

Biomechanical evaluation
Test between collagen concentration

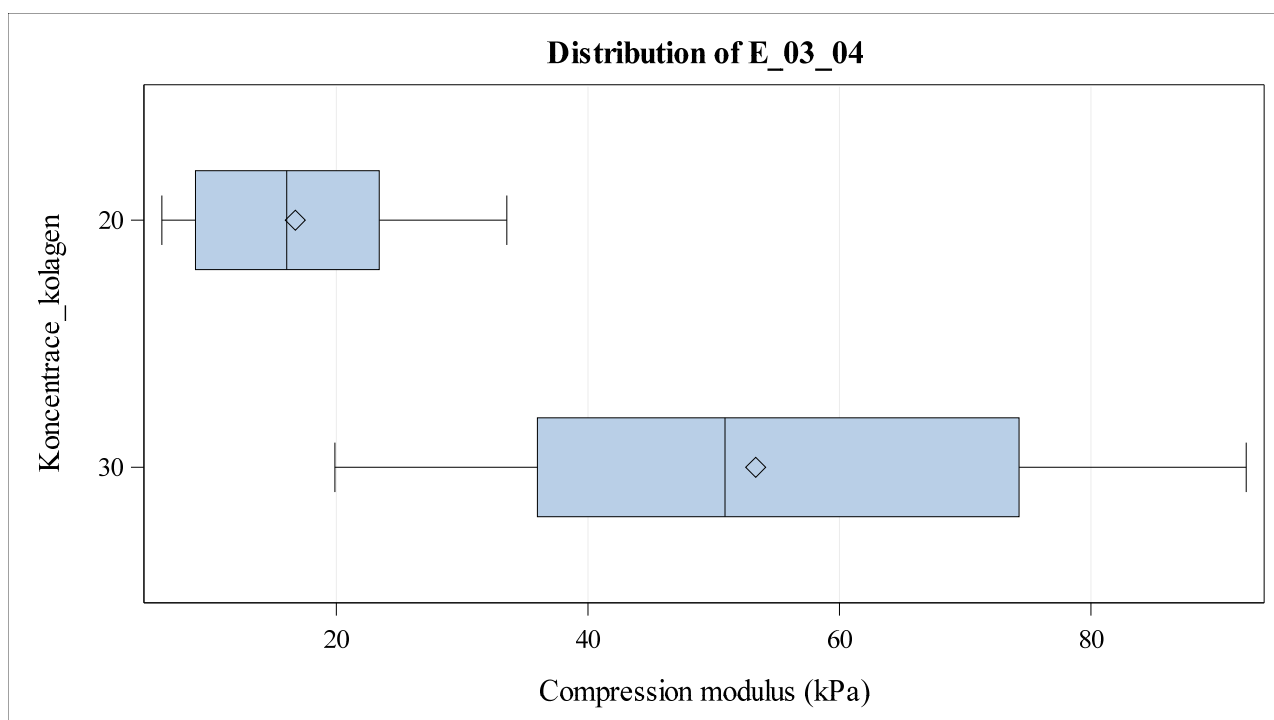
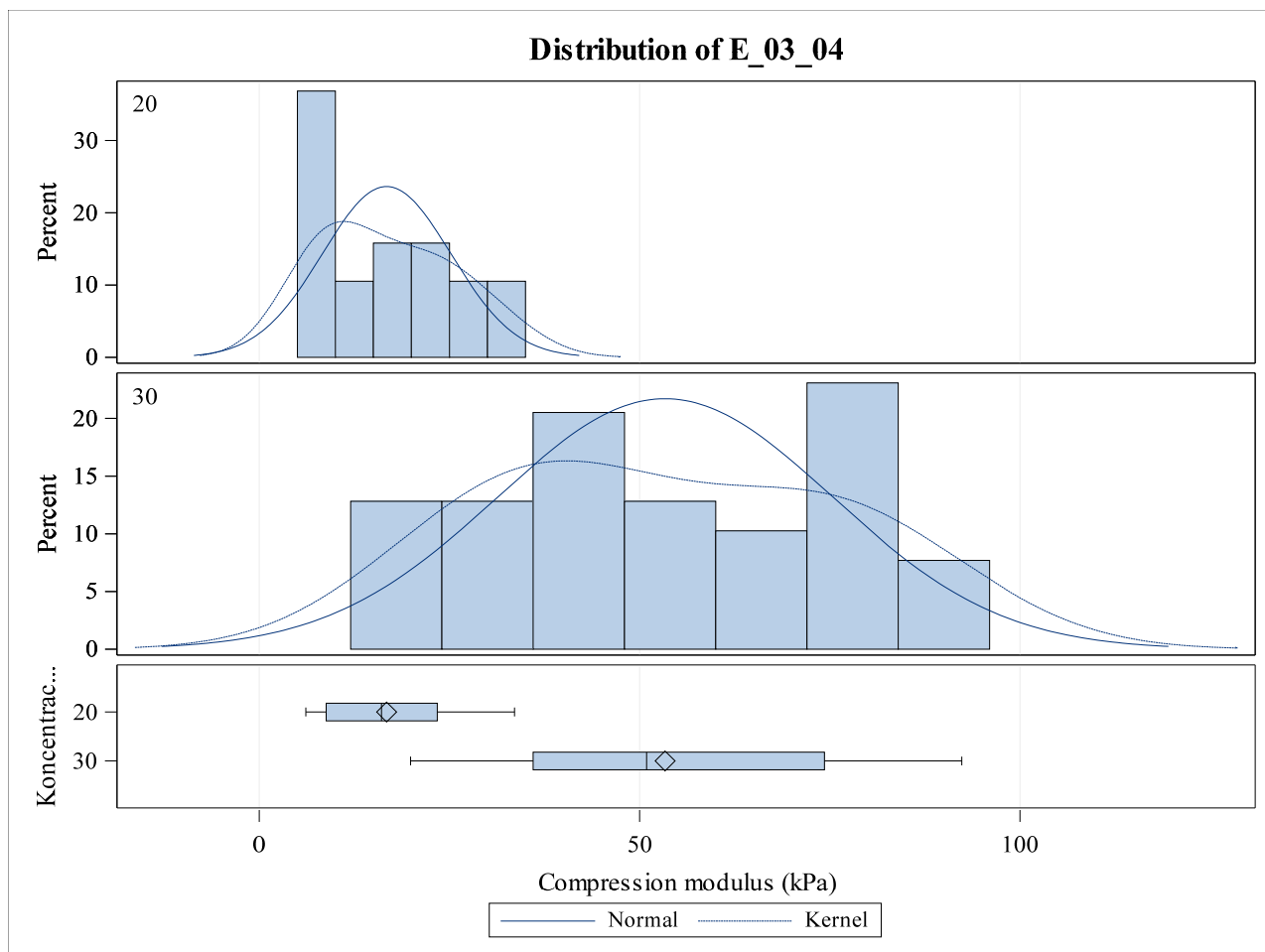
**Variable: E_03_04 (Compression modulus
(kPa))**

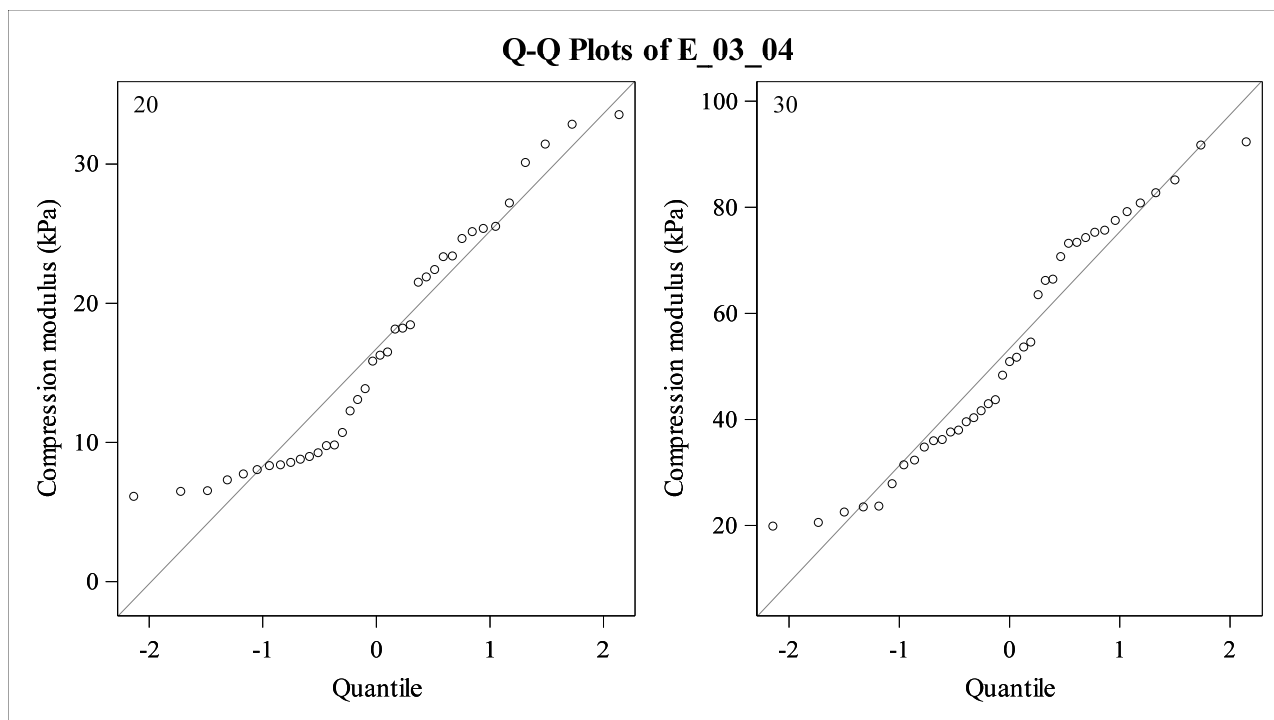
Koncentrace_kolagen	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
20		38	16.7350	8.4424	1.3695	6.1239	33.5466
30		39	53.3419	22.0537	3.5314	19.8817	92.3457
Diff (1-2)	Pooled		-36.6069	16.7806	3.8250		
Diff (1-2)	Satterthwaite		-36.6069		3.7877		

Koncentrace_kolagen	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
20		16.7350	13.9601	19.5099	8.4424	6.8828	10.9223
30		53.3419	46.1930	60.4909	22.0537	18.0233	28.4223
Diff (1-2)	Pooled	-36.6069	-44.2267	-28.9872	16.7806	14.4718	19.9727
Diff (1-2)	Satterthwaite	-36.6069	-44.2180	-28.9959			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	75	-9.57	<.0001
Satterthwaite	Unequal	49.148	-9.66	<.0001

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	38	37	6.82	<.0001





Biomechanical evaluation
Test between collagen concentration

Model: MODEL1

Dependent Variable: E_03_04 Compression modulus (kPa)

Collagen conc. (mg/ml)=20

Number of Observations Read	38
Number of Observations Used	38

Stepwise Selection: Step 1

Variable inkubace_new Entered: R-Square = 0.5558 and C(p) = 21.2751

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	1465.71023	1465.71023	45.04	<.0001
Error	36	1171.41554	32.53932		
Corrected Total	37	2637.12577			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	6.38402	1.79858	409.95499	12.60	0.0011
inkubace_new	4.14039	0.61691	1465.71023	45.04	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable koncentre_aa_new Entered: R-Square = 0.6516 and C(p) = 11.3529

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	1718.37127	859.18564	32.73	<.0001
Error	35	918.75450	26.25013		
Corrected Total	37	2637.12577			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	13.99454	2.93722	595.90503	22.70	<.0001
koncentre_aa_new	-5.16428	1.66459	252.66104	9.63	0.0038
inkubace_new	4.14039	0.55409	1465.71023	55.84	<.0001

Bounds on condition number: 1, 4

Stepwise Selection: Step 3

Variable phnum Entered: R-Square = 0.7268 and C(p) = 4.0000

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	1916.58146	638.86049	30.15	<.0001
Error	34	720.54431	21.19248		
Corrected Total	37	2637.12577			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	11.44946	2.76723	362.79389	17.12	0.0002
koncentrace_aa_new	-4.90977	1.49797	227.66632	10.74	0.0024
phnum	4.58115	1.49797	198.21019	9.35	0.0043
inkubace_new	4.14039	0.49786	1465.71023	69.16	<.0001

Bounds on condition number: 1.0031, 9.0186

All variables left in the model are significant at the 0.1500 level.

All variables have been entered into the model.

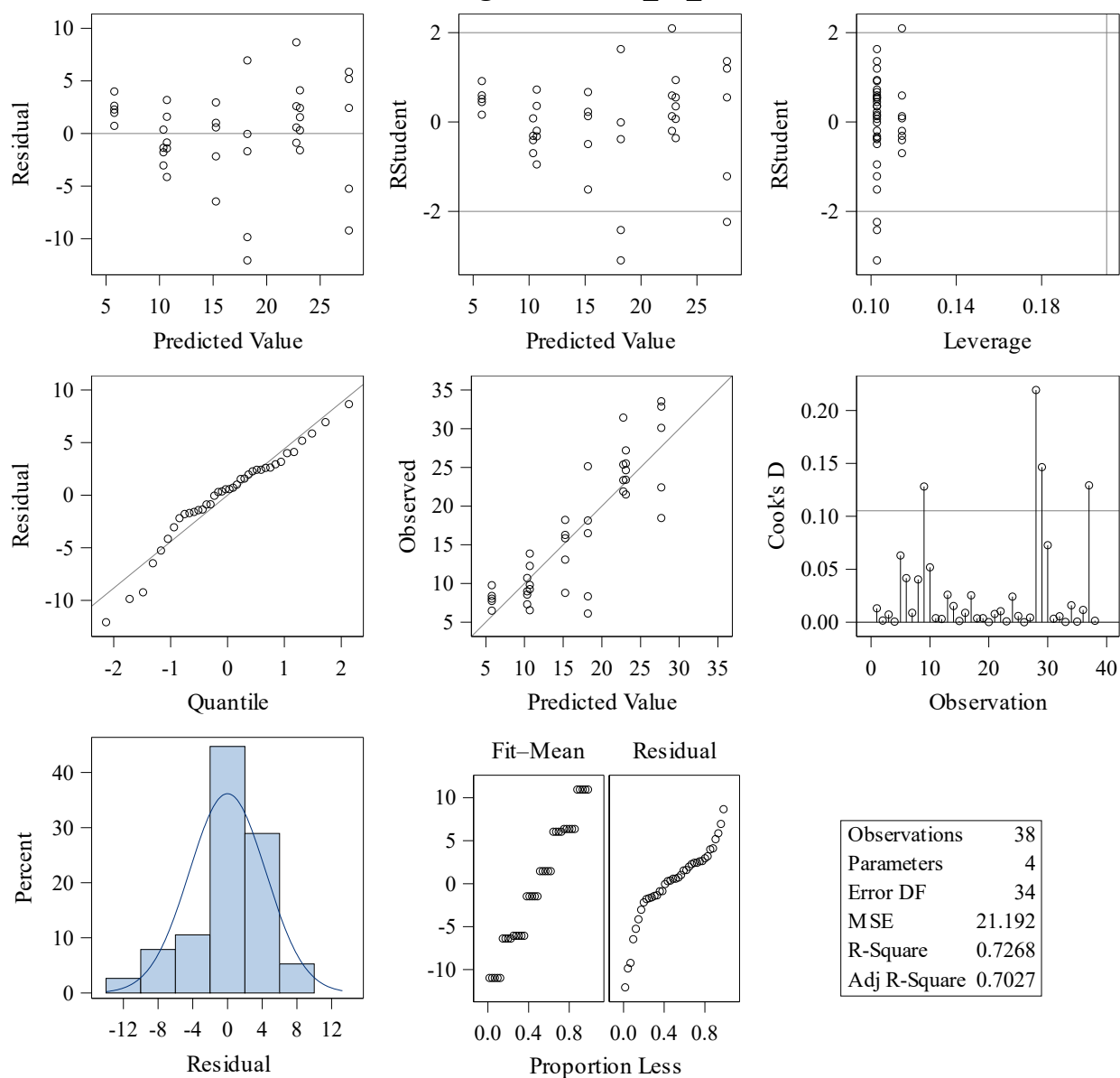
Summary of Stepwise Selection									
Step	Variable Entered	Variable Removed	Label	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	inkubace_new		Incubation time (1: 15 min; 4: 60 min)	1	0.5558	0.5558	21.2751	45.04	<.0001
2	koncentrace_aa_new		Acetic acid conc. (1:0.05%; 2:0.1%)	2	0.0958	0.6516	11.3529	9.63	0.0038
3	phnum		pH-num	3	0.0752	0.7268	4.0000	9.35	0.0043

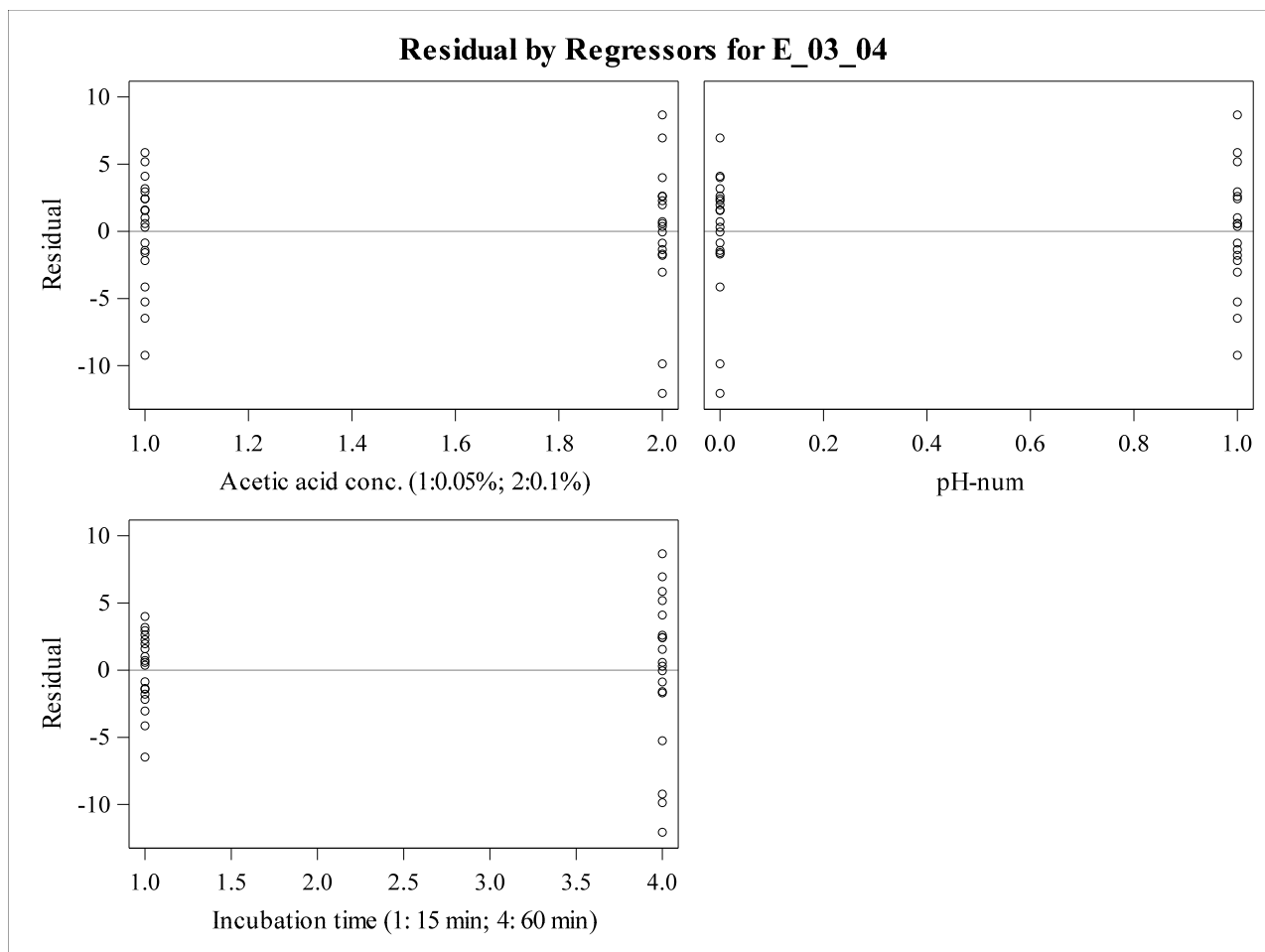
Model: MODEL1

Dependent Variable: E_03_04 Compression modulus (kPa)

Collagen conc. (mg/ml)=20

Fit Diagnostics for E_03_04





Model: MODEL1

Dependent Variable: E_03_04 Compression modulus (kPa)

Collagen conc. (mg/ml)=30

Number of Observations Read	39
Number of Observations Used	39

Stepwise Selection: Step 1

Variable inkubace_new Entered: R-Square = 0.6651 and C(p) = 44.9329

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	12293	12293	73.49	<.0001
Error	37	6188.91101	167.26787		
Corrected Total	38	18482			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	23.28682	4.07186	5470.75045	32.71	<.0001
inkubace_new	11.83989	1.38110	12293	73.49	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable kontrace_aa_new Entered: R-Square = 0.8008 and C(p) = 14.5424

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	14801	7400.42499	72.38	<.0001
Error	36	3681.03934	102.25109		
Corrected Total	38	18482			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	46.79696	5.71587	6853.90289	67.03	<.0001
kontrace_aa_new	-16.04884	3.24060	2507.87167	24.53	<.0001
inkubace_new	11.98067	1.08020	12578	123.01	<.0001

Bounds on condition number: 1.0007, 4.0028

Stepwise Selection: Step 3

Variable phnum Entered: R-Square = 0.8534 and C(p) = 4.0000

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	15772	5257.32208	67.90	<.0001
Error	35	2709.92306	77.42637		
Corrected Total	38	18482			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	41.84674	5.16653	5079.43093	65.60	<.0001
koncentrace_aa_new	-16.31885	2.82094	2591.07443	33.47	<.0001
phnum	9.99045	2.82094	971.11628	12.54	0.0011
inkubace_new	12.07068	0.94031	12759	164.78	<.0001

Bounds on condition number: 1.0014, 9.0128

All variables left in the model are significant at the 0.1500 level.

