NUMERICAL DATA

Effects of zinc fertilizer amendments on yield and grain zinc concentration under controlled environment conditions. (2018)

Table 1: Summary of Zn fertilizer treatments in pot experiment.

Treatment	Zn Application Method	Zn Application Rate (kg Zn ha^{-1})
Control	N/A[a]	0.000
$ZnSO_4$	Soil	2.500
7% Zn lignosulphonate	Foliar	0.246
9% Zn chelated with EDTA	Foliar	0.246
9% Zn chelated with EDTA	Soil	0.246

Table 2: Effects of various forms of Zn fertilizer on grain and straw yield (g pot^{-1}) of three lentil cultivars.

		Yield (g pot^{-1})[a]	
Fertilizer	Cultivar	Grain	Straw
Control	CDC Maxim	1.47 a	1.97 c
	CDC Imvincible	1.43 a	1.92 c
	CDC Impower	1.29 a	3.00 a
Soil $ZnSO_4$	CDC Maxim	1.45 a	1.92 c
	CDC Imvincible	1.38 a	1.79 c
	CDC Impower	1.37 a	2.93 a
7% Zn foliar lignosulphonate	CDC Maxim	1.32 a	2.19 bc
	CDC Imvincible	1.35 a	1.91 c
	CDC Impower	1.43 a	2.71 ab
9% Zn foliar EDTA chelated	CDC Maxim	1.36 a	1.84 c
	CDC Imvincible	1.31 a	1.86 c
	CDC Impower	1.35 a	2.78 a
9% Zn soil EDTA chelated	CDC Maxim	1.52 a	1.85 c
	CDC Imvincible	1.35 a	1.98 c
	CDC Impower	1.33 a	2.72 ab
SEM[b]		0.08	0.12
Statistical Analysis		*P* values	
Fertilizer effect		0.828	0.579
Cultivar effect		0.309	<0.0001
Fertilizer × cultivar interaction effect		0.662	0.334

[a]Means with the same letter in the same column are not significantly different (P > .05) as determined by multi-treatment comparisons using the Tukey-Kramer method.

[b]SEM=standard error of mean.

Table 3: Effects of various forms of Zn fertilizer on grain and straw Zn concentration (mg Zn kg^{-1}) of three lentil cultivars.

Fertilizer	Cultivar	Zn Concentration (mg Zn kg^{-1})[a]	
		Grain	Straw
Control	CDC Maxim	36.7 a	29.5 a
	CDC Imvincible	38.2 a	31.4 a
	CDC Impower	33.3 a	31.5 a
Soil $ZnSO_4$	CDC Maxim	36.2 a	24.4 a
	CDC Imvincible	35.3 a	29.1 a
	CDC Impower	33.7 a	32.2 a
7% Zn foliar lignosulphonate	CDC Maxim	41.0 a	30.1 a
	CDC Imvincible	38.4 a	30.3 a
	CDC Impower	34.9 a	31.5 a
9% Zn foliar EDTA chelated	CDC Maxim	41.6 a	33.2 a
	CDC Imvincible	32.8 a	31.9 a
	CDC Impower	36.9 a	31.6 a
9% Zn soil EDTA chelated	CDC Maxim	37.3 a	32.8 a
	CDC Imvincible	39.1 a	30.6 a
	CDC Impower	43.5 a	30.6 a
SEM[b]		4.53	2.21
Statistical Analysis		*P* values	
Fertilizer effect		0.708	0.353
Cultivar effect		0.719	0.569
Fertilizer × cultivar interaction effect		0.859	0.536

[a]Means with the same letter in the same column are not significantly different ($P > 0.05$) as determined by multi-treatment comparisons using the Tukey-Kramer method.
[b]SEM = standard error of mean.

Table 4: Zinc removal (mg Zn pot^{-1}) in lentil cultivars amended with different forms of Zn fertilizer.

