheat are collected in same spot of land like agricultural. Samples were subjected to deposition in various plastic bags; those were placed in lab. Temperature is maintained 4°C. Latter samples are subjected to washing and applied for drying process to about 3mm. Basic idea behind this research is for studying aggregation of various elements noted as CO, Ni, Cu, Fe and Mn those are present in soils also various areas of Wheat. For perform, require to identify amount of item which is taken from plant of dicoccum wheat in final research process.Four samples of soil are taken those are within radius of 15m is taken by a Auger stainless steel as 0cm to 20cm and 20cm to 40cm. Nearly, 400grams, depth as same along with samples of same horizon were thoroughly mixed, placed in plastic bags those were numbered.

Soil samples those are collected are processed as per the standard ISO 11 464. These were subjected to drying in air, after that disassembled finally sieved as 2mm in room temperature.

III. SOIL SAMPLES

In order to prepare solution of soil as per the standard procedure authors are followed the same protocol NF ISO 11466 (X 31-415). Described operation was deliberated enough for analyzing metals those are in the state as heavy in both soils as well as sediments [17]. Samples those are collected were subjected to mineralize with the help of HCl+HNO_3 as 4v/v. Mineralization's were skilled over total 4 samples to 0.25gm ± 0.015gm as absorption. After that added 1.90ml - 2.9ml triple distilled water, latter 7.40mL acid as Hydrochloric acid at 36% m/m, density of 1.21gm/mL after that 2.60ml HNO_3 to 66%m/m, density 1.38gm/mL are procured from industry. Final mixture is closed by watch glass, kept in room temperature for 10hrs. Solution is kept over hot plate for about 180minutes with the help of reflux heating. At that instance cooled furthermore filtered over filter paper which is freed from dust. At the final stage attained volume is accustom to 50.00ml by triple condensed water. With the help of atomic absorption spectrometry the solution is renewed to examination and determination of metals.

Samples collected by plant are consists of Co, Ni, Cu, Fe and Mn present in samples collected from various plants. For this analysis authors are adopted the protocol [18].

Distinctive samples those are taken from various stems, roots after that subjected to drying with help of 60°C to 80hr to get mass as less than to that of 5% in total loss. Obtained samples are dry in condition those are applied for crushing in room temperature to pick up particles those consists diameter as less than to 450µm. 0.30gm ± 0.003gm

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of smashed material from the plant is brought out into standard flask accompanying with 4.50mL of nitric acid to 55% m/m, density as 1.28gm/mL and 6.00ml H_2O_2 - 35%m/m, density 1.21gm/ml. After that the obtained sample is kept for 14h to degassing below hoot, latter heated over griddle at a temperature of 95°C to 1h 20min. after that at 160°C for 1h 45min. latter to this time period the sample is subjected to cooling purpose, obtained sample is subjected to filtration with the help of whatman filter paper after that relocated to a vial of 45.00ml, outright to mark at 25°C by triply distilled water. After that solution is discharged in 50.00 mL tube after that at a temperature of 4°C the sample is stored. To this reaction a blank solution is considered to each series of mineralization.

Overall strengths to Co, Ni, Cu, Fe along with Mn occurred in soils as well as various regions of dicoccum are evaluated with the help of AAS with help of flame Air-C_2H_2 nor N_2O-C_2H_2, as system which is a double beam, this is furnished with the help of hollow lamps. The range to spectra broadens at least as 180nm - 900nm. Both the blank as well as standards utilized to calibration are repeatedly tested. At last, study of interference all long dosing to each and every analyzed element is carried out. Various values obtained in this study are represented in Table:1 and Table:2.