All variables have been entered into the model.

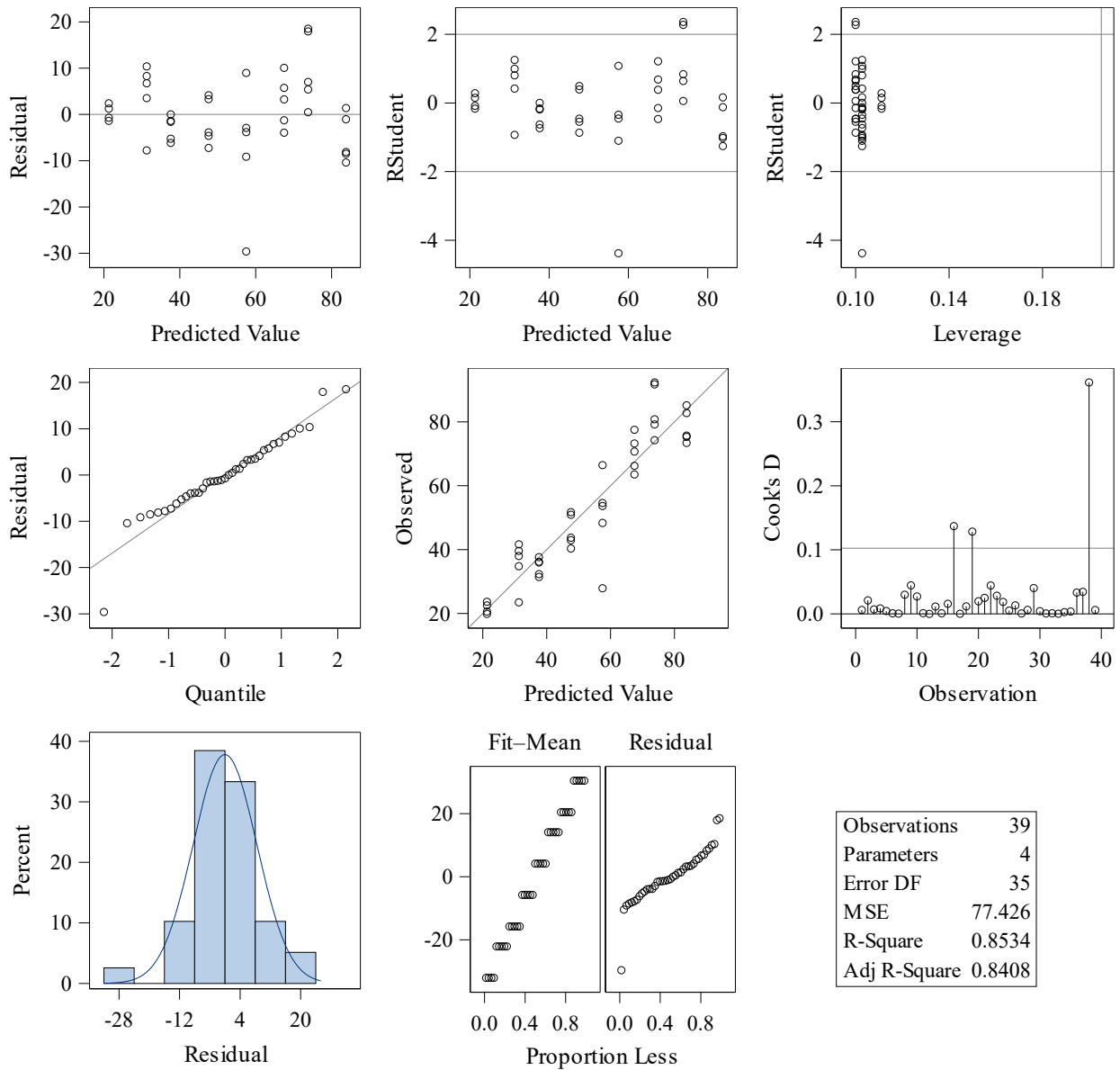
Summary of Stepwise Selection									
Step	Variable Entered	Variable Removed	Label	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	inkubace_new		Incubation time (1: 15 min; 4: 60 min)	1	0.6651	0.6651	44.9329	73.49	<.0001
2	koncentrace_aa_new		Acetic acid conc. (1:0.05%; 2:0.1%)	2	0.1357	0.8008	14.5424	24.53	<.0001
3	phnum		pH-num	3	0.0525	0.8534	4.0000	12.54	0.0011

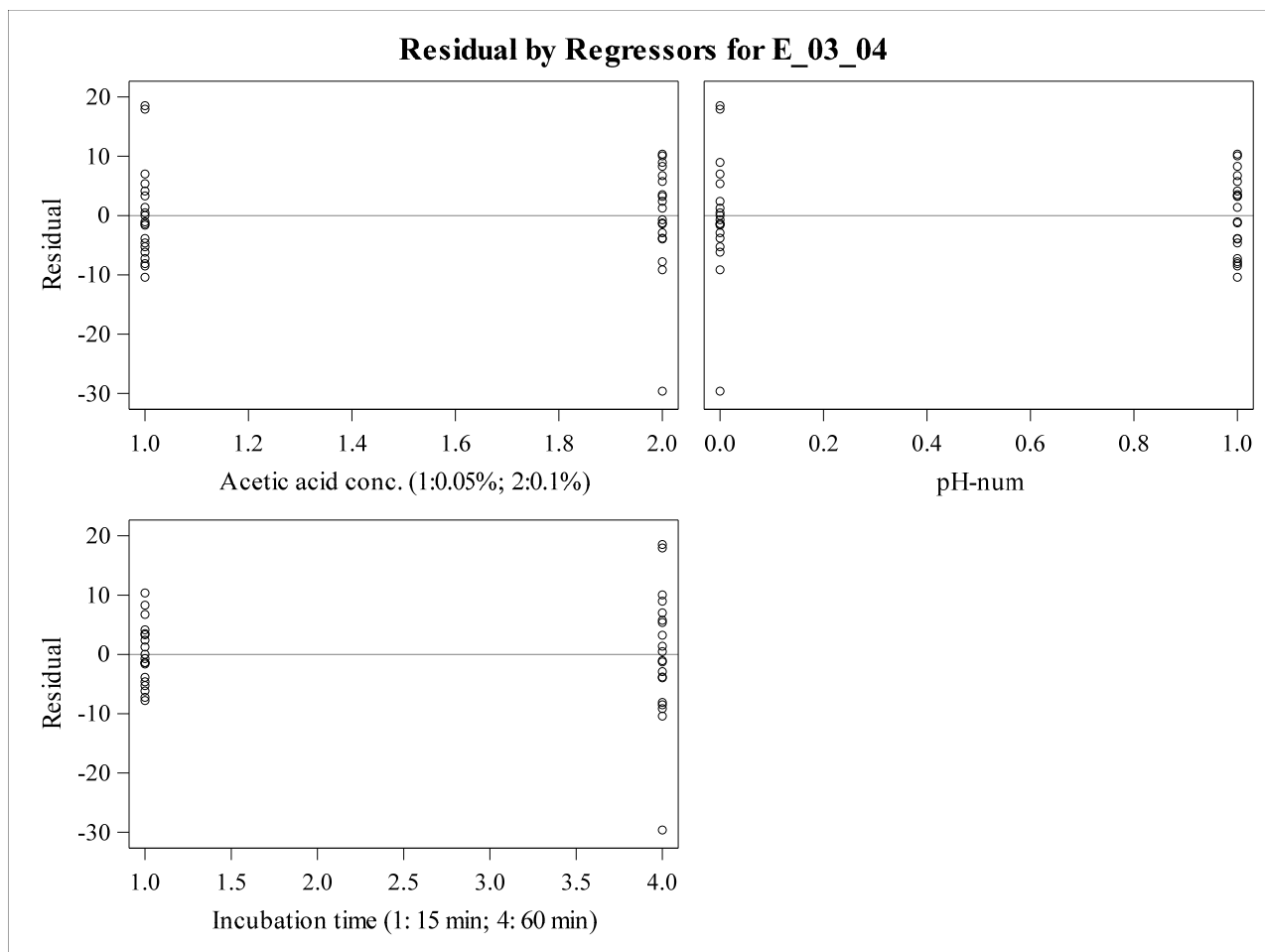
Model: MODEL1

Dependent Variable: E_03_04 Compression modulus (kPa)

Collagen conc. (mg/ml)=30

Fit Diagnostics for E_03_04





Biomechanical evaluation
Test between collagen concentration

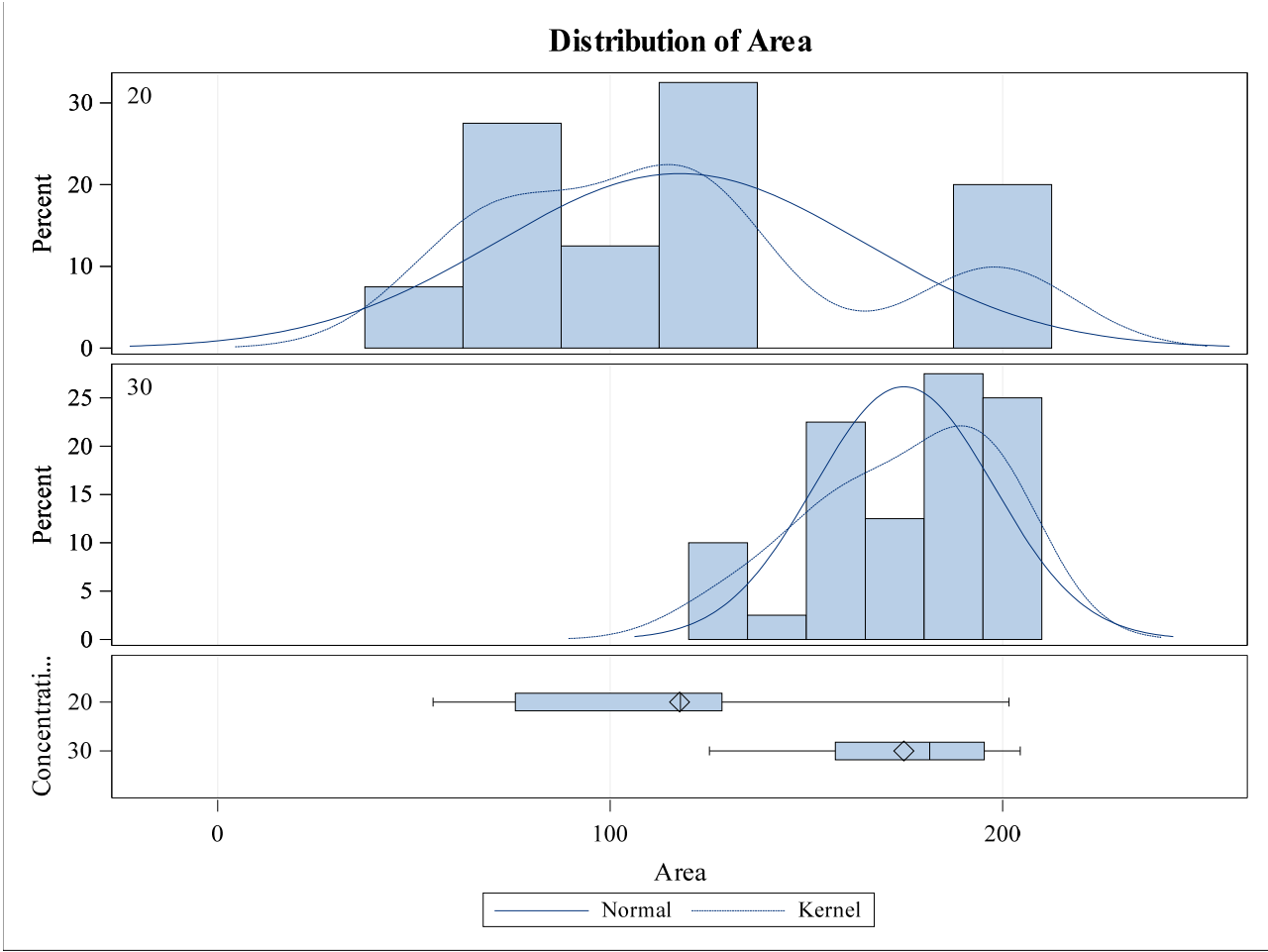
Variable:
Area

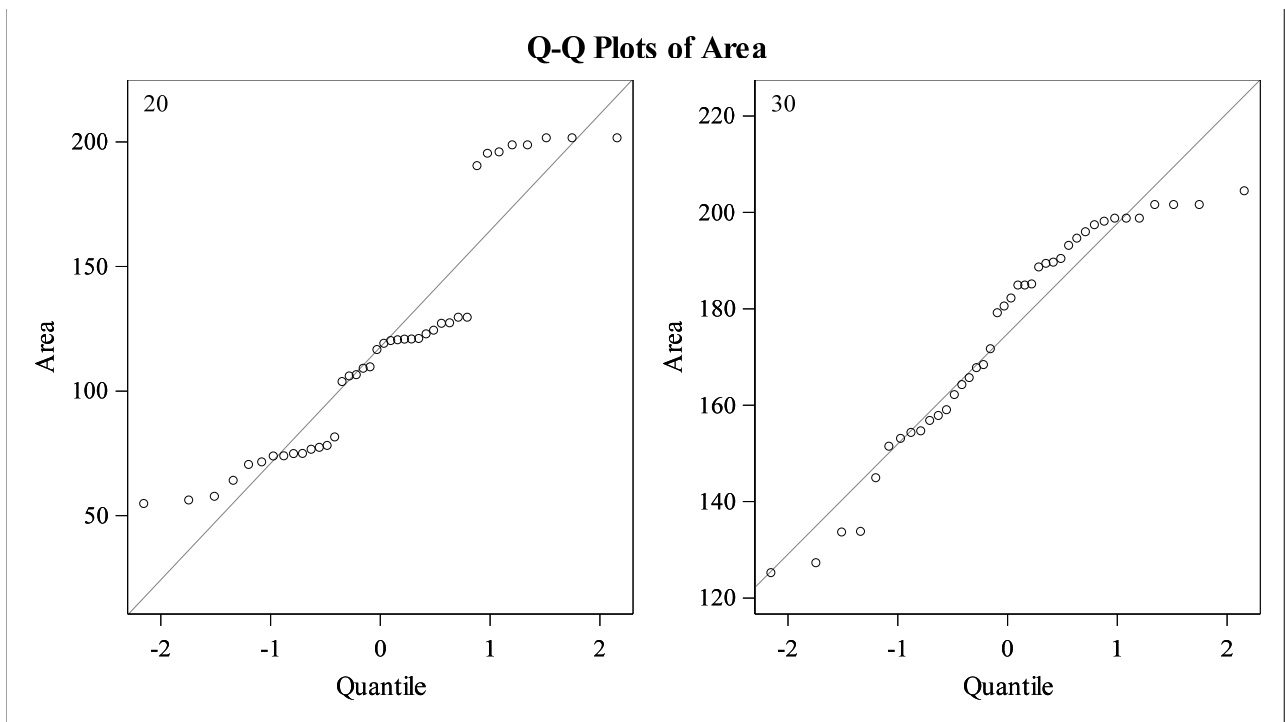
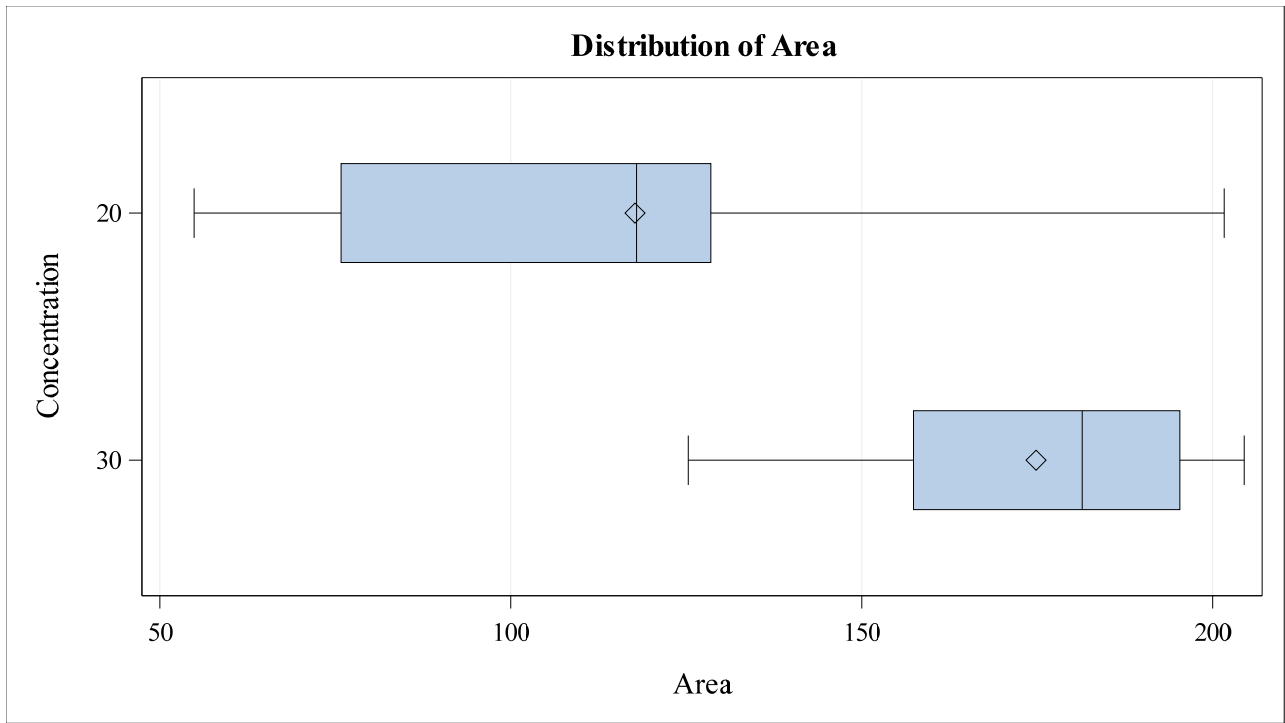
Concentration	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
20		40	117.7	46.7145	7.3862	54.8700	201.6
30		40	174.8	22.8788	3.6175	125.3	204.5
Diff (1-2)	Pooled		-57.1453	36.7810	8.2245		
Diff (1-2)	Satterthwaite		-57.1453		8.2245		