Cultivar	Zn Uptake and Removal (μg Zn pot^{-1})[a]		
	Straw	Grain	Total
CDC Maxim	58.7 b	54.2 a	112.9 b
CDC Imvincible	58.1 b	50.1 a	108.2 b
CDC Impower	89.9 a	49.6 a	139.4 a
SEM[b]	2.92	3.00	4.54
P value	<0.0001	0.49	$<.0001$

[a]Means with the same letter in the same column are not significantly different ($P > 0.05$) as determined by multi-treatment comparisons using the Tukey-Kramer method.
[b]SEM = standard error of mean.

Source: https://www.tandfonline.com/doi/full/10.1080/01904167.2018.1462386

Zinc effect on growth rate, chlorophyll, protein and mineral contents of hydroponically grown mungbeans plant (Vigna radiata) (2017)

Table 1: Plant height (cm) on dry weight basis in mungbean varieties at different concentrations of Zn in solution culture.

Zn treatments	V1	V2	V3	V4	Mean ± St. dv
Control	19.60b	19.93d	19.53bc	13.03e	18.02b 3.33
1 µM	22.94a	22.60a	22.70a	20.73 cd	22.24a 1.02
2 µM	23.18a	23.00a	23.20a	21.03bc	22.60a 1.05
Mean ± St.d v	21.91a	21.84a	21.81a	20.27b	
	2.00	1.67	1.99	4.53	

V1 = Ramazan, V2 = Swat mungI, V3 = NM92, V4 = KMI.
St. dv = standard deviation.

The mean followed by similar letter (s) are not significantly different at P= 0.05

Table 2: Chlorophyll contents (mg kg^{-1}) on dry weight basis in mungbean varieties at different concentrations of Zn in solution culture.

Zn treatments	V1	V2	V3	V4	Mean ± St. dv
Control	35.7f	73.45de	93.12 cd	105.93c	78.55b 30.63
1 µM	36.81f	145.30b	210.82a	221.01a	153.5a 84.71
2 µM	64.54e	146.07b	210.57a	226.08a	153.5a 84.71
Mean ± St.d v	45.69c	123.6b	171.5a	184.4a	
	16.34	41.71	67.88	67.95	

V1 = Ramazan, V2 = Swat mungI, V3 = NM92, V4 = KMI.
St. d = standard deviation.

The mean followed by similar letter (s) are not significantly different at P = 0.05.

Table 3: Percent crude protein (dry weight basis) in mungbean varieties at different concentrations of Zn in solution culture.

Zn treatments	V1	V2	V3	V4	Mean ± St. dv
Control	12.90f	11.76f	13.95ef	11.54f	12.54c 1.11
1 µM	13.12f	16.45de	17.62bcd	18.12 cd	16.08b 2.25
2 µM	20.54ab	22.86a	20.99a	22.05abc	21.61a 1.05
Mean ± St.d v	15.52a	17.02a	18.02a	17.24a	
	4.35	5.57	3.52	4.32	

V1 = Ramazan, V2 = Swat mungI, V3 = NM92, V4 = KMI.
St. d = standard deviation.

The mean followed by similar letter (s) are not significantly different at P = 0.05.

Source : https://www.sciencedirect.com/science/article/pii/S1878535213002050

Silicon addition to soybean (Glycine max L.) plants alleviate zinc deficiency (2016)

Table 1. Zinc content (µmol plant−1) at the three sampling times (M1, M2 and M3) after Zn removal from the NS. Values within a column followed by different letters differ significantly (P < 0.05, Duncan test).