Table 1. Textural classification.
Here= Actual density (*Ad); Apparent density (*AD); porosity (*P)

Horizons	Depth (cm)	Coarse sand (%)	Sand - Fine (%)	Slit - Coarse(%)	Silt -Fine (%)	(%)Clay	Ad*(g/cm3)	AD* (g/cm3)	P* (%)
P1	5 - 25 cm	39.90	15.00	12.09	0.56	26.85	2.35	1.54	37.37
	25 to 45 cm	41.19	16.65	9.51	0.46	29.81	-	-	-
P2	5 - 25 cm	41.66	13.06	12.12	0.71	28.11	2.93	1.53	36.42
	25 to 45 cm	42.61	14.34	09.15	0.41	31.74	-	-	-
P3	5 - 25 cm	39.90	16.86	16.89	0.35	24.42	2.46	1.59	38.30
	25 to 45 cm	43.01	15.02	11.12	0.26	27.62	-	-	-
Control soil	5 - 25 cm	36.80	11.02	7.43	1.43	39.68	2.74	1.71	29.63
	25 to 45 cm	37.91	10.51	7.61	0.21	41.82	-	-	-

Table 2. In different months studied Physico-chemical parameters of soils

Horizons	P1	P2	P3	Control soil
H (%)	11.49 ± 0.23	10.99 ± 0.53	11.03 ± 0.27	9.31 ± 0.19
H (%)	16.01 ± 0.03	14.59 ± 0.32	14.00 ± 0.26	10.45 ± 0.29
MO (%)	1.29 ± 0.40	1.31 ± 0.12	1.29 ± 0.15	1.69 ± 0.15
MO (%)	1.51 ± 0.30	1.29 ± 0.11	1.42 ± 0.40	1.79 ± 0.16
pH Water	7.41 ± 0.42	6.41 ± 0.20	7.40 ± 0.12	6.79 ± 0.26
pH Water	7.27 ± 0.23	6.39 ± 0.29	7.31 ± 0.52	6.67 ± 0.26
pH KCL	7.52 ± 0.19	6.30 ± 0.15	7.37 ± 0.18	6.55 ± 0.21
pH KCL	7.13 ± 0.18	7.29 ± 0.02	7.29 ± 0.11	6.76 ± 0.21
EC (mS per cm)	0.22 ± 0.12	0.29 ± 0.31	0.31 ± 0.49	0.32 ± 0.22
EC (mS per cm)	0.46 ± 0.15	0.39 ± 0.41	0.50 ± 0.49	0.29 ± 0.29
CEC (meq per100 gm.)	17.66 ± 1.41	18.11 ± 1.39	15.09 ± 1.42	22.49 ± 1.45
CEC (meq per100 gm.)	16.15 ± 1.21	17.79 ± 1.43	16.79 ± 1.26	23.11 ± 1.29

Horizons Parameters	P1	P2	P3	Control soil
H %	9.21 ± 0.21	7.67 ± 0.08	7.16 ± 0.20	6.88 ± 0.22
H%	11.31 ± 0.03	9.20 ± 0.16	9.50 ± 0.32	8.78 ± 0.18
MO%	1.45 ± 0.19	2.54 ± 0.14	2.60 ± 0.19	2.10 ± 0.15
MO %	1.49± 0.20	2.25 ± 0.09	2.80 ± 0.16	1.98± 0.20
pH Water	7.81 ± 0.11	6.26 ± 0.19	6.31 ± 0.21	6.78 ± 0.19

pH Water	7.30 ± 0.19	6.53 ± 0.31	6.30 ± 0.20	7.86 ± 0.19
pH KCL	7.59 ± 0.10	6.20 ± 0.32	6.31 ± 0.09	6.50 ± 0.11
pH KCL	7.21± 0.21	6.19 ± 0.32	6.20 ± 0.41	6.47± 0.10
EC (mS per cm)	0.58 ± 0.12	0.29 ± 0.19	0.30 ± 0.19	0.31 ± 0.50
EC (mS per cm)	0.49 ± 0.19	0.32 ± 0.30	0.29 ± 0.21	0.54 ± 0.49
CEC (meq per 100 g)	16.29 ± 1.31	17.80 ± 1.19	13.30 ± 1.20	23.67 ± 1.50
CEC (meq per 100 g)	17.83 ± 1.30	18.40 ± 1.29	15.60 ± 1.20	23.87 ± 1.30

IV. RESULTS AND DISCUSSION

Texture and porosity

The fractionation covenant enforcing total two integral approaches includes split by dry appropriate 80 µm latter separation by gravimetric up to 2µm with the help of sedimentation particles by considering the stocks law which allows for classifying particles confer to their diameter.