Concentration	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
20		117.7	102.7	132.6	46.7145	38.2667	59.9830
30		174.8	167.5	182.2	22.8788	18.7414	29.3772
Diff (1-2)	Pooled	-57.1453	-73.5189	-40.7716	36.7810	31.8050	43.6173
Diff (1-2)	Satterthwaite	-57.1453	-73.6164	-40.6741			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	78	-6.95	<.0001
Satterthwaite	Unequal	56.691	-6.95	<.0001

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	39	39	4.17	<.0001





Biomechanical evaluation
Test between collagen concentration

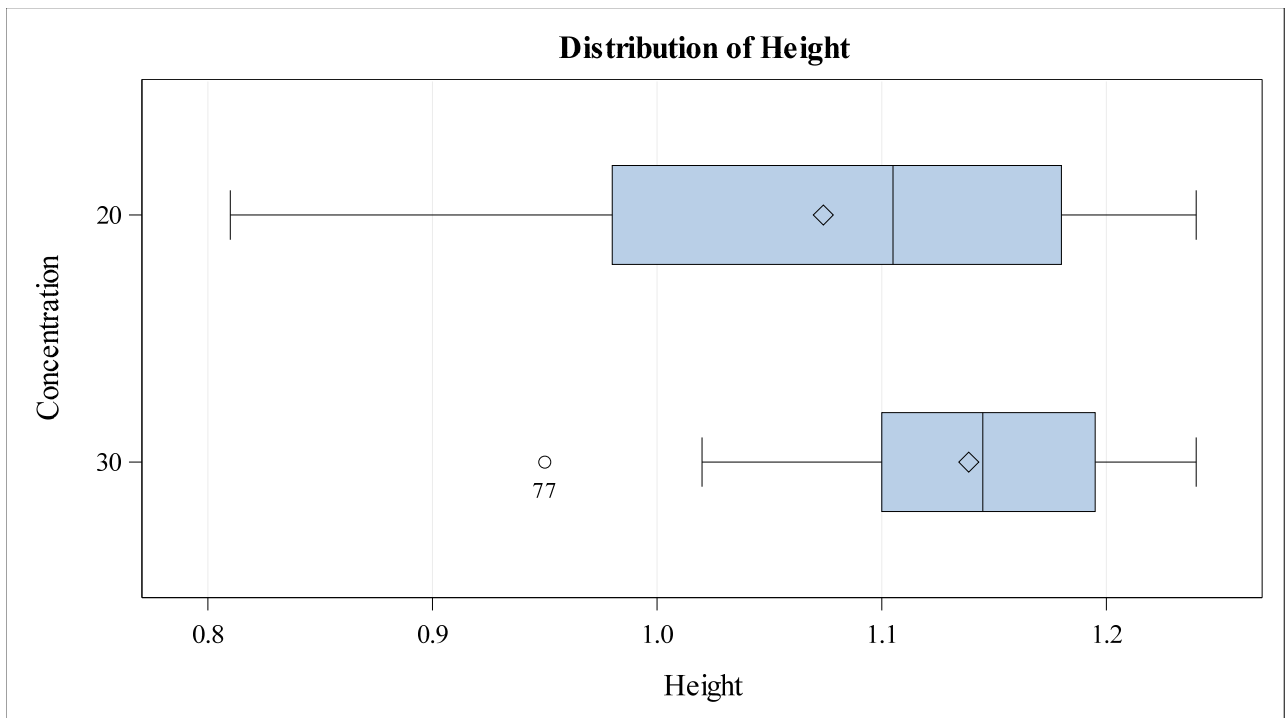
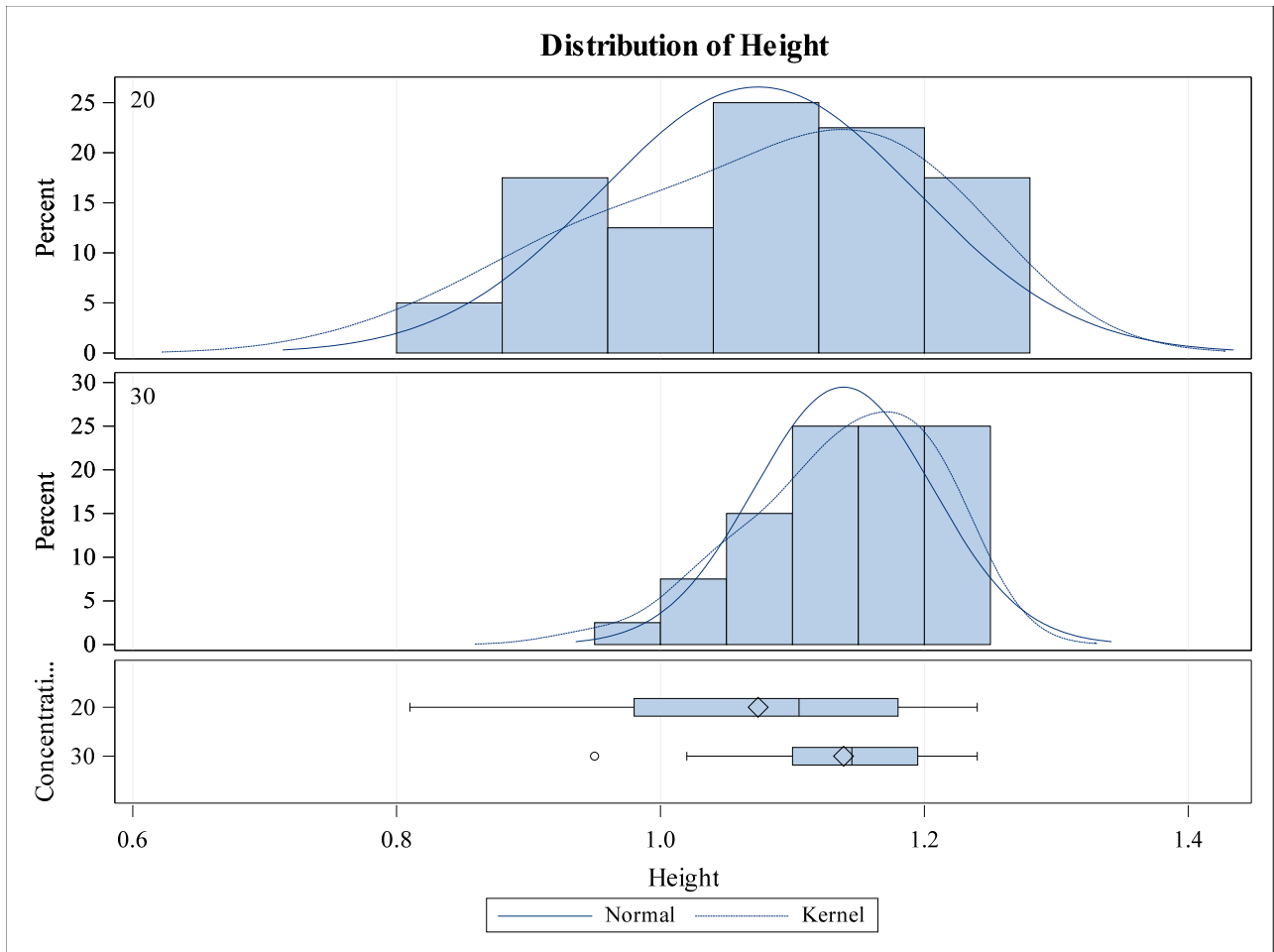
Variable:
Height

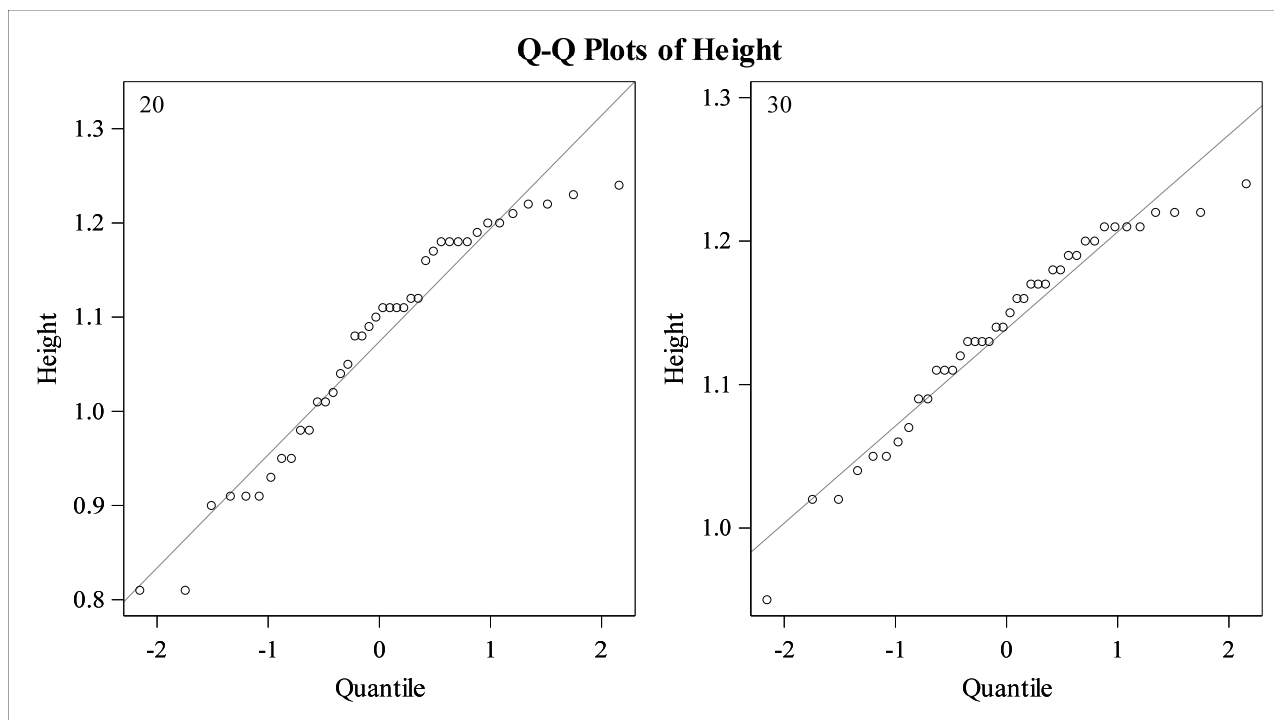
Concentration	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
20		40	1.0740	0.1201	0.0190	0.8100	1.2400
30		40	1.1388	0.0677	0.0107	0.9500	1.2400
Diff (1-2)	Pooled		-0.0647	0.0975	0.0218		
Diff (1-2)	Satterthwaite		-0.0647		0.0218		

Concentration	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
20		1.0740	1.0356	1.1124	0.1201	0.0984	0.1542
30		1.1388	1.1171	1.1604	0.0677	0.0554	0.0869
Diff (1-2)	Pooled	-0.0647	-0.1081	-0.0214	0.0975	0.0843	0.1156
Diff (1-2)	Satterthwaite	-0.0647	-0.1083	-0.0212			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	78	-2.97	0.0039
Satterthwaite	Unequal	61.5	-2.97	0.0042

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	39	39	3.15	0.0005





Biomechanical evaluation
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Concentration=20

Class Level Information		
Class	Levels	Values
Day	5	0 1 3 5 7

Number of Observations Read	40
Number of Observations Used	40

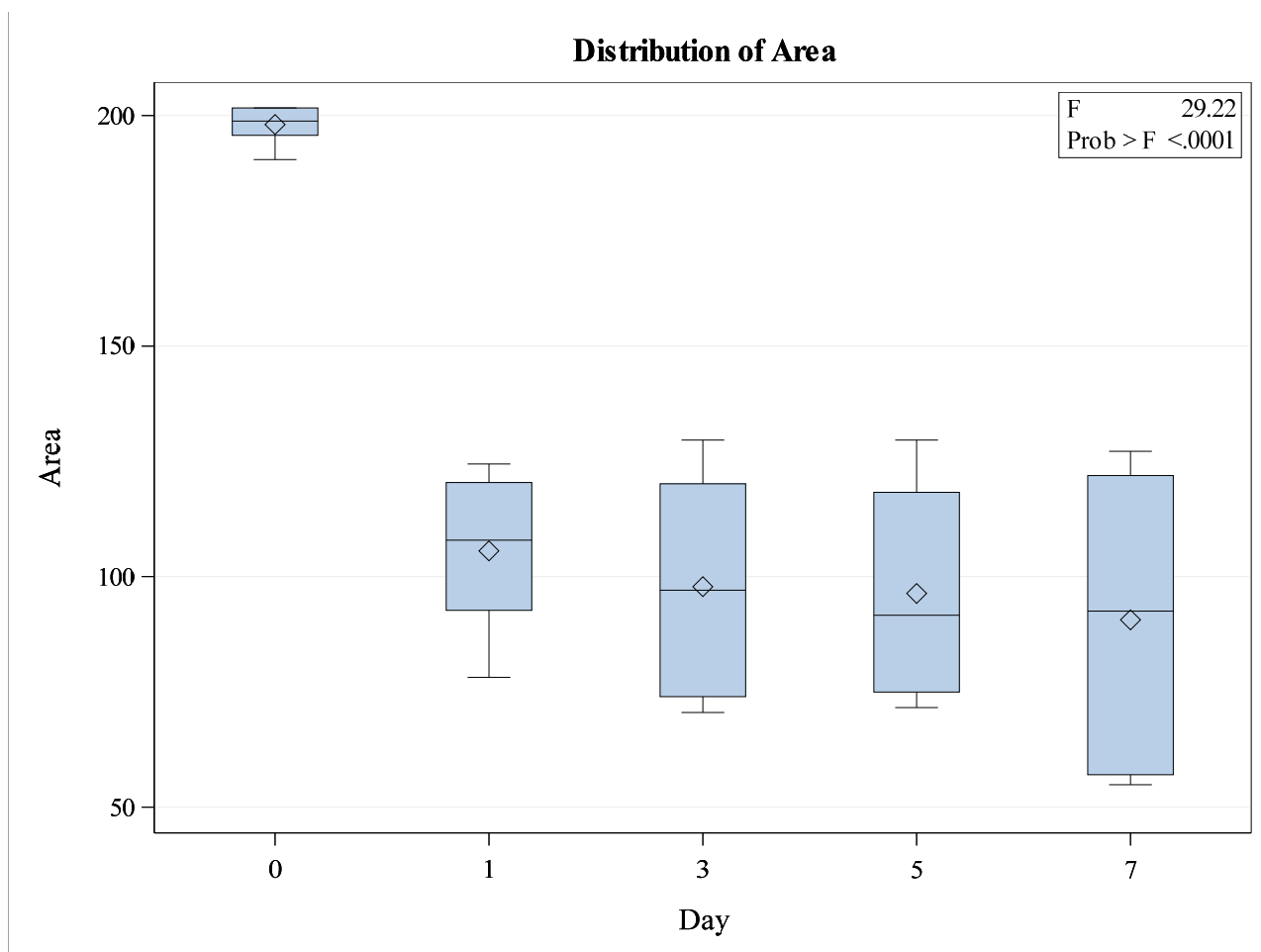
Dependent Variable: Area

Concentration=20

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	65492.61153	16373.15288	29.22	<.0001
Error	35	19614.80616	560.42303		
Corrected Total	39	85107.41770			

R-Square	Coeff Var	Root MSE	Area Mean
0.769529	20.11497	23.67326	117.6898

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Day	4	65492.61153	16373.15288	29.22	<.0001



Concentration=30

Class Level Information		
Class	Levels	Values
Day	5	0 1 3 5 7

Number of Observations Read	40
Number of Observations Used	40

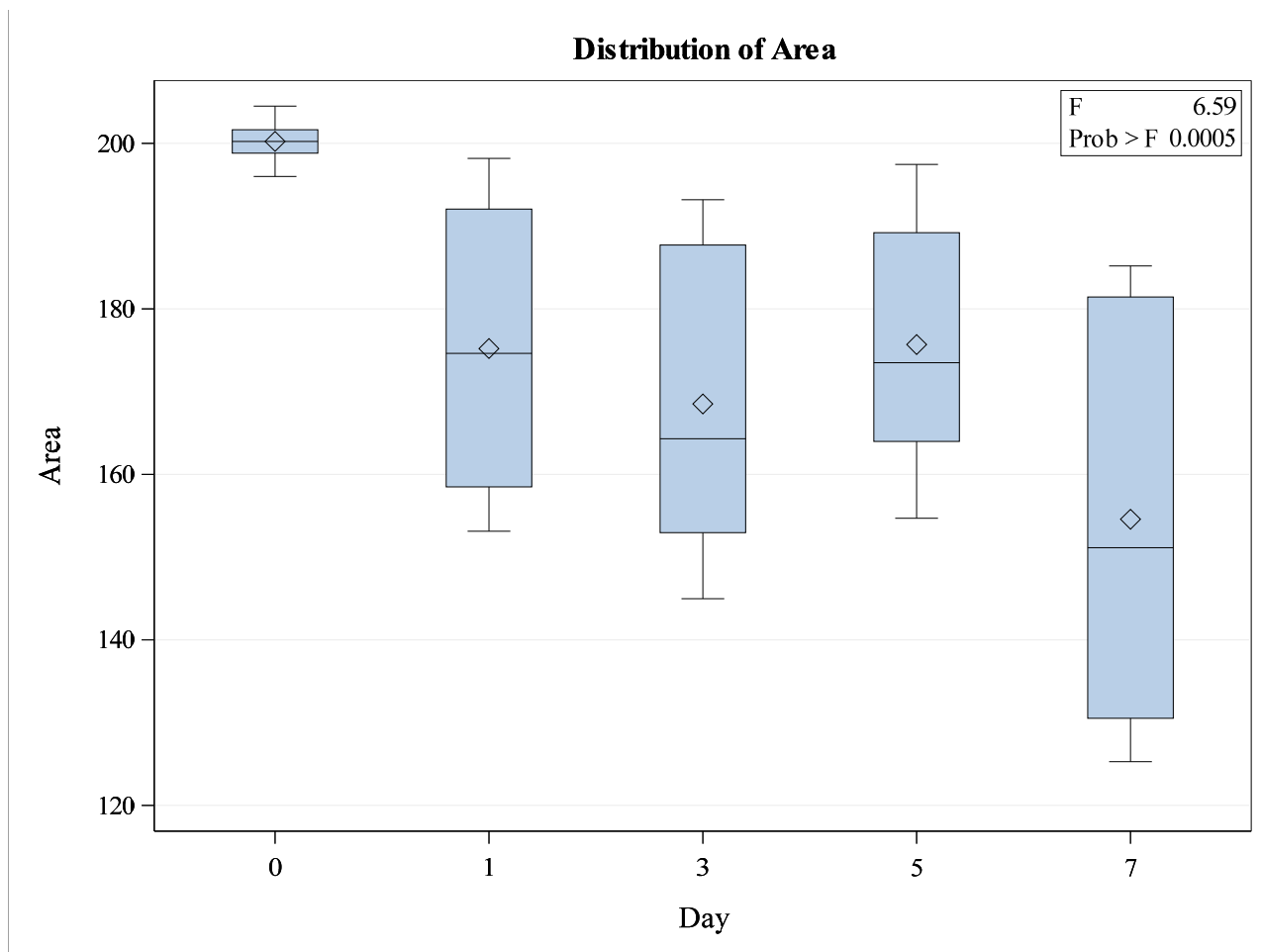
Dependent Variable: Area

Concentration=30

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	8771.99462	2192.99866	6.59	0.0005
Error	35	11642.17938	332.63370		
Corrected Total	39	20414.17400			