Treatmei	Leaves Zn (µmol leaves−1)			Stems Zn (µmol stems−1)			Root Zn (µmol root−1)		
	M1	M2	M3	M1	M2	M3	M1	M2	M3
Zn 0 Si (0.0–0.0)	0.44 d	0.68 c	0.84 d	0.057 c	0.165 b	0.270 c	0.12 d	0.24 b	0.37 b
Zn 10 Si (0.0–0.0)	1.29 ab	1.25 a	5.26 a	0.075 bc	0.052 c	0.414 a	0.65 a	0.22 bc	2.73 a
Zn 0 Si (0.5–0.5)	1.12 bc	0.92 b	1.35 b	0.083 bc	0.129 b	0.358 ab	0.14 d	0.15 d	0.49 b
Zn 0 Si (1.0–1.0)	1.05 c	1.05 b	1.19 bc	0.096 ab	0.250 a	0.415 a	0.27 bc	0.37 a	0.38 b
Zn 0 Si (0.5–0.0)	1.36 a	1.36 a	1.07 c	0.075 bc	0.165 b	0.278 c	0.18 cd	0.16 cd	0.56 b
Zn 0 Si (1.0–0.0)	1.03 c	0.96 b	1.21 bc	0.118 a	0.176 b	0.334 bc	0.38 b	0.17 cd	0.43 b

Source: https://www.sciencedirect.com/science/article/pii/S0981942816302753

Effect of Zinc fertilization and irrigation regimes on maximum LAI (2016)

Treatments	Zn_1	Zn_2	Zn_3	Zn_4	Zn_5
Shekhupura (Site 1)					
I_1	5.29	5.55	5.72	5.89	5.88
I_2	5.74	5.92	6.16	6.1	6.11
I_3	5.76	5.83	6.01	6.48	6.82
I_4	5.82	6.06	6.98	7.24	7.3
I_5	6.4	6.83	6.96	7.46	7.51
Sargodha (Site 2)					
I_1	3.38	3.5	3.78	3.87	3.64
I_2	3.57	3.69	3.87	3.92	3.96
I_3	3.96	4.28	4.58	4.86	5.14
I_4	3.85	4.28	4.58	5.13	5.59
I_5	4.28	4.6	5.2	5.28	5.08

Source: Shakeel Ahmad at al.(2016),Zinc fertilization under optimum soil moisture improved the aromatic rice productivity,Philippines journal of Crop Science

Effect of zinc fertilization and irrigation regimes on LAD (2016)

Treatments	Zn_1	Zn_2	Zn_3	Zn_4	Zn_5
Shekhupura (Site 1)					
I_1	296.45	307.5	316.39	325.54	330.94
I_2	301.2	320.82	326.6	336.26	347.54
I_3	313.47	330.17	339	373.88	400.55
I_4	323	346	376.1	407.86	424.83
I_5	345.42	378.89	394.81	422.38	411.31
Sargodha (Site 2)					
I_1	192.6	209.57	223.97	234.06	232.49
I_2	210.5	219.58	236.81	244.38	251.15
I_3	233.22	260.19	276.37	293.58	309.7
I_4	235.43	259.37	278.72	313.69	337.61
I_5	255.93	278.89	307.72	320.72	312.97

Source: Naeem Sarwar at al.(2016),Zinc fertilization under optimum soil moisture improved the aromatic rice productivity,Philippines journal of Crop Science

Effect of zinc fertilization and irregation regimes on NAR (g m-2 day^{-1}) (2016)

Treatments	Zn_1	Zn_2	Zn_3	Zn_4	Zn_5
Shekhupura (Site 1)					
I_1	3.34	3.4	3.49	3.6	3.77
I_2	3.79	3.74	3.67	3.58	3.4
I_3	3.86	3.64	4.06	3.67	3.66
I_4	4.6	4.53	4.37	4.15	4.18
I_5	4.11	3.78	3.75	3.62	3.68
Sargodha (Site 2)					
I_1	2.92	2.98	3.07	3.18	3.35
I_2	3.37	3.22	3.25	3.16	2.98
I_3	3.44	3.22	3.64	3.25	3.24
I_4	4.18	4.11	3.95	3.73	3.76
I_5	3.14	3.36	3.33	3.2	3.26

Source: Hakoomat ali at al.(2016),Zinc fertilization under optimum soil moisture improved the aromatic rice productivity,Philippines journal of Crop Science