In the table 1 values for sedimentation to the total two layers 5-25cm and 25 - 45cmare recorded which demonstrates that horizons for soil like P1, P2 and P3. Due to the presence of physicochemical properties to clay they plays a crucial role for the availability of metals like heavy. As per the study authors are finally concluded that heavy metals are absorbed just like to complexes with organic matter of soil forming latter with complex of organo-metallic.

Overall porosity to the soil represented as "% P" which is determined by apparent density represented as "AD" along with actual density which is noted as "ad'. To measure actual density that is purely dependent over volume which may be associated with solid. Cylinder process is adopted for measuring the apparent density. In this case, authors are performed a single measure over samples of soil for deep as 5.0cm – 25.0cm which is interrelated to area of labour.

Total four horizons are consists of reasonably very fine consistency which is distinguished by strong enough enforcement 37.37 porosity; 36.42; 38.30 and 29.63 to P2, P1, P3 as well as ground control.

In general practice solution of the soil accommodates ions of mineral as well as very tiny in size molecules of organic fluctuating in composition along with its mobility also even its obsession over particles of solid.

V. PHYSICOCHEMICAL PARAMETERS

Physicochemical parameters for studied soil with surface area as 5.00cm to 25.00cm along with depth as 25.00cm to 45.00cm are tabulated in the table 2. By considering standard NF ISO 11465 to level of humidity as H% to soils. The obtained samples are applied for drying with the help of oven at a temperature of 105°C ± 5°C in oven as far as mass is stable. Moisture varies from 6.88% to 11.49% in surface from 5.00cm to 25.00cm and 8.78% to 16.01% as 25.00cm to 45.00cm in depth.

Values so obtained reveal that moisture is highly accessible over 25cm to 45cm whenever compared with 5.00cm to 25.00cm. In general practice wheat evokes higher water over the edge of 5.00cm to 25.00cm.

Authors are determined the rate of organic matter (MO%) with the help of Walkey and Black method includes organic fraction of potassium dichromate 1.50N in presence of acidic medium along with a titration in return by Mohr salt at 0.9N.

Soils named as P1, P2 and P3 which are composed over the surface and in depth, consist of very less organic matter. Rate of organic matter varies as 1.31% - 2.10% in both surface as well as 1.29% - 1.98% in depth. In addition to this, identified readings didn't correspond by rate of clay this may changes as 24.42% - 28.11% at deeper of 5.00cm to 25.00cm as well as 27.62; 41.82% at a deeper of 25.00cm to 45.00cm. Soils studied are very poor in the form of organic matter, this is mainly due to non-favorable factors includes climatic, circumstances of topography etc.,

The calculated pH alters as 6.78 to 7.40 for the 5.00cm to 25.00cm layer and 7.86 to 7.31 to the 25cm to 45cm layer. To KCl pH, it is 6.50 to 7.37 to 5cm to 25cm layer as well as 6.47 to 7.29 for layer 25cm to 45cm. Finally, the

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obtained values reveal that environment is reasonably alkaline in nature, by very low reserve acidity, which is distinguished by deviation not more than to that of 0.5. Metals like heavy are able to absorb, undergoes immobilization by minerals of clay those are also able to form complexes with organic matter to soil which forms organo-metallic complex.

VI. RESULTS OF THE ANALYSES OF SOILS

Enlargement to median strengths in terms of units like mg/kg MS for the heavy metals is depicted from Fig. 2-5.