R-Square	Coeff Var	Root MSE	Area Mean
0.429701	10.43169	18.23825	174.8350

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Day	4	8771.994625	2192.998656	6.59	0.0005



Biomechanical evaluation
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Concentration=20

Class Level Information		
Class	Levels	Values
Day	5	0 1 3 5 7

Number of Observations Read	40
Number of Observations Used	40

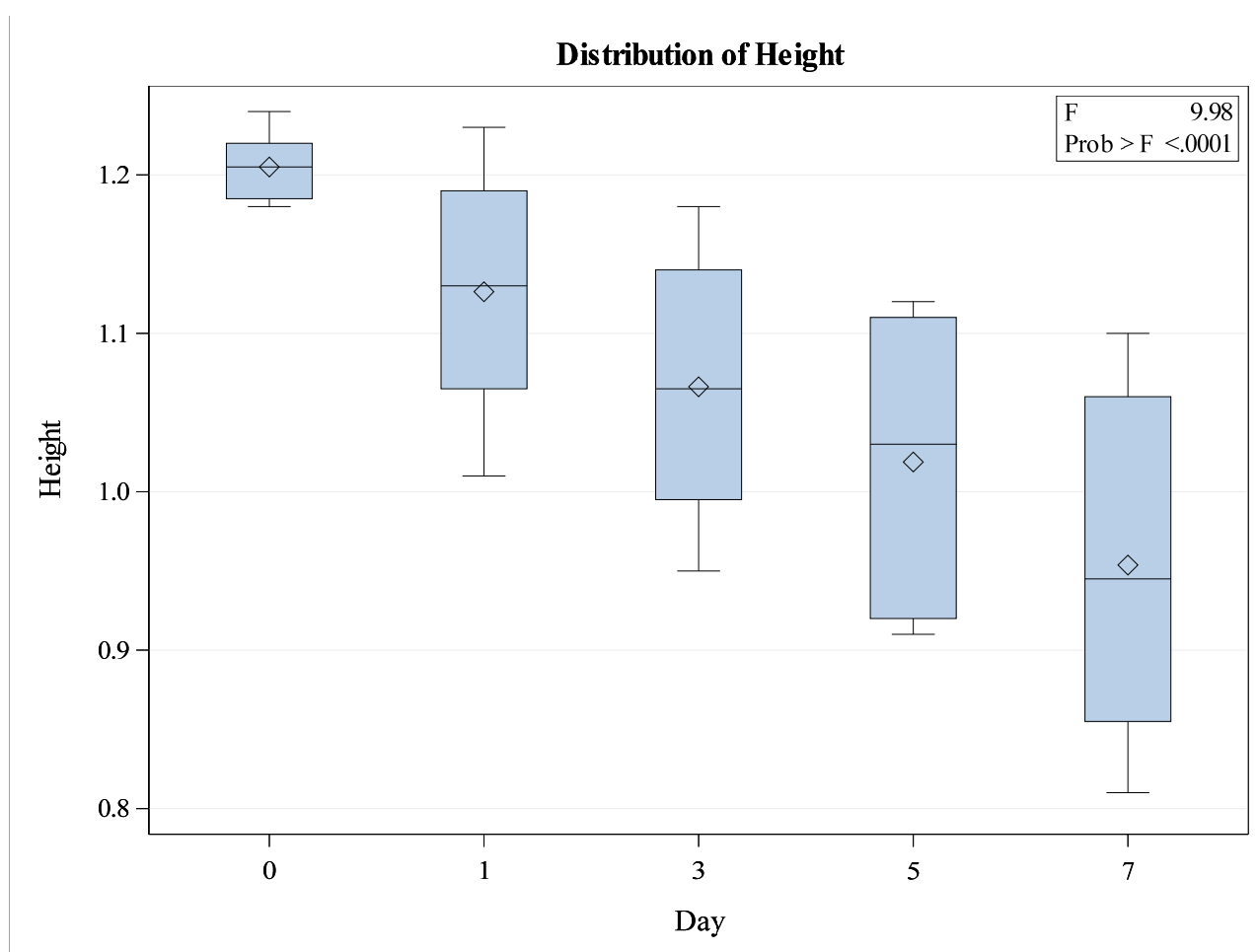
Dependent Variable: Height

Concentration=20

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.29971000	0.07492750	9.98	<.0001
Error	35	0.26285000	0.00751000		
Corrected Total	39	0.56256000			

R-Square	Coeff Var	Root MSE	Height Mean
0.532761	8.068925	0.086660	1.074000

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Day	4	0.29971000	0.07492750	9.98	<.0001



Concentration=30

Class Level Information		
Class	Levels	Values
Day	5	0 1 3 5 7

Number of Observations Read	40
Number of Observations Used	40

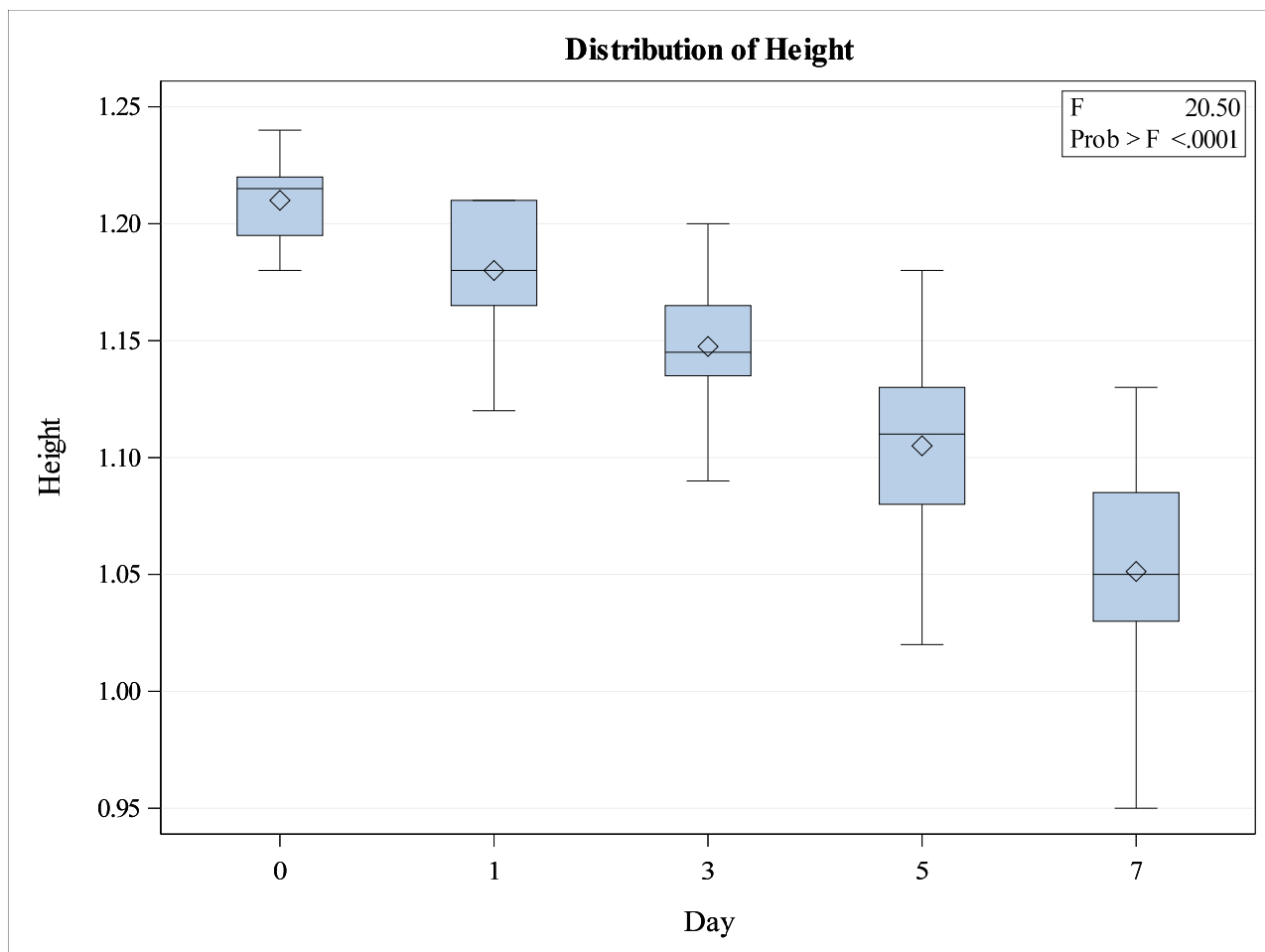
Dependent Variable: Height

Concentration=30

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	0.12520000	0.03130000	20.50	<.0001
Error	35	0.05343750	0.00152679		
Corrected Total	39	0.17863750			

R-Square	Coeff Var	Root MSE	Height Mean
0.700861	3.431316	0.039074	1.138750

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Day	4	0.12520000	0.03130000	20.50	<.0001



Biomechanical evaluation
Test between collagen concentration

Variable:
Area

Concentration=20

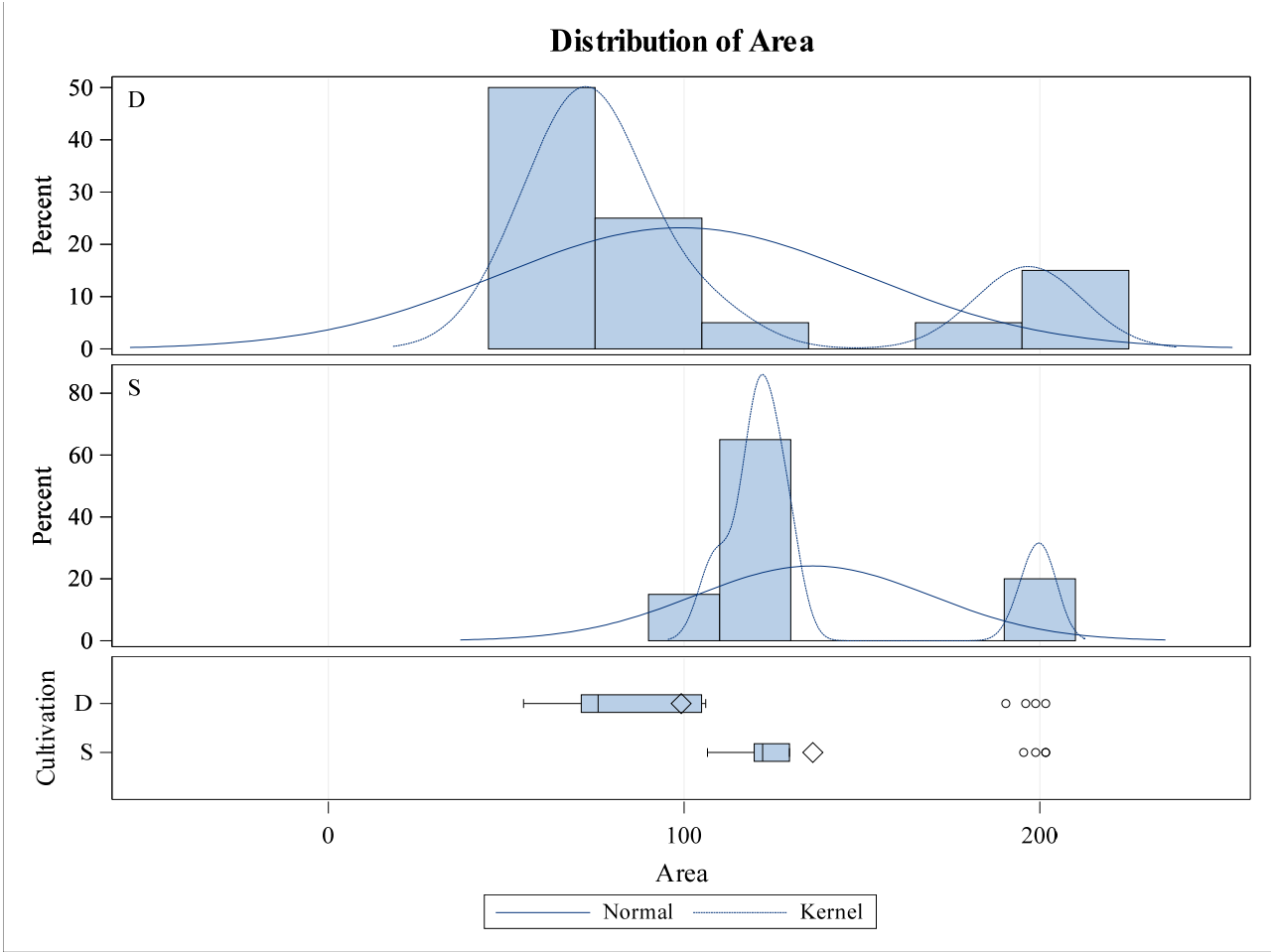
Cultivation	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
D		20	99.1900	51.6515	11.5496	54.8700	201.6
S		20	136.2	33.0296	7.3857	106.6	201.6
Diff (1-2)	Pooled		-36.9995	43.3522	13.7092		
Diff (1-2)	Satterthwaite		-36.9995		13.7092		

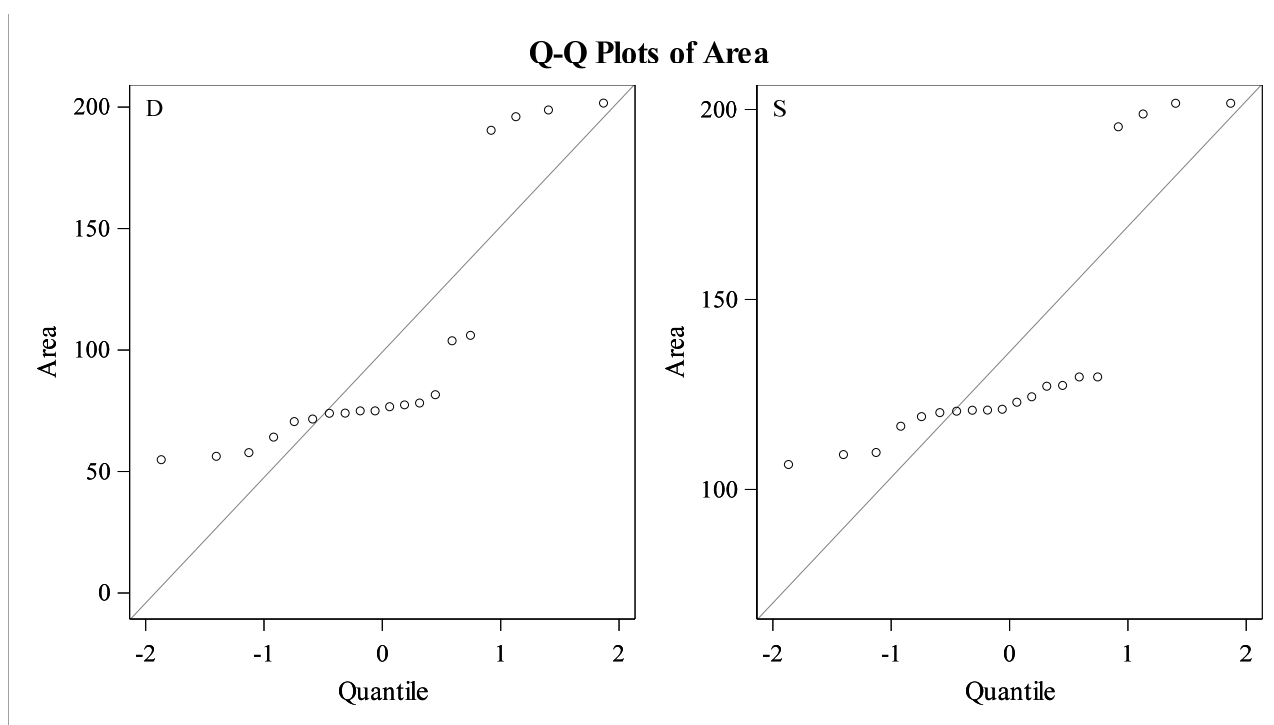
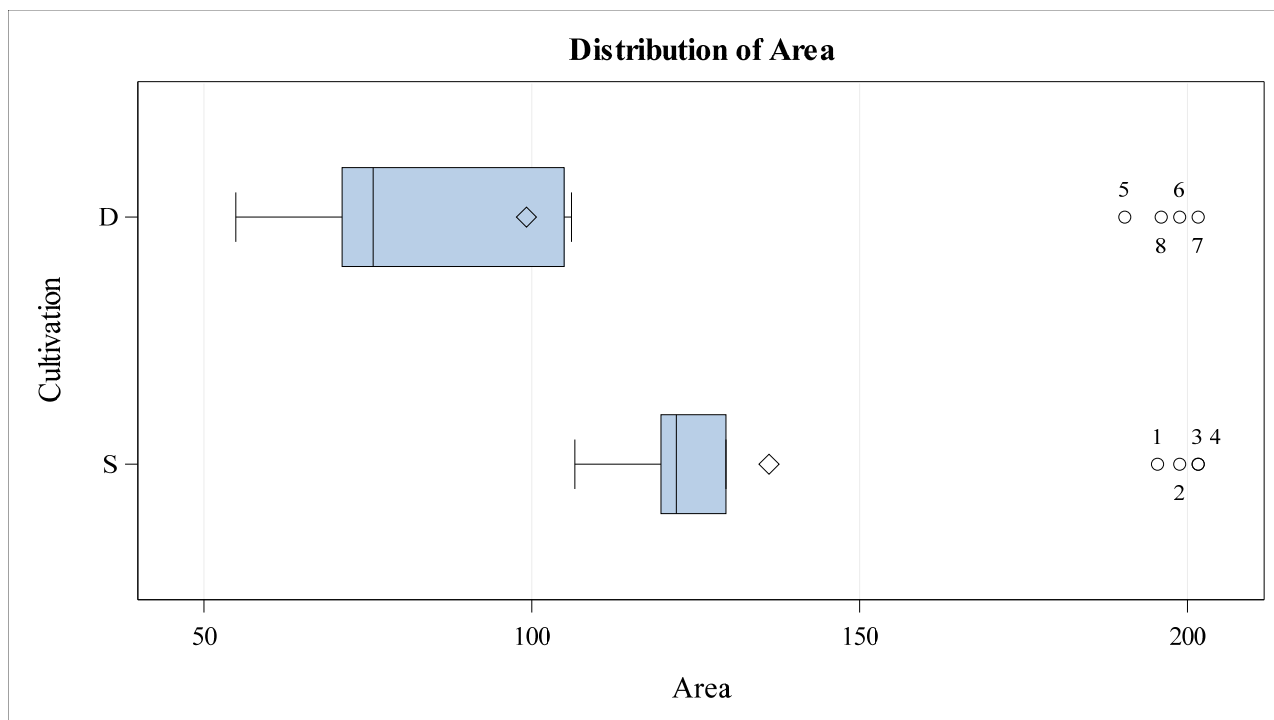
Cultivation	Method	Mean	95% CL Mean	Std Dev	95% CL Std Dev
D		99.1900	75.0164 123.4	51.6515	39.2804 75.4407
S		136.2	120.7 151.6	33.0296	25.1187 48.2422

