

1. น้ำหนักเฉลี่ยของกุ้งกับพารามิเตอร์ในน้ำ

Welcome to Minitab, press F1 for help.

Stepwise Regression: Average weight versus water color, T (°C), ...

Alpha-to-Enter: 0.05 Alpha-to-Remove: 0.1

Response is Average on 17
predictors, with N = 7

Step	1	2	3	4
Constant	-2.7593	-1.8725	-0.8408	-0.3748
BOD (mg/	0.1445	0.1448	0.1196	0.1145
T-Value	9.42	16.00	16.89	65.07
P-Value	0.000	0.000	0.000	0.000
P(mg/l)	-1.66	-3.29	-3.59	
T-Value	-3.22	-7.44	-32.91	
P-Value	0.032	0.005	0.001	
PB(cfu/m		0.00001	0.00001	
T-Value		4.28	19.25	
P-Value		0.023	0.003	
Ammonifi			-0.00116	
T-Value			-7.43	
P-Value			0.018	
S	0.706	0.417	0.181	0.0414
R-Sq	94.66	98.51	99.79	99.99
R-Sq(adj)	93.59	97.77	99.58	99.98

Regression Analysis: Average
wt versus BOD (mg/l), P(mg/l), ...

The regression equation is

$$\text{Average wt} = -0.375 + 0.115 \text{ BOD (mg/l)} - 3.59 \text{ P(mg/l)} + 0.000012 \text{ PB(cfu/ml)} - 0.00116 \text{ Ammonifier}$$

Predictor	Coef	SE Coef	T	P
Constant	-0.37482	0.09561	-3.92	0.059

BOD (mg/	0.114523	0.001760	65.07	0.000
P(mg/l)	-3.5882	0.1090	-32.91	0.001
PB(cfu/m	0.00001162	0.00000060	19.25	0.003
Ammonifi	-0.0011649	0.0001569	-7.43	0.018

S = 0.04138 R-Sq = 100.0% R-Sq(adj) = 100.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	4	46.728	11.682	6822.46	0.000
Residual Error	2	0.003	0.002		
Total	6	46.732			

Source	DF	Seq SS
BOD (mg/	1	44.237
P(mg/l)	1	1.801
PB(cfu/m	1	0.596
Ammonifi	1	0.094

ความยาวกึ่งกับพารามิเตอร์ในน้ำ

Stepwise Regression: Length (cm) versus water color, T (°C), ...

Alpha-to-Enter: 0.05 Alpha-to-Remove: 0.1

Response is Length (on 17 predictors, with N = 7

Step	1
Constant	-1.400

BOD (mg/	0.206
T-Value	12.95
P-Value	0.000

S	0.731
R-Sq	97.10

R-Sq(adj) 96.52

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* NOTE * Existing file replaced.

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Results for: Worksheet 1

Stepwise Regression: Growth (Weight) versus water color, T (°C), ...

Alpha-to-Enter: 0.05 Alpha-to-Remove: 0.1

Response is Growth(W on 17 predictors, with N = 6
N(cases with missing observations) = 1 N(all cases) = 7

Step	1	2
Constant	100.1	114.5
water co	-29.5	-31.6
T-Value	-4.93	-10.08
P-Value	0.008	0.002
P(mg/l)		-16.5
T-Value		-3.49
P-Value		0.040
S	6.92	3.55
R-Sq	85.85	97.20
R-Sq(adj)	82.31	95.33

Regression Analysis: Growth (Weight) versus water color, P(mg/l)

The regression equation is

$$\text{Growth(Wt)} = 115 - 31.6 \text{ water color} - 16.5 \text{ P(mg/l)}$$

6 cases used 1 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	114.523	8.409	13.62	0.001
water co	-31.577	3.133	-10.08	0.002
P(mg/l)	-16.455	4.717	-3.49	0.040

S = 3.554 R-Sq = 97.2% R-Sq(adj) = 95.3%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	2	1315.57	657.79	52.09	0.005
Residual Error	3	37.88	12.63		
Total	5	1353.46			

Source	DF	Seq SS
water co	1	1161.91
P(mg/l)	1	153.66

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Stepwise Regression: Growth (Length) versus water color, T (°C), ...