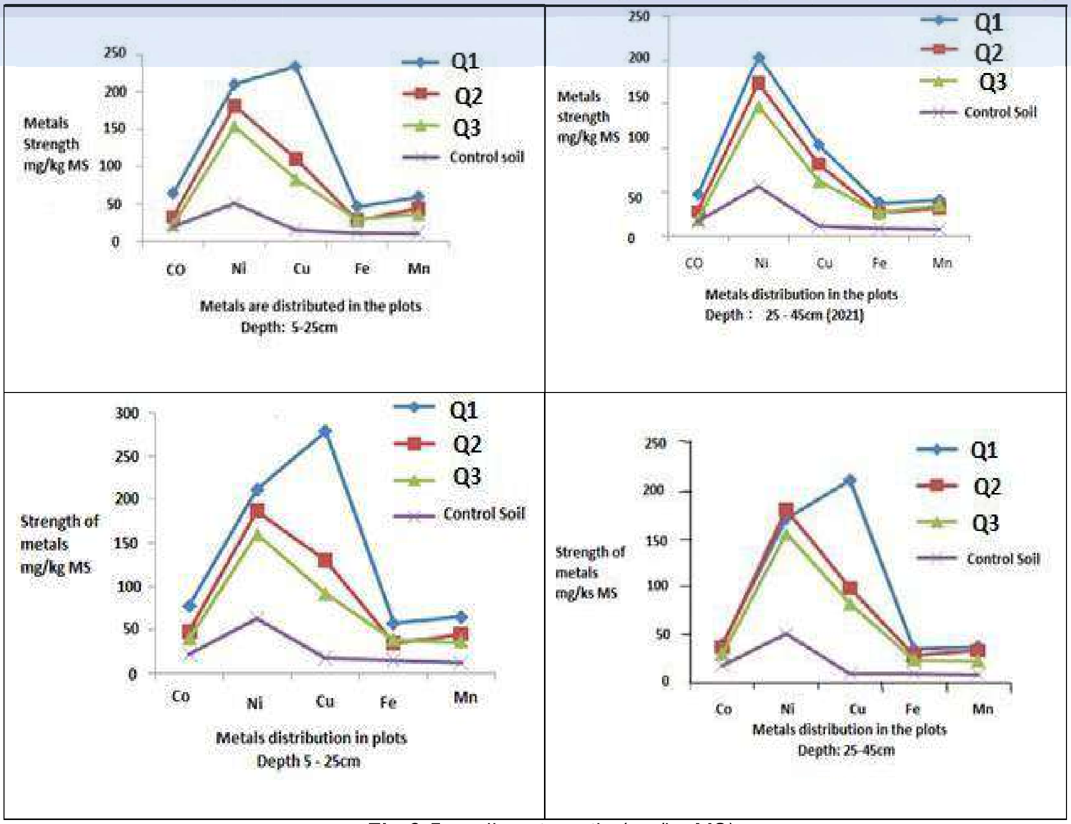

Fig:2-5 median strengths(mg/kg MS)

The results by this work were reported in table 3 and 4. Obtained values reveals that the strength of Co, Ni, Cu, Fe and Mn in soil during dry period should increases marginally by soil composed in wet period, this is mainly due to an increase in temperature as 28°C - 45°C especially in summer generation a pre-strength of soil metals both in as well as solutions from the waters present in nearby industries. The reproducibility of values which are noted in the table 3 are appraised which is depend on coefficients of variation (CV) among the strengths those are achieved by total four samples of soils.

The percentage of CV to total values of assays to metals provides a distribution of homogeneous as <10%. CV as 9.63 in soil named as P2 in measurement of Cu at deep as 25.00cm to 45.0 cm. CV as 1.7 is in control soil in measurement of Mn as deep: 25.00cm - 45.00cm. Strengths obtained by surface as 5.00cm to 25.00cm in soils as P1 and P2 were 243.70 ± 16.01(7.30) and 109.37 ± 8.19 (7.5) and 102.90 ± 6.76 (6.6) and 81.40 ± 4.50 (5.53). 29.09 ± 1.88 (6.89) At a deep 20.00cm to 40.00cm, Pb strength is identified in soil (P1) is 83.49 ± 5.19(6.29).

Heavy metals strength for these soils shows significant increase in the form as Co>Ni>Cu>Fe>Mn; to four areas. Samples are collected at a depth of 5.00cm to 25.00cm, give an identical classification: Co>Ni>Cu>Fe>Mn; for P1, P2 and P2 and P3. In same depth control soil has provided Ni>Co>Fe>Cu>Mn and Co>Ni>Fe>Cu>Mn.