Cultivation	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
Diff (1-2)	Pooled	-36.9995	-64.7523	-9.2467	43.3522	35.4294	55.8714
Diff (1-2)	Satterthwaite	-36.9995	-64.9136	-9.0854			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	38	-2.70	0.0103
Satterthwaite	Unequal	32.313	-2.70	0.0110

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	19	19	2.45	0.0583





Variable:
Area

Concentration=30

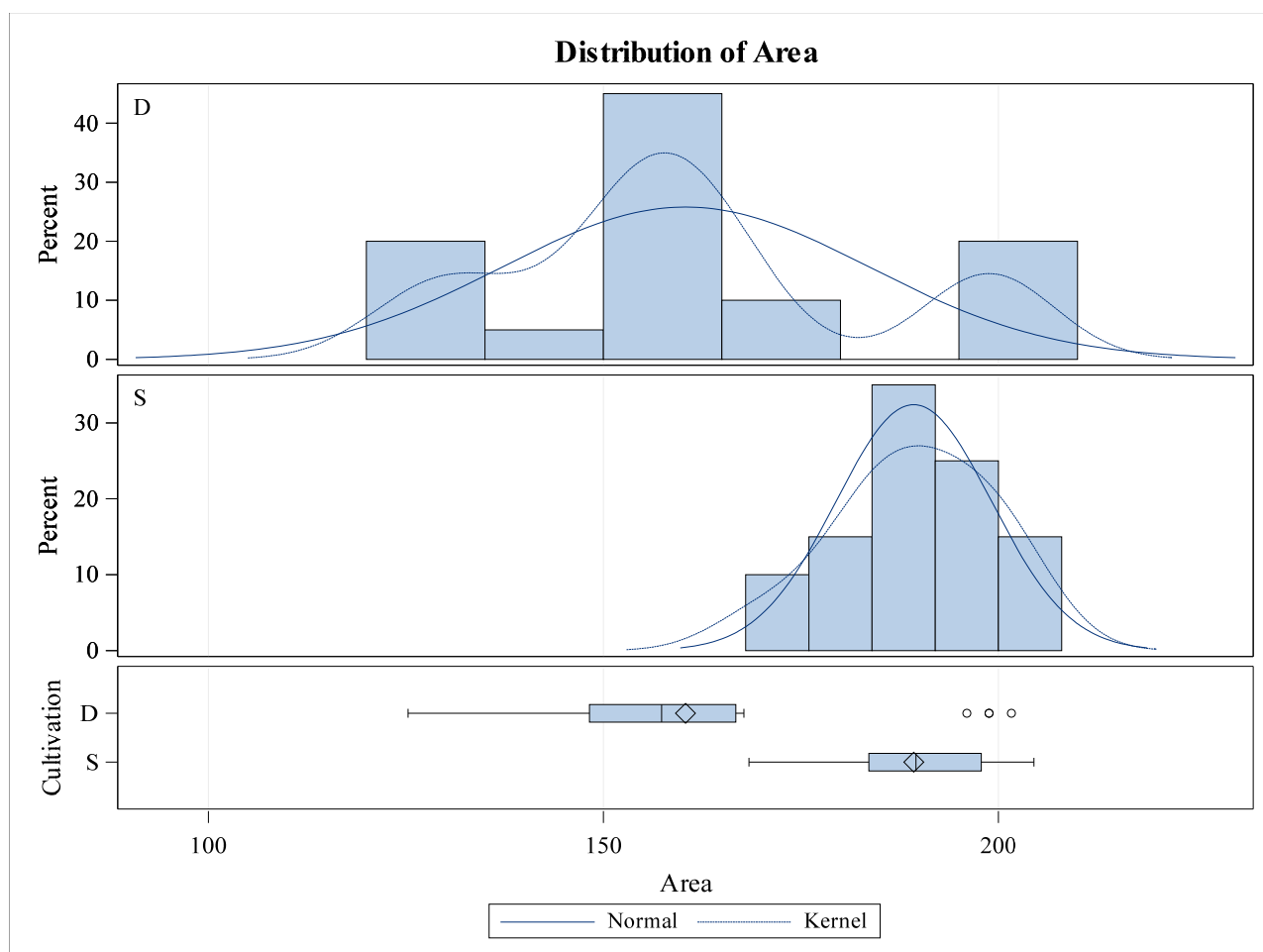
Cultivation	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
D		20	160.4	23.2004	5.1878	125.3	201.6
S		20	189.3	9.8511	2.2028	168.4	204.5
Diff (1-2)	Pooled		-28.8850	17.8228	5.6361		

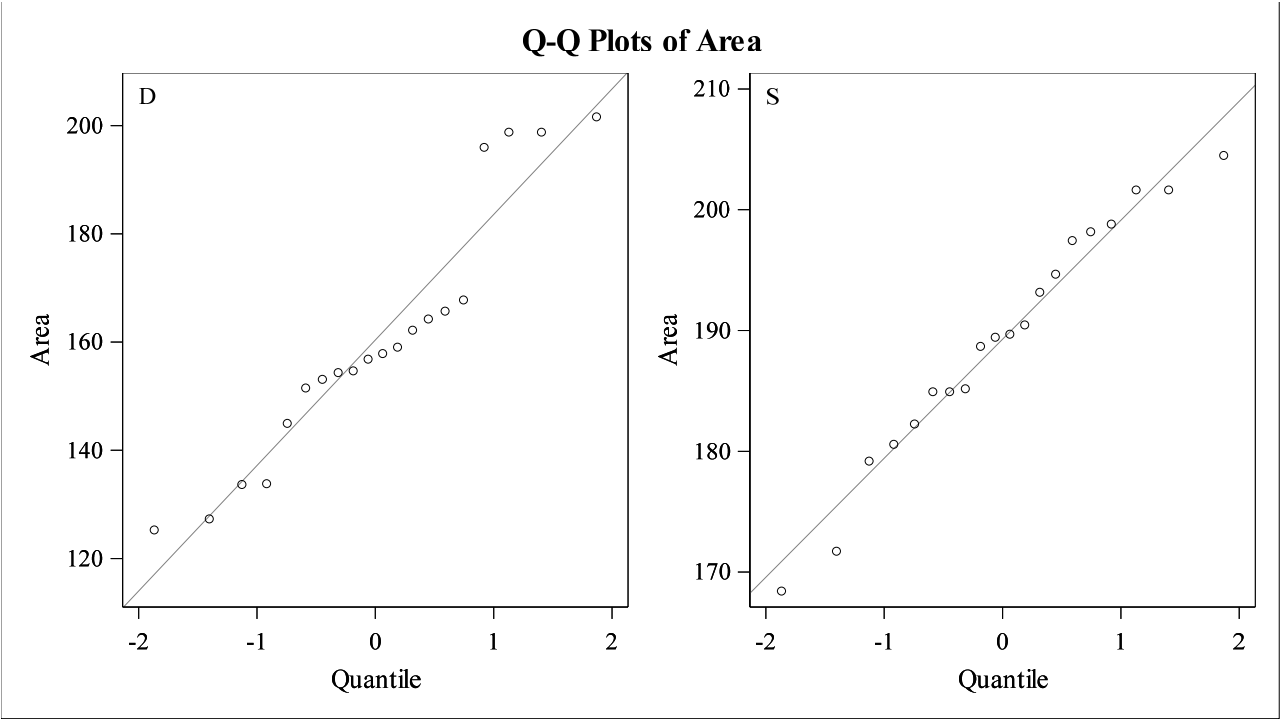
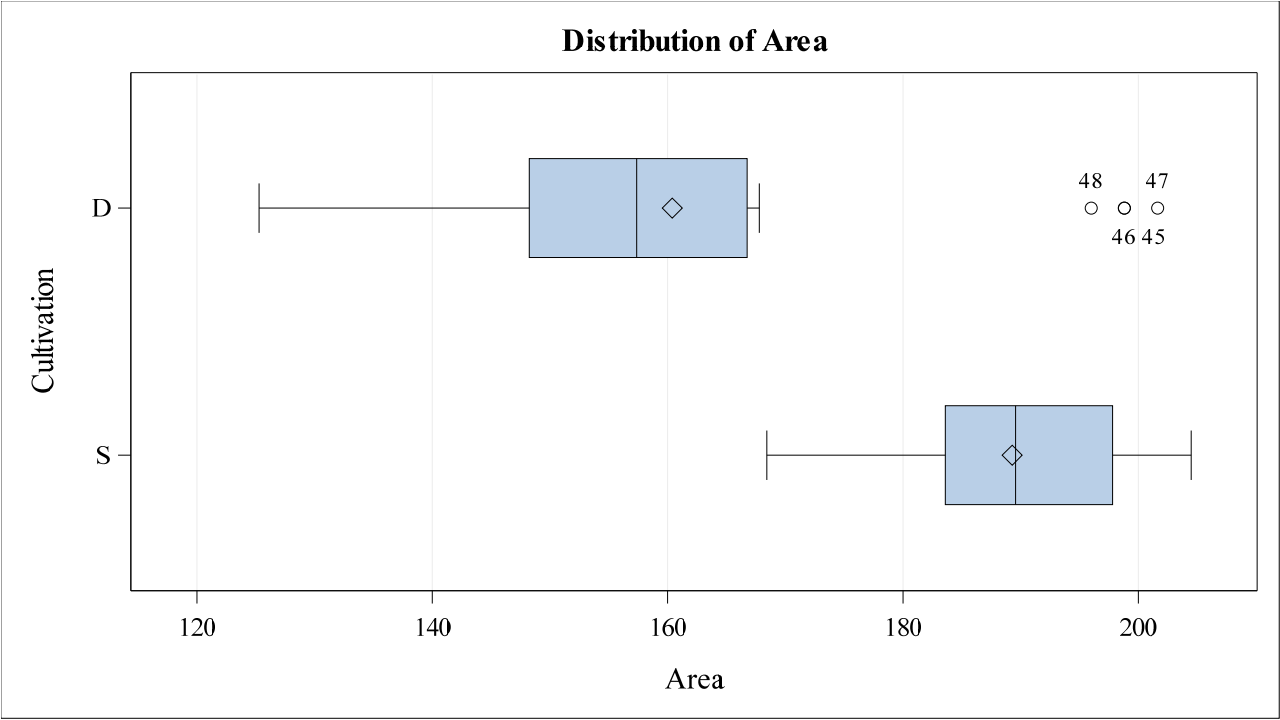
Cultivation	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
Diff (1-2)	Satterthwaite		-28.8850		5.6361		

Cultivation	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
D		160.4	149.5	171.3	23.2004	17.6437	33.8858
S		189.3	184.7	193.9	9.8511	7.4917	14.3882
Diff (1-2)	Pooled	-28.8850	-40.2946	-17.4754	17.8228	14.5656	22.9696
Diff (1-2)	Satterthwaite	-28.8850	-40.4781	-17.2919			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	38	-5.13	<.0001
Satterthwaite	Unequal	25.635	-5.13	<.0001

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	19	19	5.55	0.0005





Biomechanical evaluation
Test between collagen concentration

Variable:
Height

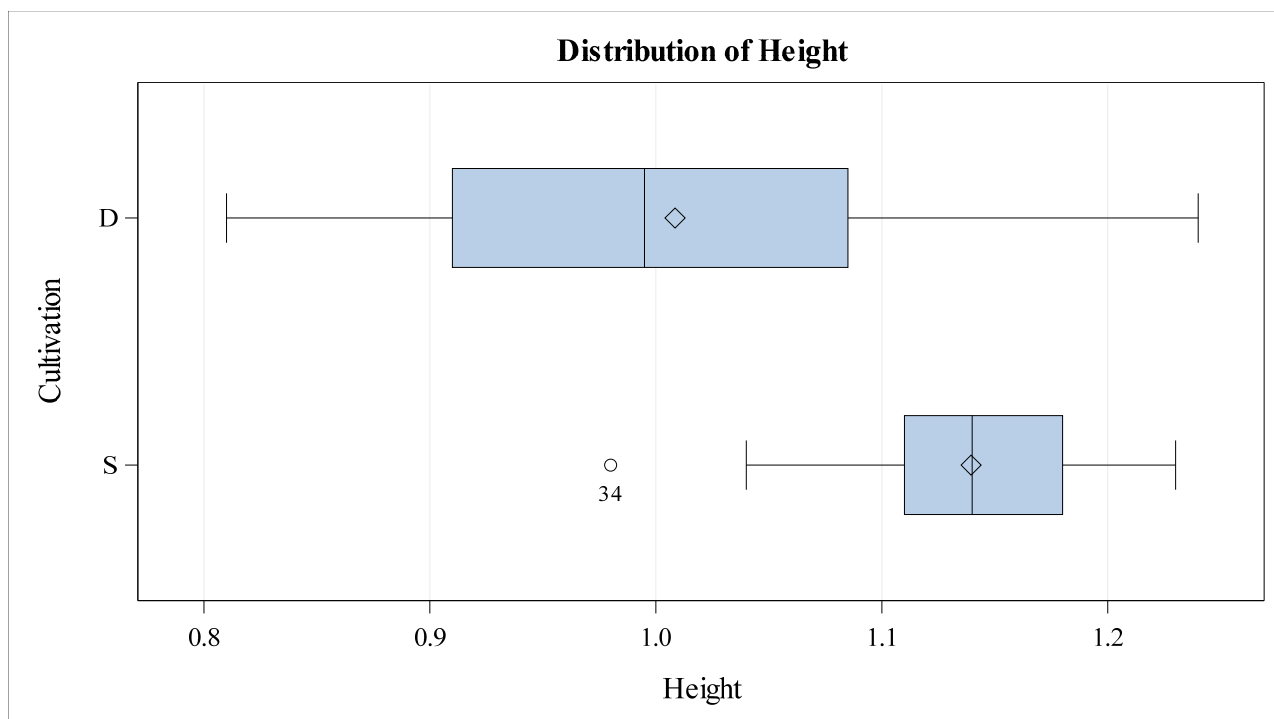
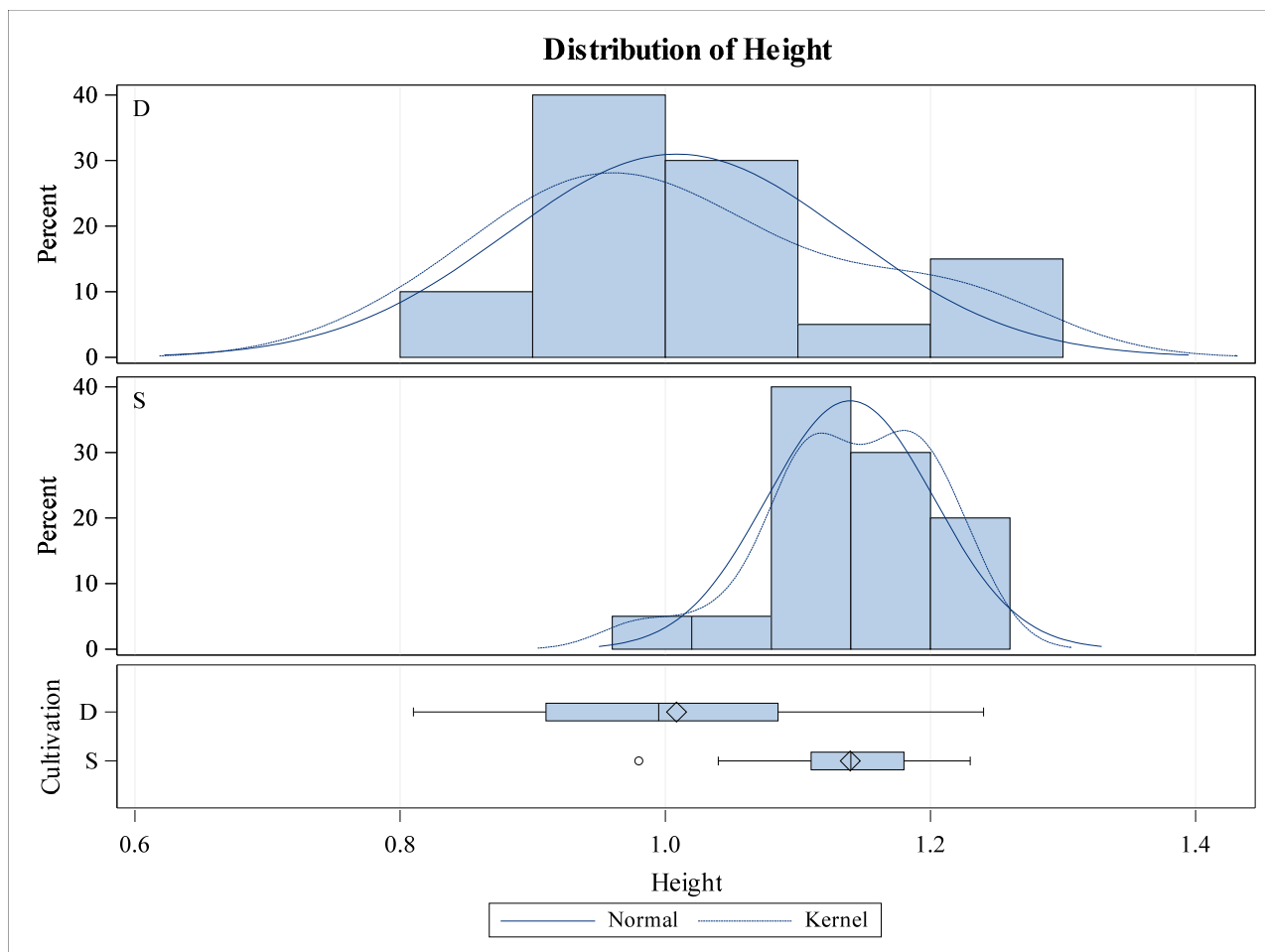
Concentration=20