Alpha-to-Enter: 0.05 Alpha-to-Remove: 0.1

Response is Growth (on 17 predictors, with N = 6
 N(cases with missing observations) = 1 N(all cases) = 7

Step	1	2	3	4
Constant	8.514	11.388	11.040	10.738
NH4+(mg/	9.612	6.235	6.311	6.253
T-Value	10.22	9.35	36.38	511.96
P-Value	0.001	0.003	0.001	0.001
BOD (mg/		-0.04447	-0.03877	-0.03653
T-Value		-5.74	-17.69	-196.90
P-Value		0.011	0.003	0.003
NO3-(mg/			1.330	1.511
T-Value			6.52	91.61
P-Value			0.023	0.007
water co				0.0915
T-Value				20.62
P-Value				0.031
S	0.425	0.142	0.0368	0.00252
R-Sq	96.31	99.69	99.99	100.00
R-Sq(adj)	95.39	99.49	99.97	100.00

* ERROR * Not enough data in column.

2. น้ำหนักเฉลี่ยของกุ่มกับพารามิเตอร์ในดิน

Stepwise Regression: Average weight versus C (%), N (%), ...

Alpha-to-Enter: 0.05 Alpha-to-Remove: 0.1

Response is Average on 14 predictors, with N = 7

Step	1	2	3	4	5
Constant	1.5307	0.8511	0.6300	1.0295	1.1859
Nitrite_	0.00303	0.01247	0.01035	0.01100	0.01030
T-Value	2.79	5.67	18.01	44.64	198.99
P-Value	0.038	0.005	0.000	0.001	0.003
Denitrif	-0.00394	-0.00612	-0.00608	-0.00582	
T-Value	-4.41	-18.25	-50.96	-280.70	
P-Value	0.012	0.000	0.000	0.002	
TBC(cfu/		0.00000	0.00000	0.00000	
T-Value		8.34	18.80	175.43	
P-Value		0.004	0.003	0.004	
C (%)			-0.623	-1.254	
T-Value			-4.67	-28.60	
P-Value			0.043	0.022	
NH4+(mg/				0.01263	
T-Value				15.03	
P-Value				0.042	
S	1.91	0.883	0.207	0.0736	0.00691
R-Sq	60.89	93.32	99.72	99.98	100.00
R-Sq(adj)	53.07	89.98	99.45	99.93	100.00

* ERROR * Not enough data in column.

Regression Analysis: Average weight versus NH4+(mg/l), TBC(cfu/ml), ...

The regression equation is

$$\text{Average wt} = 1.19 + 0.0126 \text{ NH}_4\text{+(mg/l)} + 0.000002 \text{ TBC(cfu/ml)} - 1.25 \text{ C (\%)} - 0.00582 \text{ Denitrifier} + 0.0103 \text{ Nitrite_ER}$$

Predictor	Coef	SE Coef	T	P
Constant	1.18591	0.01356	87.43	0.007
NH4+(mg/	0.0126340	0.0008405	15.03	0.042
TBC(cfu/	0.00000233	0.00000001	175.43	0.004
C (%)	-1.25435	0.04385	-28.60	0.022
Denitrif	-0.00581729	0.00002072	-280.70	0.002
Nitrite_	0.0103033	0.0000518	198.99	0.003

S = 0.006907 R-Sq = 100.0% R-Sq(adj) = 100.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	5	46.7318	9.3464	195939.11	0.002
Residual Error	1	0.0000	0.0000		
Total	6	46.7319			

Source	DF	Seq SS
NH4+(mg/	1	27.3026
TBC(cfu/	1	4.8107
C (%)	1	10.8060
Denitrif	1	1.9237
Nitrite_	1	1.8888

Unusual Observations

Obs	NH4+(mg/	Average	Fit	SE Fit	Residual	St Resid
5	11.4	2.75000	2.74949	0.00689	0.00051	1.00 X
7	63.0	6.68000	6.67996	0.00691	0.00004	1.00 X

X denotes an observation whose X value gives it large influence.

