Analysis of variance. One-way ANOVA.

Investigated experimental factor: Cd Concentration
Factors name: Control; 0.5 mg/L; 1.0 mg/L; 1.5 mg/L;
Investigated experimental response: Optical density

* - The components of observed variance:

	df	type I SS	mean square	F value	p>F
treatments	3	12.4128	4.1376	122.2471	<0.001
Residuals	24	0.8123	0.0338	-	-

* - Distribution of variables in variance classes:

	treatment	mean	sd	sem	tukey	snk	duncan	NA.	scott_knott
1	Control	1.9309	0.2400	0.0695	a	a	a	a	a
2	0.5 mg/L	0.7600	0.2274	0.0695	b	b	b	b	b
3	1.0 mg/L	0.3800	0.0800	0.0695	c	c	c	c	c
4	1.5 mg/L	0.2350	0.1402	0.0695	c	c	c	c	c

* - The raw multiple comparisons test:

	pair	contrast	p(tukey)	p(snk)	p(duncan)	NA
1	Control - 0.5 mg/L	1.1709	0.0000	0.0000	0.0000	0.0000
2	Control - 1.0 mg/L	1.5509	0.0000	0.0000	0.0000	0.0000
3	Control - 1.5 mg/L	1.6959	0.0000	0.0000	0.0000	0.0000
4	0.5 mg/L - 1.0 mg/L	0.3800	0.0038	0.0007	0.0007	0.0014
5	0.5 mg/L - 1.5 mg/L	0.5250	0.0001	0.0001	0.0000	0.0000
6	1.0 mg/L - 1.5 mg/L	0.1450	0.4673	0.1531	0.1531	0.1531

* - Normality (Shapiro-Wilk) and homogeneity (Bartlett) tests applied to residuals:

	values
p.value Shapiro-Wilk test	0.9595
p.value Bartlett test	0.0710
coefficient of variation (%)	22.2600
first value most discrepant	10.0000
second value most discrepant	1.0000
third value most discrepant	7.0000

*   - The estimated marginal means (EMMs) of factors values:

Concentration	emmean	SE	df	lower.CL	upper.CL
Control	1.931	0.0695	24	1.7873	2.074
0.5 mg/L	0.760	0.0695	24	0.6165	0.904
1.0 mg/L	0.380	0.0695	24	0.2365	0.524
1.5 mg/L	0.235	0.0695	24	0.0915	0.379

Confidence level used: 0.95

*   - The contrasts between factors in terms of estimated marginal mMeans (EMMs):

contrast	estimate	SE	df	t.ratio	p.value
Control - (0.5 mg/L)	1.171	0.0983	24	11.906	<.0001
Control - (1.0 mg/L)	1.551	0.0983	24	15.771	<.0001
Control - (1.5 mg/L)	1.696	0.0983	24	17.245	<.0001
(0.5 mg/L) - (1.0 mg/L)	0.380	0.0983	24	3.864	0.0009
(0.5 mg/L) - (1.5 mg/L)	0.525	0.0983	24	5.339	<.0001
(1.0 mg/L) - (1.5 mg/L)	0.145	0.0983	24	1.475	0.1533

P value adjustment: fdr method for 6 tests

*   - Calculated p values of pair factor contrasts:

	contrasts.vals	p.vals
Control - (0.5 mg/L)	1.170857	2.938873e-11
Control - (1.0 mg/L)	1.550857	1.088629e-13
Control - (1.5 mg/L)	1.695857	3.013156e-14
(0.5 mg/L) - (1.0 mg/L)	0.380000	8.904681e-04
(0.5 mg/L) - (1.5 mg/L)	0.525000	2.650524e-05
(1.0 mg/L) - (1.5 mg/L)	0.145000	1.533433e-01

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*   - Benjamini-Krieger-Yekutieli multiple-stages comparison procedure
*     and the decision to reject the null hypothesis of equal means.
                       contrasts.vals       p.vals    BYK.pvals BYK.rejection
Control - (0.5 mg/L)         1.170857 2.938873e-11 3.918498e-11          TRUE
Control - (1.0 mg/L)         1.550857 1.088629e-13 2.721572e-13          TRUE
Control - (1.5 mg/L)         1.695857 3.013156e-14 1.807894e-13          TRUE
(0.5 mg/L) - (1.0 mg/L)      0.380000 8.904681e-04 3.565047e-04          TRUE
(0.5 mg/L) - (1.5 mg/L)      0.525000 2.650524e-05 1.987946e-05          TRUE
(1.0 mg/L) - (1.5 mg/L)      0.145000 1.533433e-01 3.018605e-02          TRUE
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