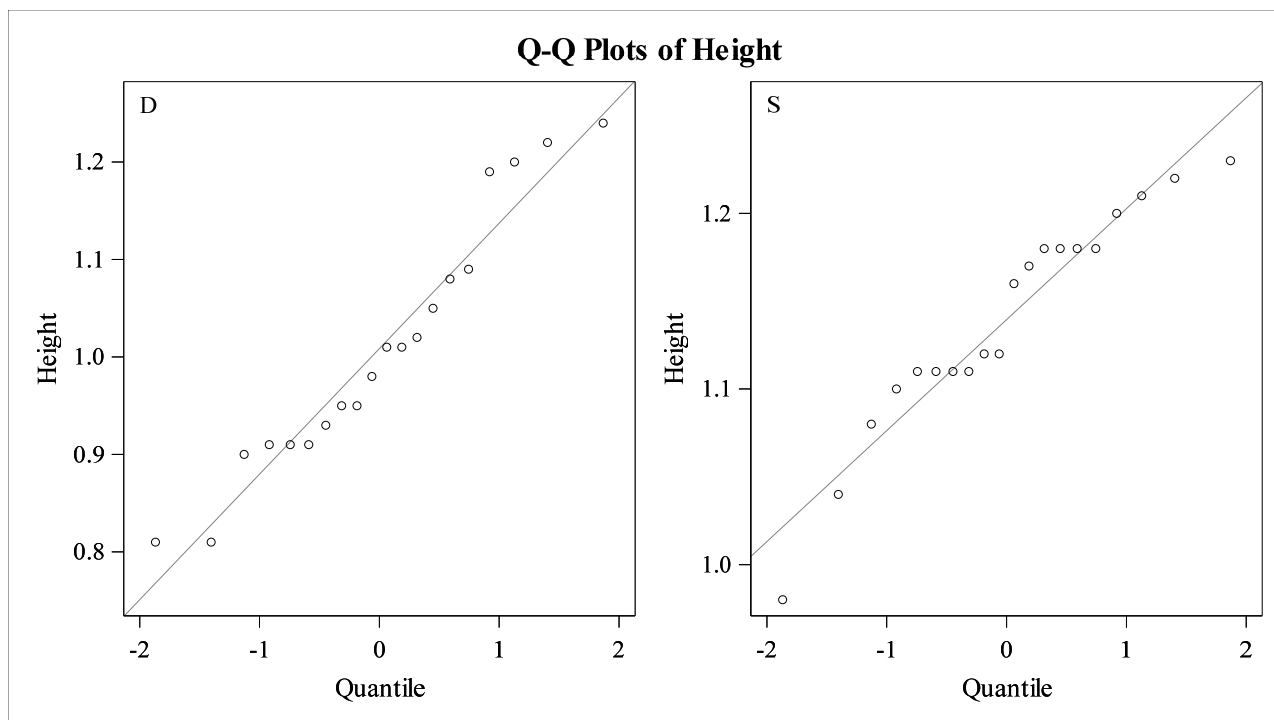
Cultivation	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
D		20	1.0085	0.1288	0.0288	0.8100	1.2400
S		20	1.1395	0.0632	0.0141	0.9800	1.2300
Diff (1-2)	Pooled		-0.1310	0.1014	0.0321		
Diff (1-2)	Satterthwaite		-0.1310		0.0321		

Cultivation	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
D		1.0085	0.9482	1.0688	0.1288	0.0979	0.1881
S		1.1395	1.1099	1.1691	0.0632	0.0481	0.0923
Diff (1-2)	Pooled	-0.1310	-0.1959	-0.0661	0.1014	0.0829	0.1307
Diff (1-2)	Satterthwaite	-0.1310	-0.1967	-0.0653			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	38	-4.08	0.0002
Satterthwaite	Unequal	27.652	-4.08	0.0003

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	19	19	4.15	0.0032





Variable:
Height

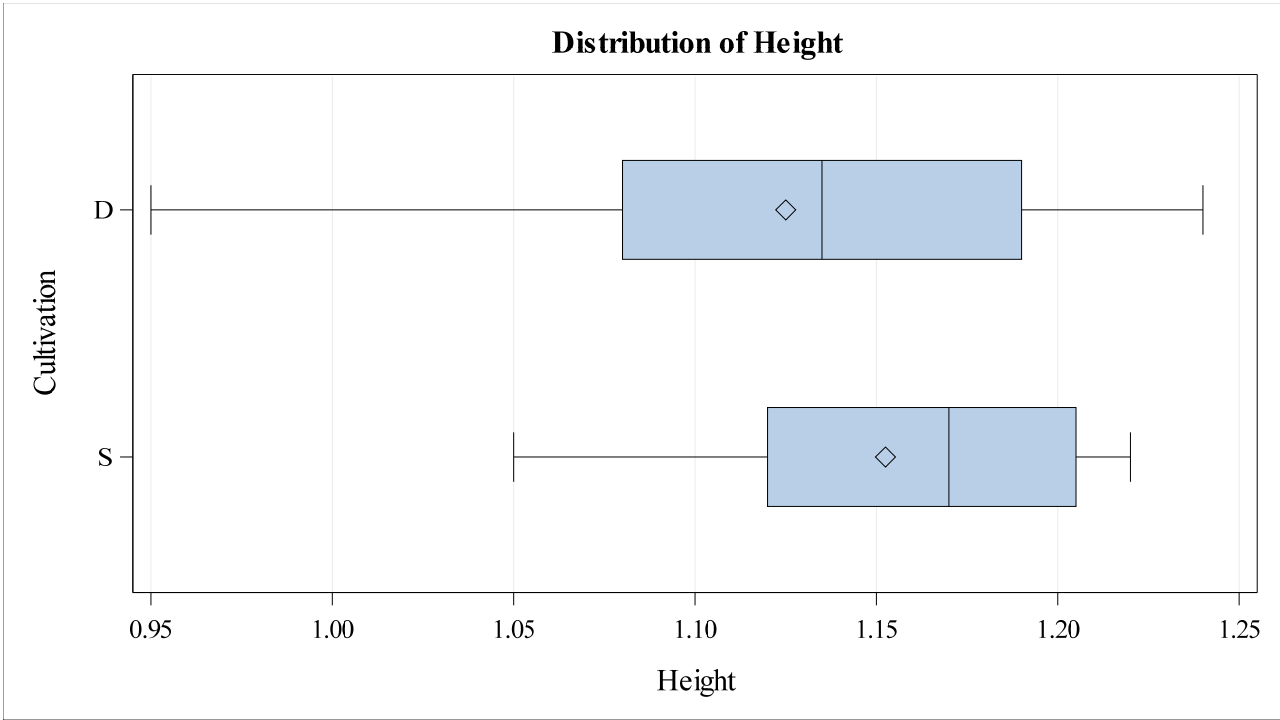
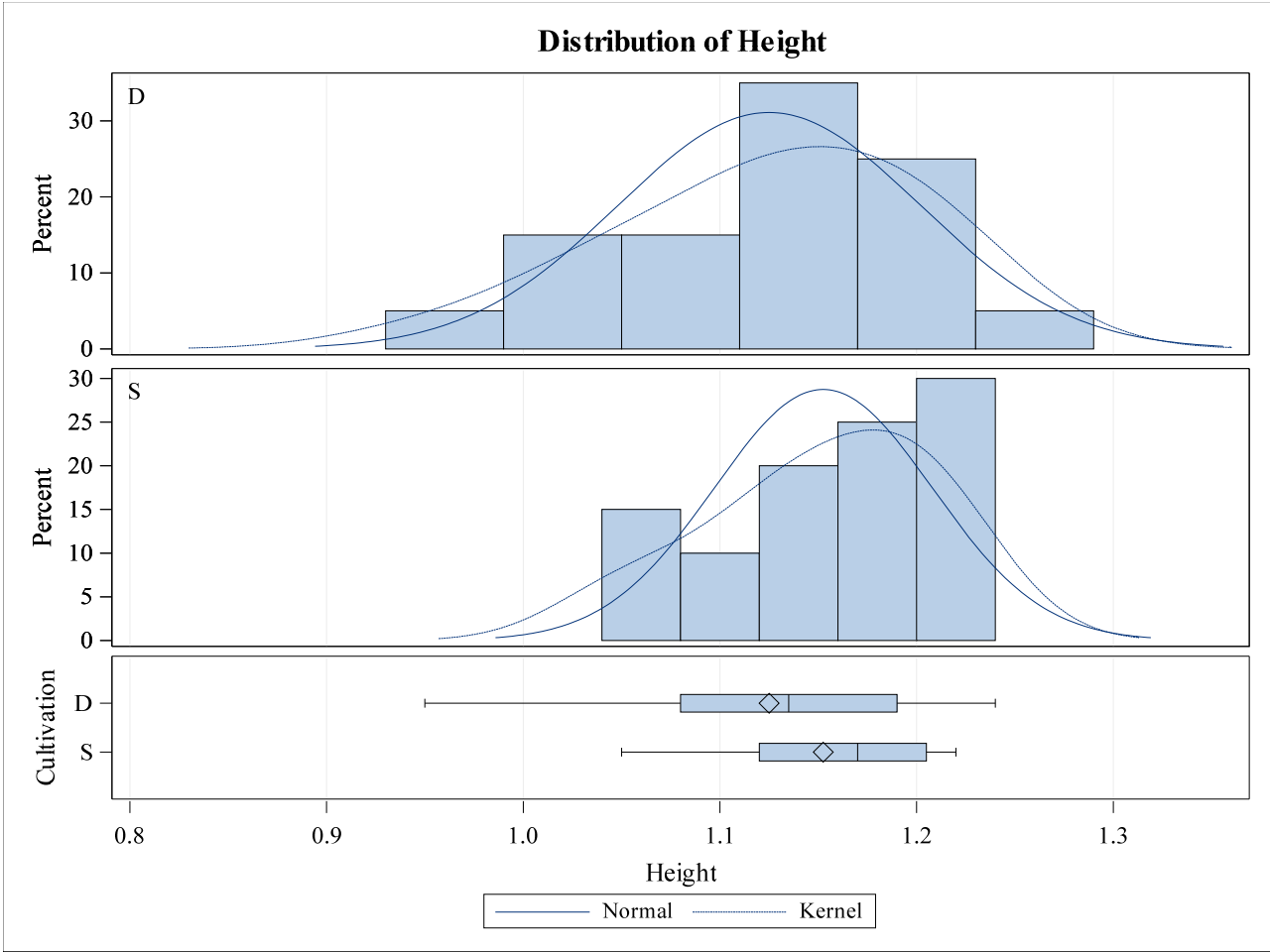
Concentration=30

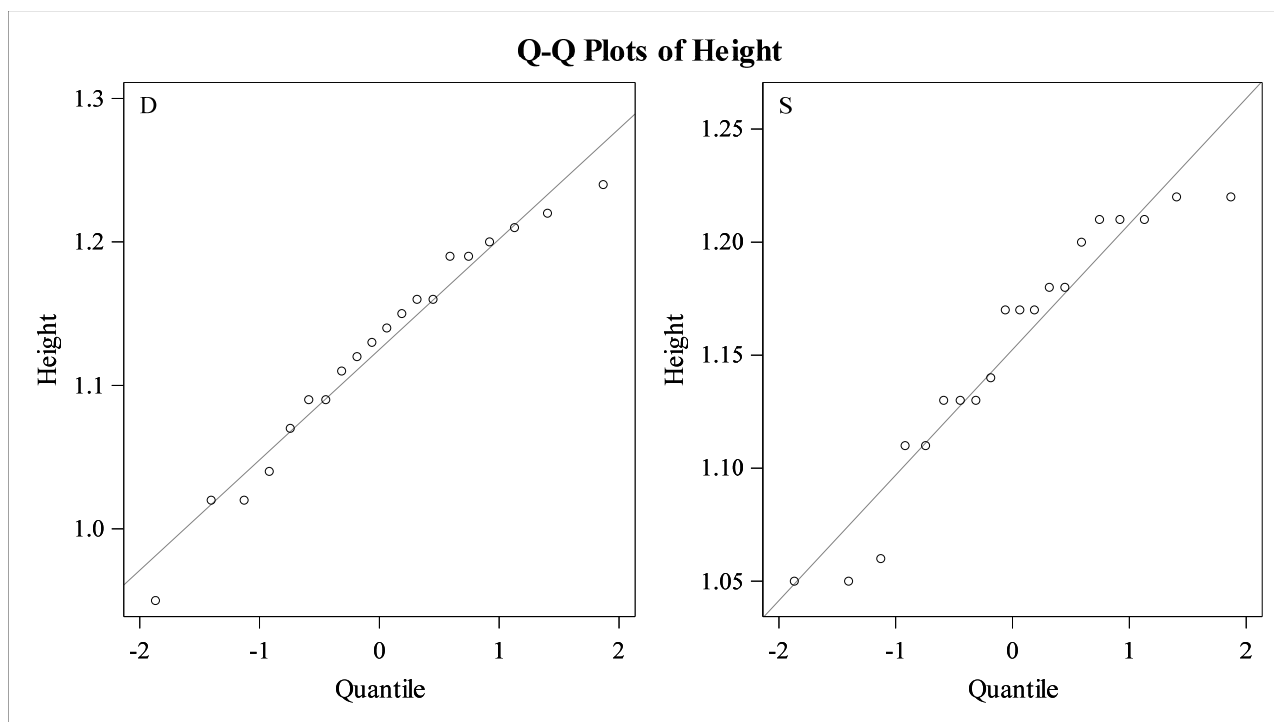
Cultivation	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
D		20	1.1250	0.0769	0.0172	0.9500	1.2400
S		20	1.1525	0.0555	0.0124	1.0500	1.2200
Diff (1-2)	Pooled		-0.0275	0.0671	0.0212		
Diff (1-2)	Satterthwaite		-0.0275		0.0212		

Cultivation	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
D		1.1250	1.0890	1.1610	0.0769	0.0585	0.1124
S		1.1525	1.1265	1.1785	0.0555	0.0422	0.0811
Diff (1-2)	Pooled	-0.0275	-0.0705	0.0155	0.0671	0.0548	0.0865
Diff (1-2)	Satterthwaite	-0.0275	-0.0706	0.0156			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	38	-1.30	0.2028
Satterthwaite	Unequal	34.566	-1.30	0.2035

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	19	19	1.92	0.1640





Biomechanical evaluation
Test between collagen concentration

Concentration=20

Class Level Information		
Class	Levels	Values
Day	5	0 1 3 5 7
Cultivation	2	D S

Number of Observations Read	40
Number of Observations Used	40

Dependent Variable: Area

Concentration=20

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	79182.24154	15836.44831	90.87	<.0001
Error	34	5925.17616	174.26989		
Corrected Total	39	85107.41770			

R-Square	Coeff Var	Root MSE	Area Mean
0.930380	11.21689	13.20113	117.6898

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Day	4	65492.61153	16373.15288	93.95	<.0001
Cultivation	1	13689.63000	13689.63000	78.55	<.0001

Concentration=30

Class Level Information		
Class	Levels	Values
Day	5	0 1 3 5 7
Cultivation	2	D S

Number of Observations Read	40
Number of Observations Used	40

Dependent Variable: Area

Concentration=30

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	17115.42687	3423.08537	35.28	<.0001
Error	34	3298.74713	97.02197		
Corrected Total	39	20414.17400			

R-Square	Coeff Var	Root MSE	Area Mean
0.838409	5.633868	9.849973	174.8350

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Day	4	8771.994625	2192.998656	22.60	<.0001
Cultivation	1	8343.432250	8343.432250	86.00	<.0001

Biomechanical evaluation
Test between collagen concentration

Model: MODEL1

Dependent Variable: Area

Concentration=20

Number of Observations Read	40
Number of Observations Used	40

Stepwise Selection: Step 1

Variable Day Entered: R-Square = 0.3876 and C(p) = 14.1799

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	32987	32987	24.05	<.0001
Error	38	52121	1371.59832		
Corrected Total	39	85107			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	153.56851	9.37101	368348	268.55	<.0001
Day	-11.21211	2.28629	32987	24.05	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable cultivation_new Entered: R-Square = 0.5484 and C(p) = 3.0000

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	46676	23338	22.47	<.0001
Error	37	38431	1038.67854		
Corrected Total	39	85107			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	209.06776	17.32638	151231	145.60	<.0001
Day	-11.21211	1.98957	32987	31.76	<.0001
cultivation_new	-36.99950	10.19156	13690	13.18	0.0009

Bounds on condition number: 1, 4

All variables left in the model are significant at the 0.1500 level.

All variables have been entered into the model.

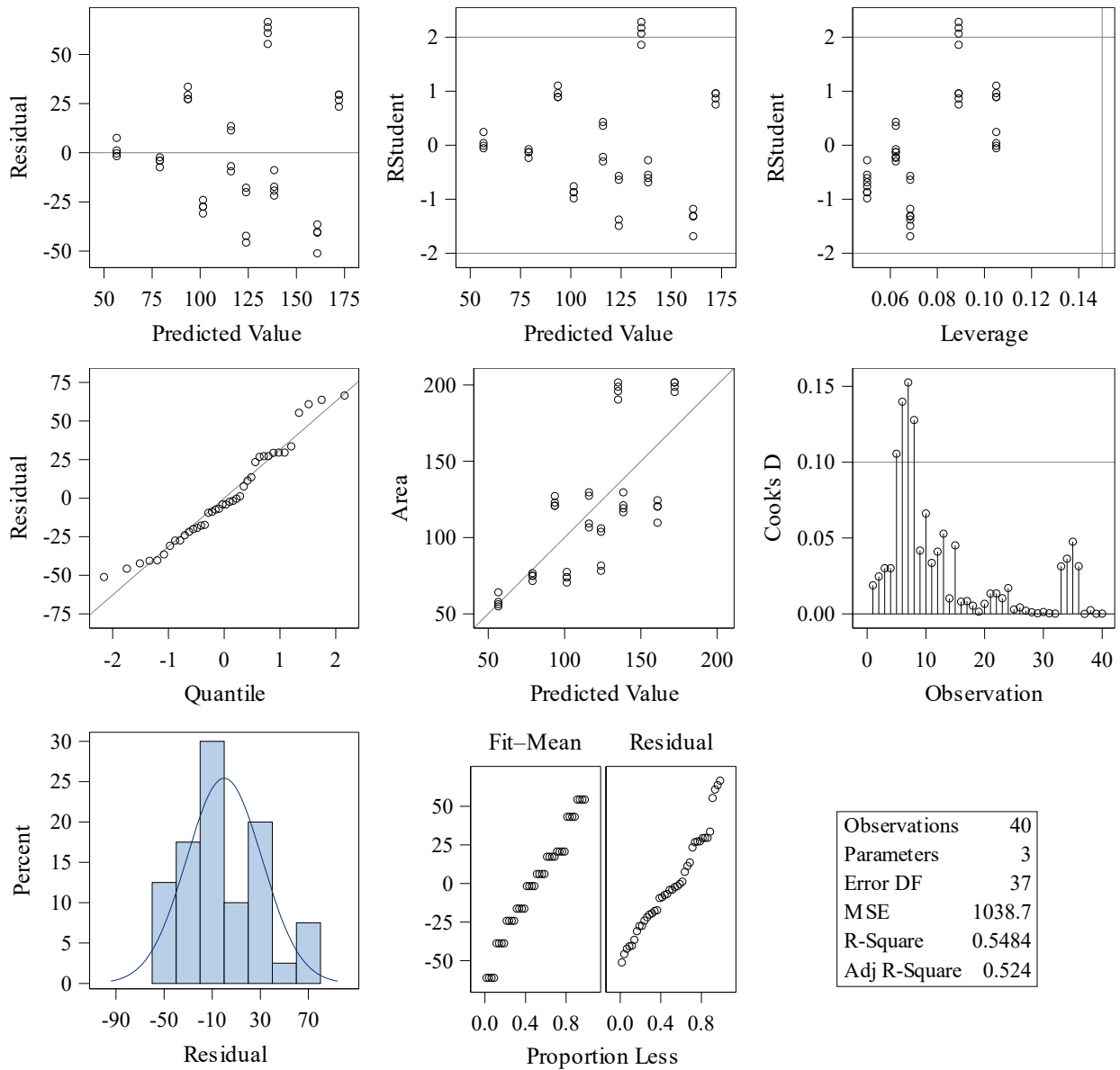
Summary of Stepwise Selection									
Step	Variable Entered	Variable Removed	Label	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	Day			1	0.3876	0.3876	14.1799	24.05	<.0001
2	cultivation_new		Cultivation type	2	0.1609	0.5484	3.0000	13.18	0.0009