Soil named as P3 were very lowly contaminated. In other hand P2 and P3 provides the values to depth of 5.00cm to 25.00cm along with P1 and P2 to deep as 25.00cm - 45.00 cm. Obtained contamination is generally due to Cu. The values obtained are represented in the Table: 3, 4 and 5.

Table 3. Heavy metal contents in mg/kg.MS by average of 4 measures

	Q1	Q2	Q3	Control soil
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Co	62.79 ± 3.10 (6.64)	33.52 ± 2.30 (7.10)	22.43 ± 1.59 (7.59)	18.58 ± 1.37 (7.21)
Ni	209.19 ± 12.09 (6.19)	179.72 ± 10.49 (5.9)	149.29 ±10.36 (6.59)	49.27 ± 2.74 (5.29)
Cu	243.70 ± 16.01 (7.30)	109.37 ± 8.19 (7.5)	83.49 ± 5.19 (6.29)	16.20 ± 0.89 (6.50)
Fe	47.09 ± 5.29 (9.29)	26.16 ± 2.48 (9.20)	29.09 ± 1.88 (6.89)	12.29 ± 0.86 (6.5)
Mn	59.89 ± 4.09 (5.2)	44.90 ± 1.87 (4.2)	36.59 ± 1.75 (4.6)	11.21 ± 0.61 (5.7)
IP	1.09	0.63	0.49	0.21

Table 4. Heavy metal contents in mg/kg.MS as average of 4 measures

	Q1	Q2	Q3	Control soil
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Co	46.71 ± 3.21 (6.9)	27.62 ± 2.46 (8.9)	18.10 ± 1.30 (7.20)	15.50 ± 1.12 (7.23)
Ni	204.20 ± 12.87 (6.3)	173.84 ± 11.95 (6.9)	147.34 ± 10.63 (7.21)	56.11 ± 3.80 (6.8)
Cu	102.90 ± 6.76 (6.6)	81.40 ± 4.50 (5.53)	62.17 ± 2.74 (4.41)	10.16 ± 0.85 (4.92)
Fe	37.43 ± 1.55 (4.14)	26.08 ± 1.27 (4.9)	26.31 ± 1.80 (6.84)	7.68 ± 0.12 (8.17)
Mn	40.18 ± 1.76 (4.4)	31.55 ± 2.65 (8.4)	35.37 ± 1.72 (4.9)	6.62 ± 0.11 (1.7)
IP	0.59	0.48	0.41	0.13

Table 5. Evolution of metal concentrations as mg/kg in various areas of dicoccum wheat

		P1	P2	P3	Témoin	Reference values
	Organe	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	
Co	roots	6.43 ± 0.26	6.37 ± 0.23	6.15 ± 0.20	6.1 ± 0.21	6.5
		-4.04	-3.61	-3.25	-3.44	
	stems	2.5 ± 0.11	2.8 ± 0.13	2.77 ± 0.16	2.5 ± 0.12	2.8
		-4.4	-4.64	-5.8	-4.8	
	leaves	2.98 ± 0.13	3.12 ± 0.14	3.08 ± 0.11	2.97 ± 0.10	3.1
		-4.4	-4.5	-3.6	-3.4	
	grains	4.25 ± 0.21	2.78 ± 0.12	2.23 ± 0.11	1.15 ± 0.09	4.5
		-5	-4.32	-4.93	-7.83	
Ni	roots	4.96 ± 2.49	45.19 ± 2.09	33.69 ± 2.59	37.87 ± 2.59	396
		-4.81	-4.71	-7.74	-7.03	
	stems	14.7 ± 0.85	13.1 ± 0.60	11.83 ± 0.97	12.20 ± 0.80	17
		-5.8	-4.6	-8.2	-6.6	
	leaves	10.20 ± 0.56	8.76 ± 0.41	10.20 ± 0.54	10.13 ± 0.43	12
		-5.5	-4.7	-5.3	-4.24	
	grains	23.65 ± 1.12	21.38 ± 0.87	22.41 ± 1.06	20.50 ± 0.91	25
		-4.74	-4	-4.73	-4.44	