ความยาวของกุ้งกับพารามิเตอร์ในดิน

Stepwise Regression: Length (cm) versus C (%), N (%), ...

Alpha-to-Enter: 0.05 Alpha-to-Remove: 0.1

Response is Length (on 14 predictors, with N = 7

Step	1	2
Constant	9.081	6.357
C/N rati	-0.0526	-0.0520
T-Value	-2.87	-6.30
P-Value	0.035	0.003
P(mg/l)	0.85	
T-Value	4.55	
P-Value	0.010	
S	2.64	1.19
R-Sq	62.18	93.87
R-Sq(adj)	54.62	90.80

Regression Analysis: Length (cm) versus C/N ratio, P(mg/l)

The regression equation is

$$\text{Length (cm)} = 6.36 - 0.0520 \text{ C/N ratio} + 0.852 \text{ P(mg/l)}$$

Predictor	Coef	SE Coef	T	P
Constant	6.3567	0.8614	7.38	0.002
C/N rati	-0.052003	0.008256	-6.30	0.003
P(mg/l)	0.8516	0.1873	4.55	0.010

S = 1.189 R-Sq = 93.9% R-Sq(adj) = 90.8%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	2	86.650	43.325	30.62	0.004
Residual Error	4	5.659	1.415		
Total	6	92.310			

Source	DF	Seq SS
C/N rati	1	57.401
P(mg/l)	1	29.249

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Results for: output.TXT

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Stepwise Regression: Growth(Wt) versus C (%), N (%), ...

Alpha-to-Enter: 0.05 Alpha-to-Remove: 0.1

Response is Growth(W on 14 predictors, with N = 6
N(cases with missing observations) = 1 N(all cases) = 7

No variables entered or removed

อัตราการเติบโตของความยาวกุ้งกับพารามิเตอร์ในดิน

Stepwise Regression: Growth (L) versus C (%), N (%), ...

Alpha-to-Enter: 0.05 Alpha-to-Remove: 0.1

Response is Growth (on 14 predictors, with N = 6
N(cases with missing observations) = 1 N(all cases) = 7

No variables entered or removed

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Regression Analysis: Growth (L) versus NH₄⁺(mg/l), BOD (mg/l), ...

The regression equation is

$$\text{Growth (L)} = 10.7 + 6.25 \text{ NH}_4^+(\text{mg/l}) - 0.0365 \text{ BOD (mg/l)} + 1.51 \text{ NO}_3^-(\text{mg/l}) + 0.0915 \text{ water color}$$

6 cases used 1 cases contain missing values

Predictor	Coef	SE Coef	T	P
Constant	10.7383	0.0176	609.98	0.001
NH ₄ ⁺ (mg/	6.25321	0.01221	511.96	0.001
BOD (mg/	-0.0365280	0.0001855	-196.90	0.003
NO ₃ ⁻ (mg/	1.51054	0.01649	91.61	0.007
water co	0.091462	0.004435	20.62	0.031

S = 0.002521 R-Sq = 100.0% R-Sq(adj) = 100.0%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	4	19.6010	4.9002	770804.06	0.001

Residual Error	1	0.0000	0.0000
Total	5	19.6010	

Source	DF	Seq SS
NH4+(mg/	1	18.8783
BOD (mg/	1	0.6624
NO3-(mg/	1	0.0576
water co	1	0.0027

Unusual Observations

Obs	NH4+(mg/	Growth (Fit	SE Fit	Residual	St Resid
1	0.220	* 11.8401	0.0053		* * X	
5	0.120	10.0278	10.0279	0.0025	-0.0001	-1.00 X

X denotes an observation whose X value gives it large influence.

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