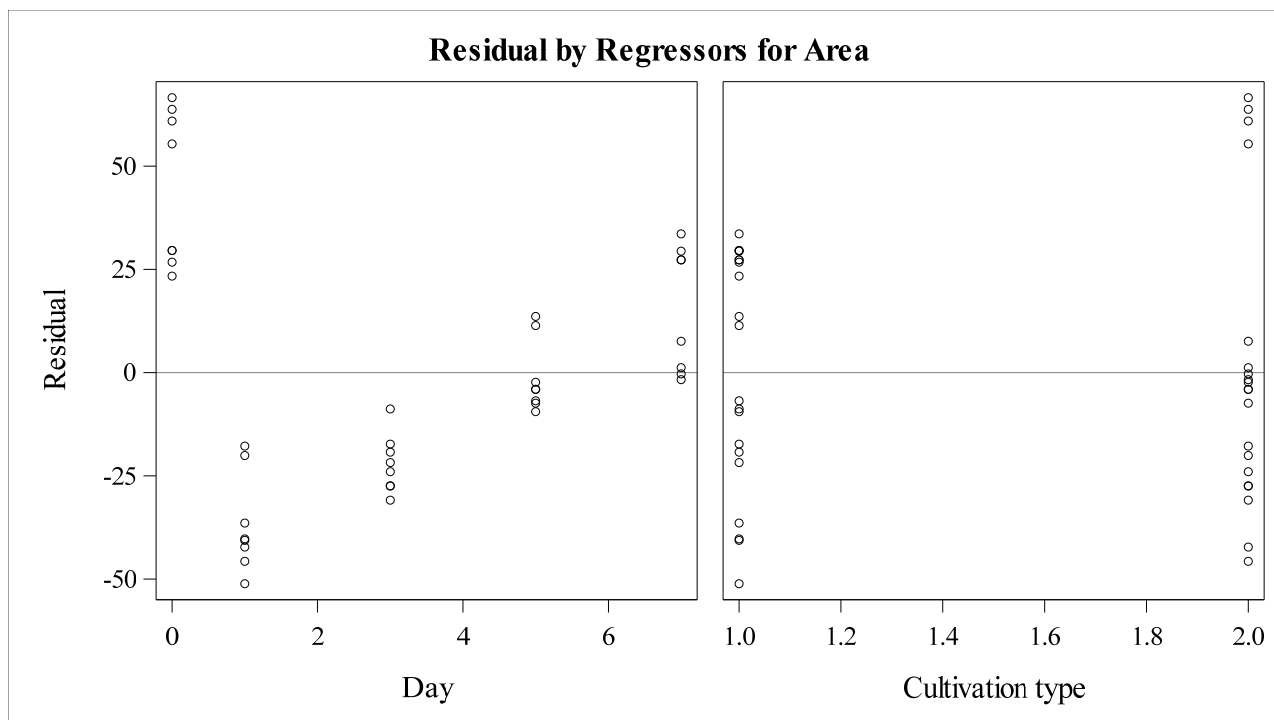
Model: MODEL1

Dependent Variable: Area

Concentration=20

Fit Diagnostics for Area





Model: MODEL1

Dependent Variable: Area

Concentration=30

Number of Observations Read	40
Number of Observations Used	40

Stepwise Selection: Step 1

Variable cultivation_new Entered: R-Square = 0.4087 and C(p) = 37.0438

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	8343.43225	8343.43225	26.27	<.0001
Error	38	12071	317.65110		
Corrected Total	39	20414			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	218.16250	8.91138	190380	599.34	<.0001
cultivation_new	-28.88500	5.63605	8343.43225	26.27	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable Day Entered: R-Square = 0.7005 and C(p) = 3.0000

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	14300	7149.89835	43.27	<.0001
Error	37	6114.37730	165.25344		
Corrected Total	39	20414			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	233.40860	6.91103	188495	1140.64	<.0001
Day	-4.76441	0.79358	5956.36445	36.04	<.0001
cultivation_new	-28.88500	4.06514	8343.43225	50.49	<.0001

Bounds on condition number: 1, 4

All variables left in the model are significant at the 0.1500 level.

All variables have been entered into the model.

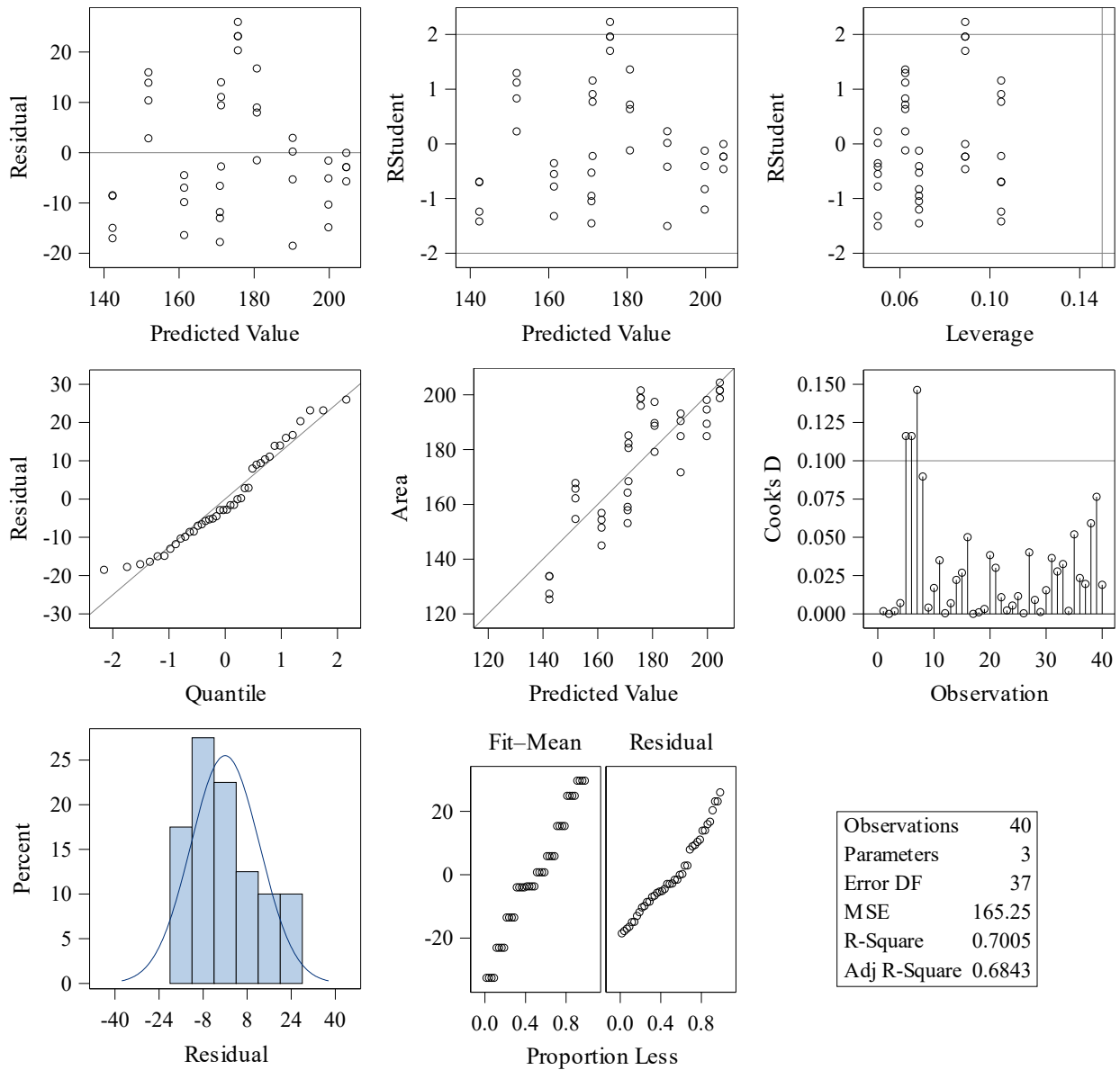
Summary of Stepwise Selection									
Step	Variable Entered	Variable Removed	Label	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	cultivation_new		Cultivation type	1	0.4087	0.4087	37.0438	26.27	<.0001
2	Day			2	0.2918	0.7005	3.0000	36.04	<.0001

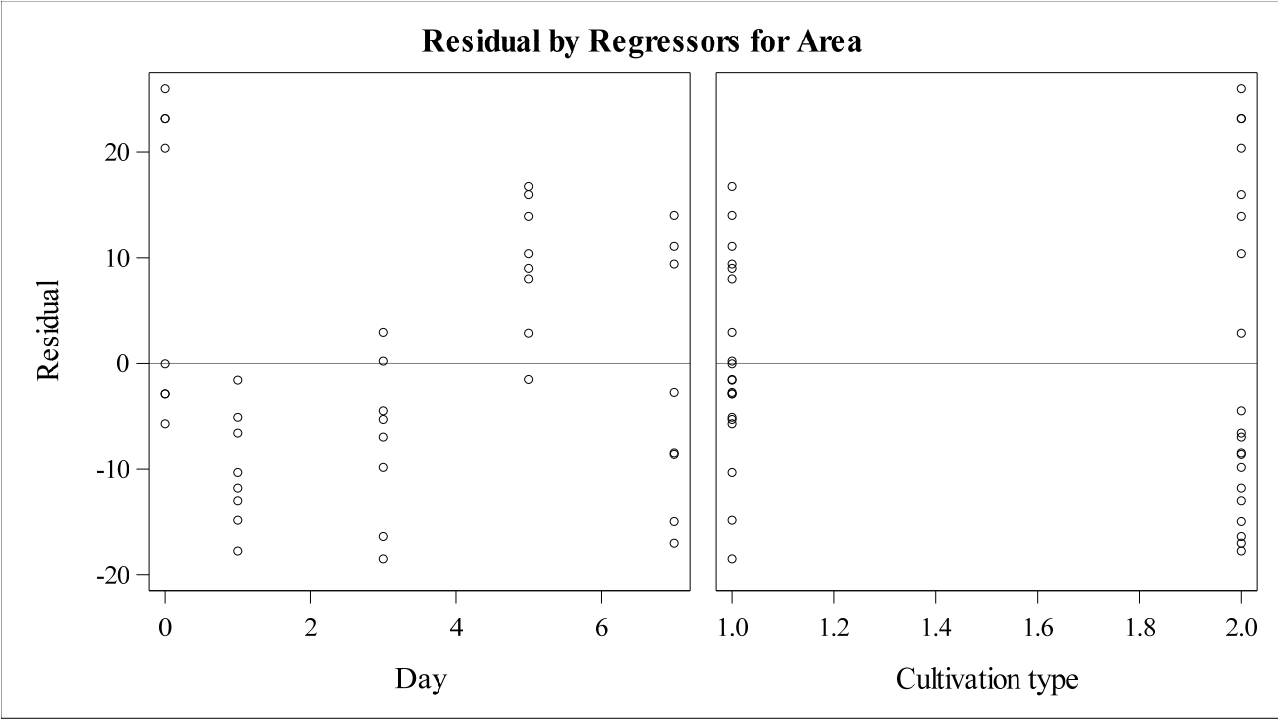
Model: MODEL1

Dependent Variable: Area

Concentration=30

Fit Diagnostics for Area





Biomechanical evaluation
Test of collagen concentration

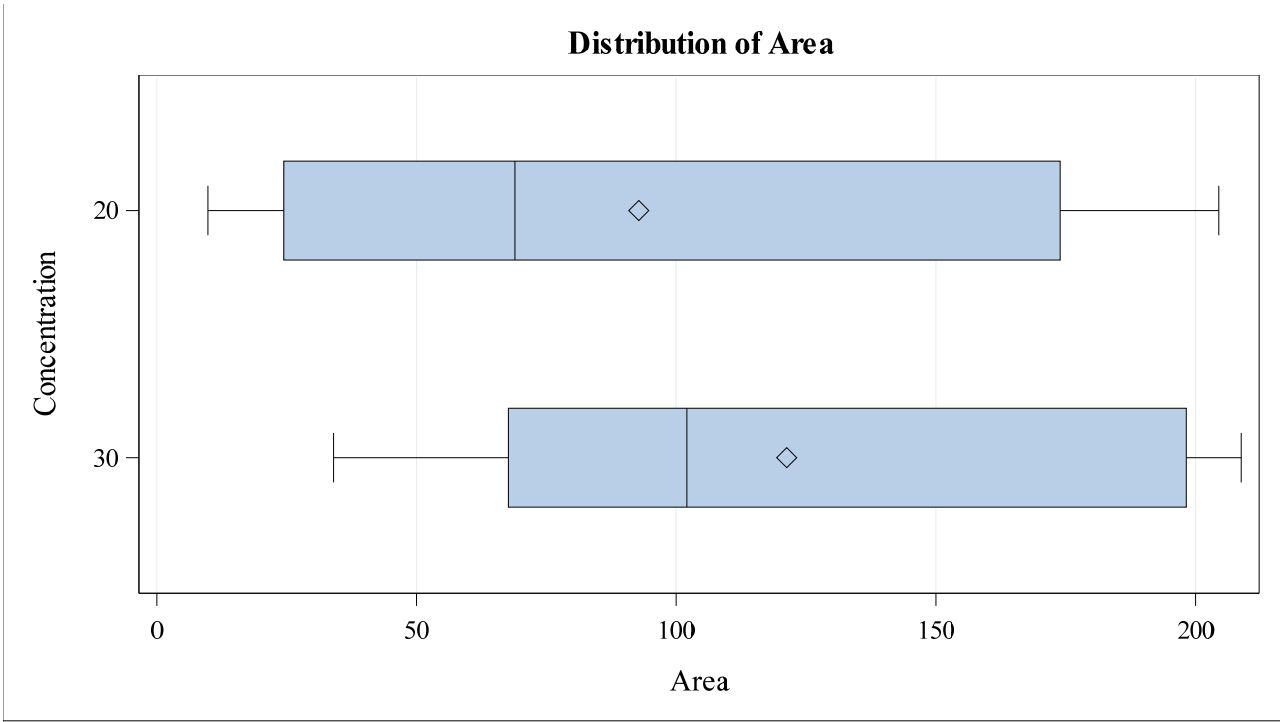
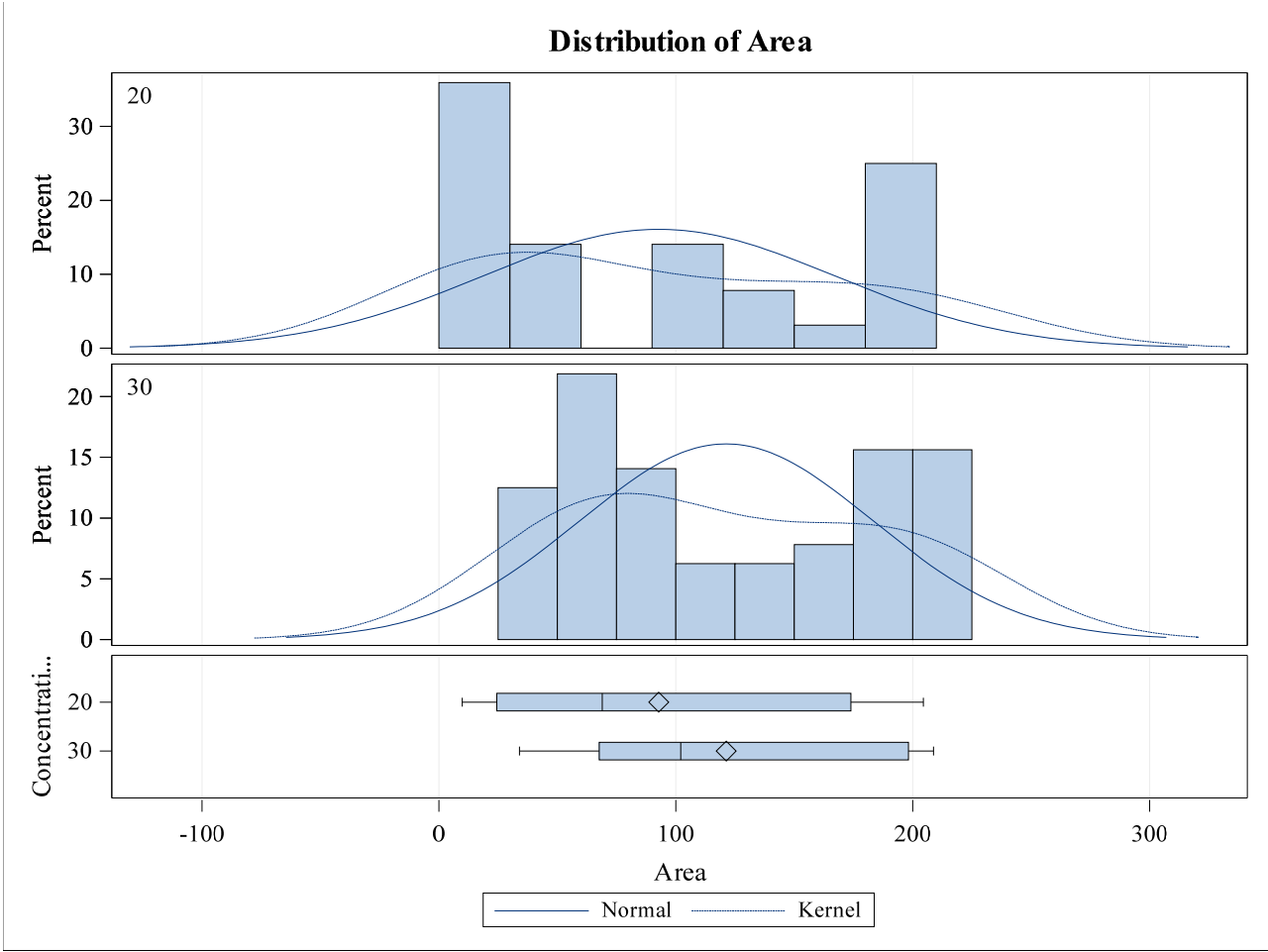
Variable:
Area