Cu	roots	0.55 ± 0.08	0.38 ± 0.06	0.27 ± 0.04	0.19 ± 0.008	6.40
		-14.54	-15.79	-14.81	-4.21	
	stems	0.33 ± 0.04	0.14 ± 0.008	0.11 ± 0.009	0.12 ± 0.009	<6,0
		-12.12	-5.71	-8.18	(7.5)	
	leaves	0.36 ± 0.07	0.19 ± 0.05	0.17 ± 0.009	0.15 ± 0.008	<6.0
		(15.55)	(13.88)	-6.92	-5.71	
	grains	< DL	< DL	< DL	< DL	0.50
Fe	roots	4.44 ± 0.23	4.11 ± 0.21	3.2 ± 0.12	1.56 ± 0.08	8.60
		-5.2	-5.11	-3.75	-5.13	
	stems	0.18 ± 0.009	0.96 ± 0.03	0.22 ± 0.01	0.7 ± 0.02	< 1.0
		-5	-3.12	-4.54	-2.86	
	leaves	0.86 ± 0.06	0.73 ± 0.02	0.6 ± 0.03	0.3 ± 0.01	
		-6.98	-2.74	-5	-3.33	1.40
	grains	0.14 ± 0.008	0.12 ± 0.009	< DL	< DL	0.30
		-5.71	-7.5			
Mn	roots	2.45 ± 0.14	1.71 ± 0.10	1.44 ± 0.09	0.23 ± 0.01	6.0
		-5.71	-5.85	-6.25	-4.35	
	stems	1.17 ± 0.08	1.09 ± 0.06	1.12 ± 0,05	0.10 ± 0.008	<6.0
		-6.84	-5.5	(4.46)	-8	
	leaves	1.80 ± 0.10	1.40 ± 0.09	1.28 ± 0.07	0.15 ± 0.009	<6.0*
		-5.55	-6.43	-4.47	-6	
	grains	0.20 ± 0.09	< DL	< DL	< DL	0.10
		-6.25				

VII. CONCLUSION OF ANALYSES OF PLANTS AND SOILS

According to the results the strength identified in various parts of dicoccum were almost same. This information reveals that roots of wheat contains strength for Ni in the order of 396 mg.kg^{-1}, values provided varying levels of 4.96 ± 2.49; 45.19 ± 2.09; 33.69 ± 2.59 and 37.87 ± 2.59. The grains contain a Ni concentration slightly less which is of 25 mg/kg. To Cu, strengths identified various parts of dicoccum were weak which comparison is done by various studies. In this work soils contains Cu amount higher than to that of 100 mg.kg^{-1}, Cu strength in dicoccum grains were less to that of limits of detection by AAS flame. Fe, readings are found in normal range. But, in dicoccum, value found 8.60 mg/kg which is more to our readings.

Soil named as P3 along with control, strength in Ni were not identified by using AAS flame. Strength in Mn in roots and leaves are minimum to that of actual value. Mn 0.20 ± 0.09, which is maximum to that 0.09mg/kg$^{-1.}$ Readings of coefficients of variation (CV%) of dicoccum wheat such as roots, stems, leaves along with grains show excellent reproducibility. Obtained values were lower to that 10. Authors are identified that there is minimum strength of metals in various parts of dicoccum wheat in control soil compared to soils named as P1, P2 and P3. Present work revealed an assessment of level to contamination as well as aggregation of ETM in different soils present in agricultural land along with various parts of dicoccum wheat (*Triticum dicoccum* Desf). Authors concluding that arrangement of metals those are heavy present in soils purely dependent over texture as well as physicochemical parameters. Values also revealed that there is a less pollution by metal in soil, those provides an anthropogenic area of described elements.

Different organs of wheat accumulates less strengths in heavy metals those are compared with different studies. Majority of plots, concentration for Cu, Fe and Mn in grains of wheat were lower to limit of detection with atomic absorption spectrometry.

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