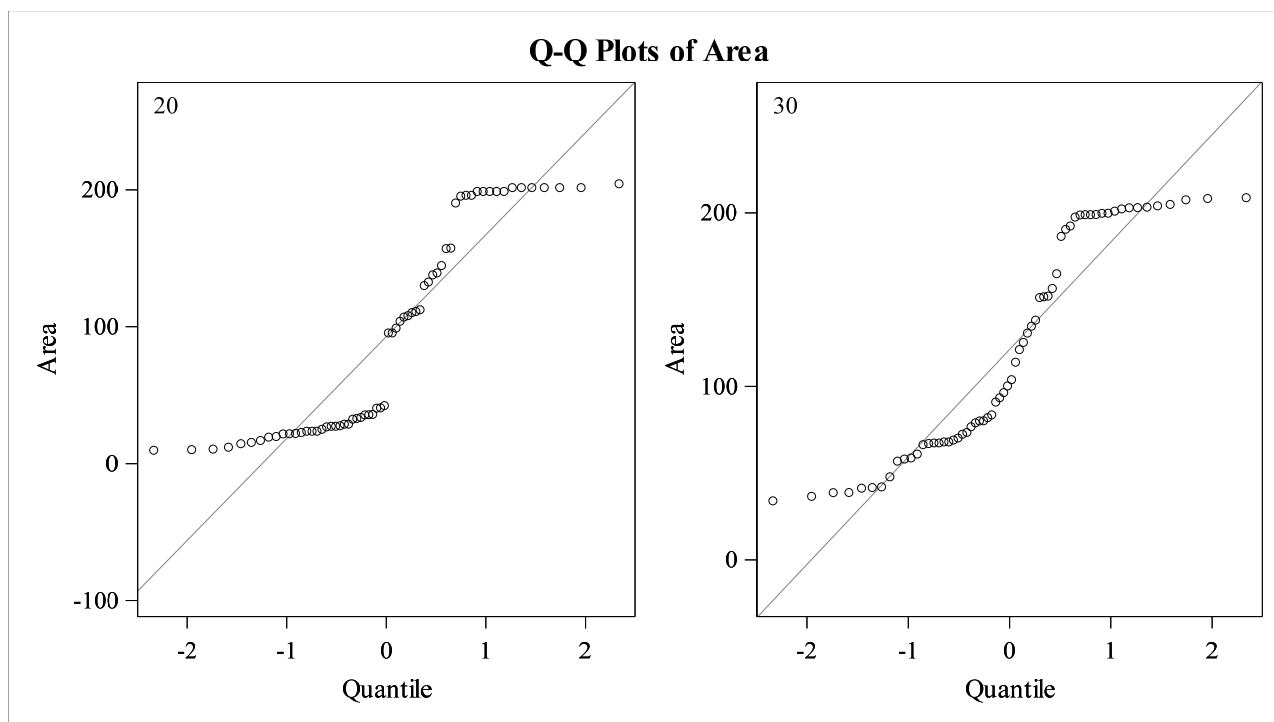
Concentration	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
20		64	92.8005	74.4459	9.3057	9.8200	204.5
30		64	121.3	61.9355	7.7419	34.0300	208.8
Diff (1-2)	Pooled		-28.4780	68.4770	12.1051		
Diff (1-2)	Satterthwaite		-28.4780		12.1051		

Concentration	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
20		92.8005	74.2044	111.4	74.4459	63.4128	90.1629
30		121.3	105.8	136.7	61.9355	52.7565	75.0114
Diff (1-2)	Pooled	-28.4780	-52.4337	-4.5223	68.4770	60.9653	78.1166
Diff (1-2)	Satterthwaite	-28.4780	-52.4414	-4.5146			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	126	-2.35	0.0202
Satterthwaite	Unequal	121.96	-2.35	0.0202

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	63	63	1.44	0.1469





Biomechanical evaluation
Test of print height

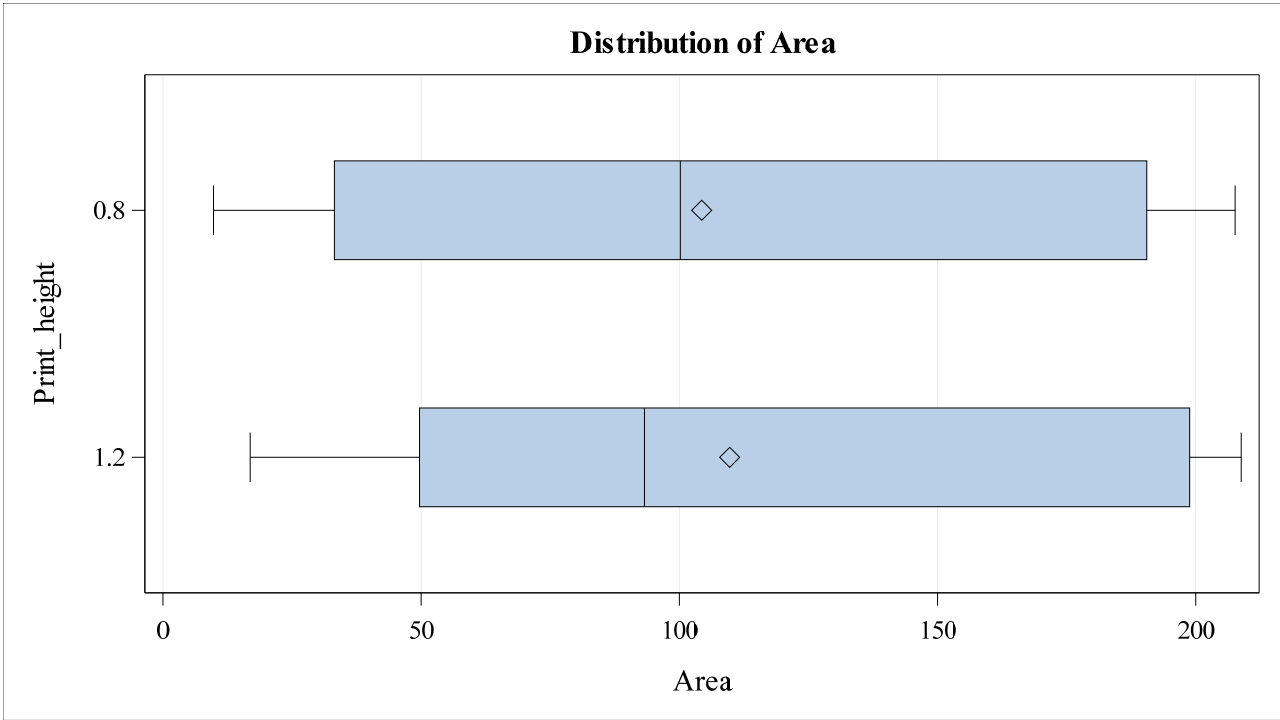
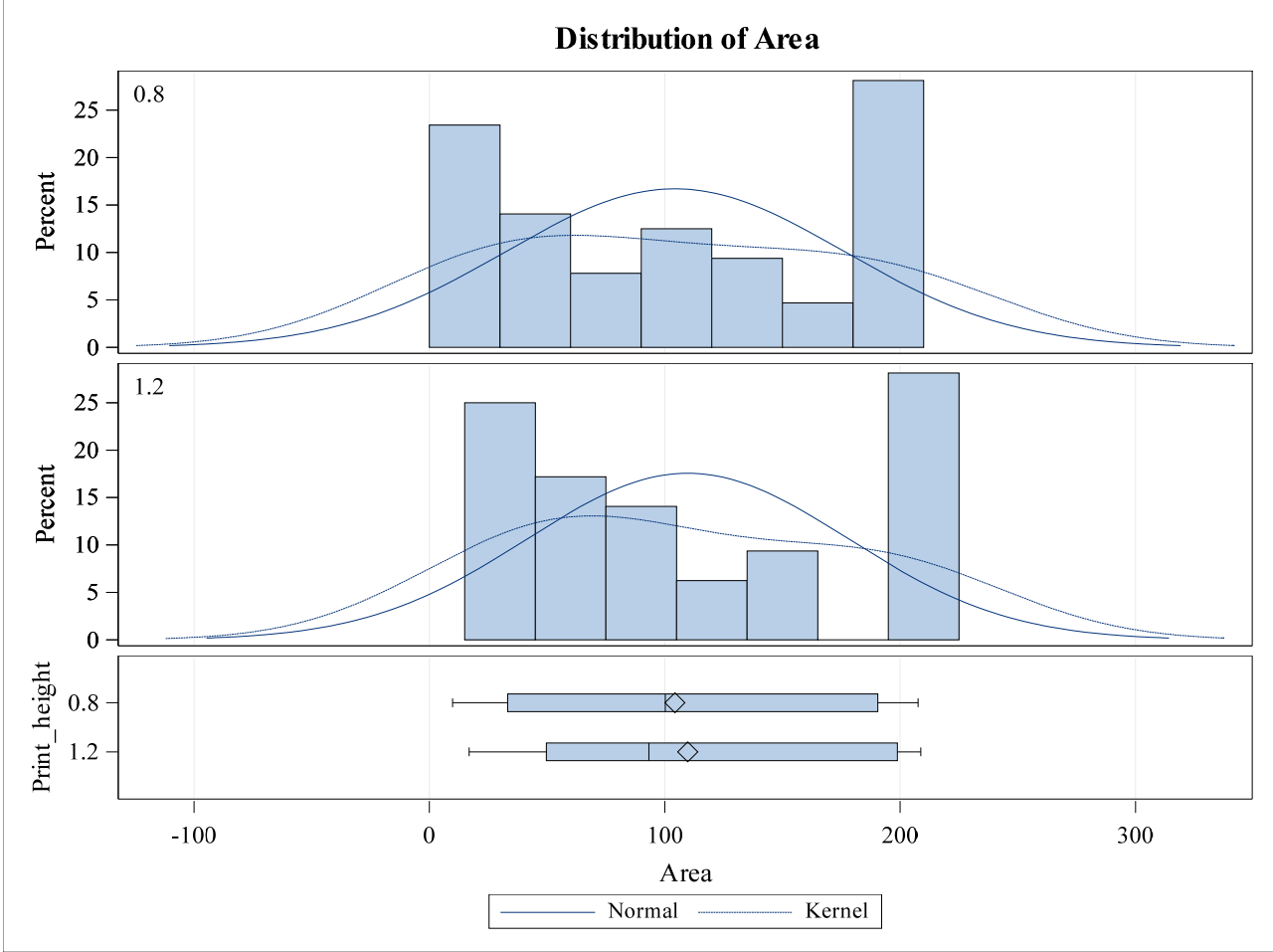
Variable:
Area

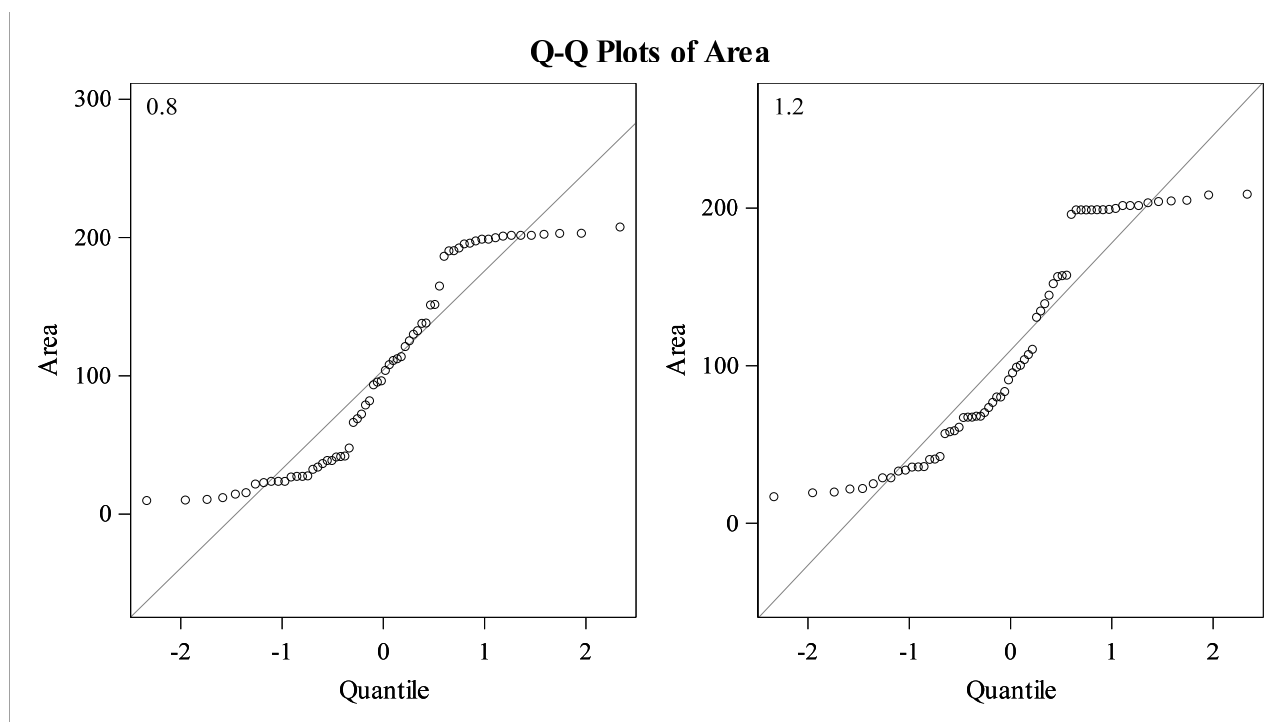
Print_height	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0.8		64	104.3	71.6215	8.9527	9.8200	207.6
1.2		64	109.8	68.1581	8.5198	16.9100	208.8
Diff (1-2)	Pooled		-5.4277	69.9113	12.3587		
Diff (1-2)	Satterthwaite		-5.4277		12.3587		

Print_height	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0.8		104.3	86.4351	122.2	71.6215	61.0071	86.7423
1.2		109.8	92.7279	126.8	68.1581	58.0569	82.5476
Diff (1-2)	Pooled	-5.4277	-29.8851	19.0298	69.9113	62.2422	79.7527
Diff (1-2)	Satterthwaite	-5.4277	-29.8857	19.0304			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	126	-0.44	0.6613
Satterthwaite	Unequal	125.69	-0.44	0.6613

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	63	63	1.10	0.6952





Biomechanical evaluation
Test of print height by collagen concentration

Variable:
Area

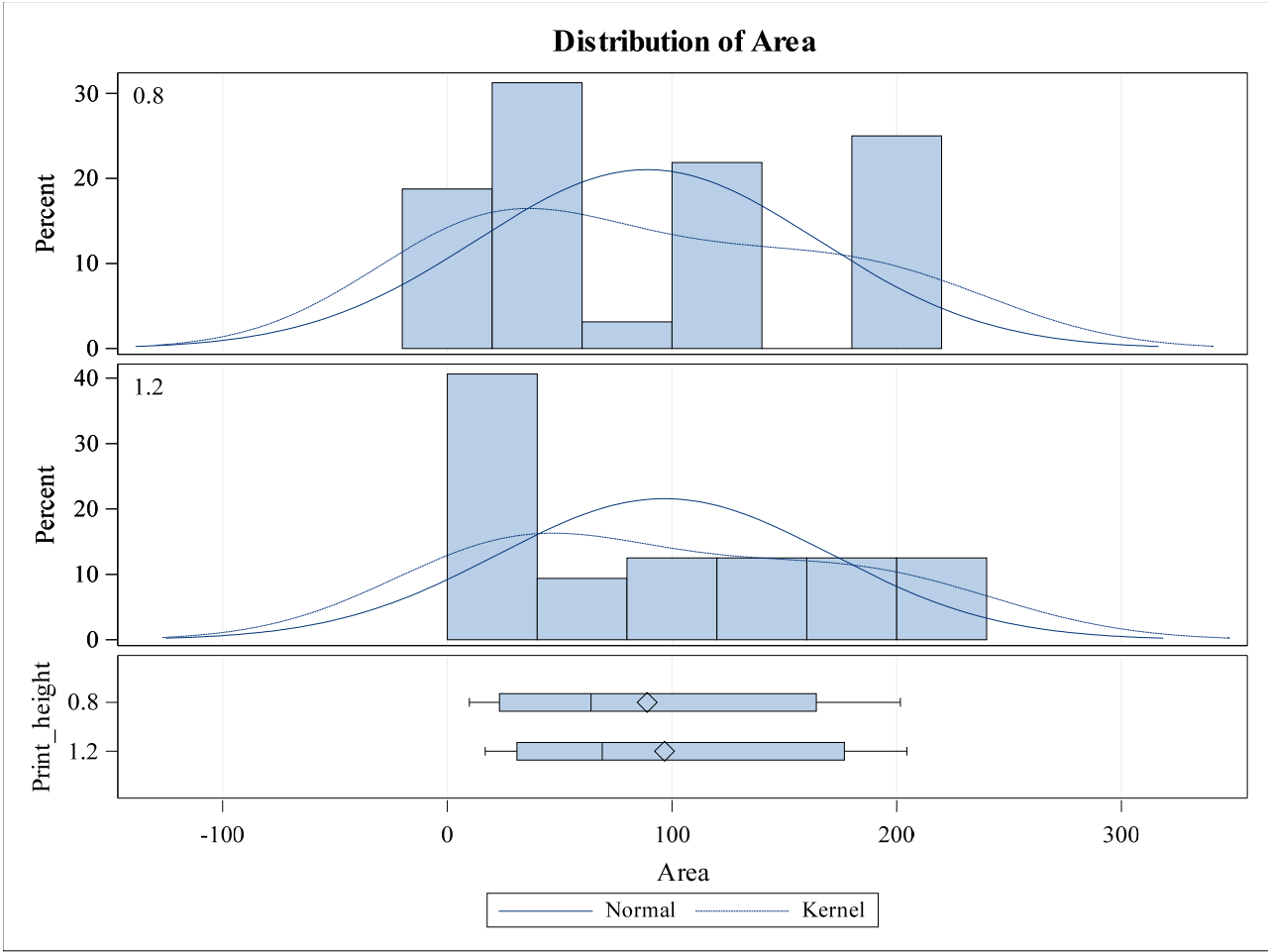
Concentration=20

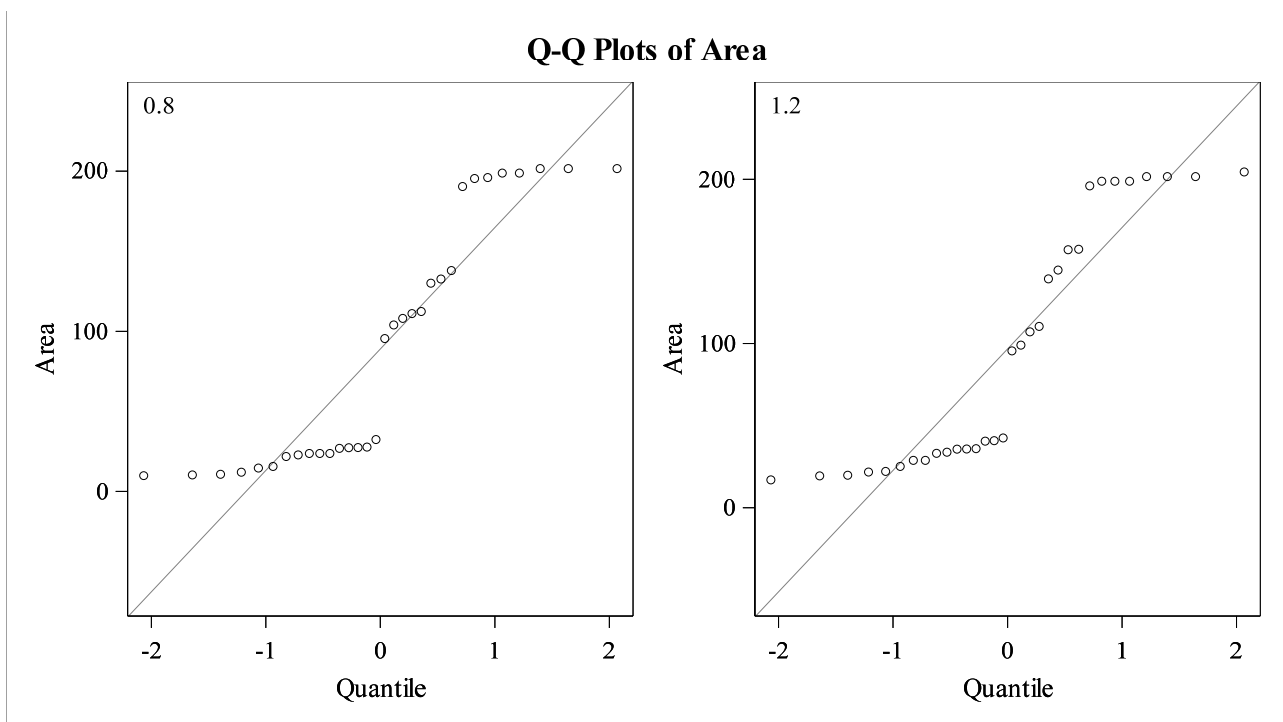
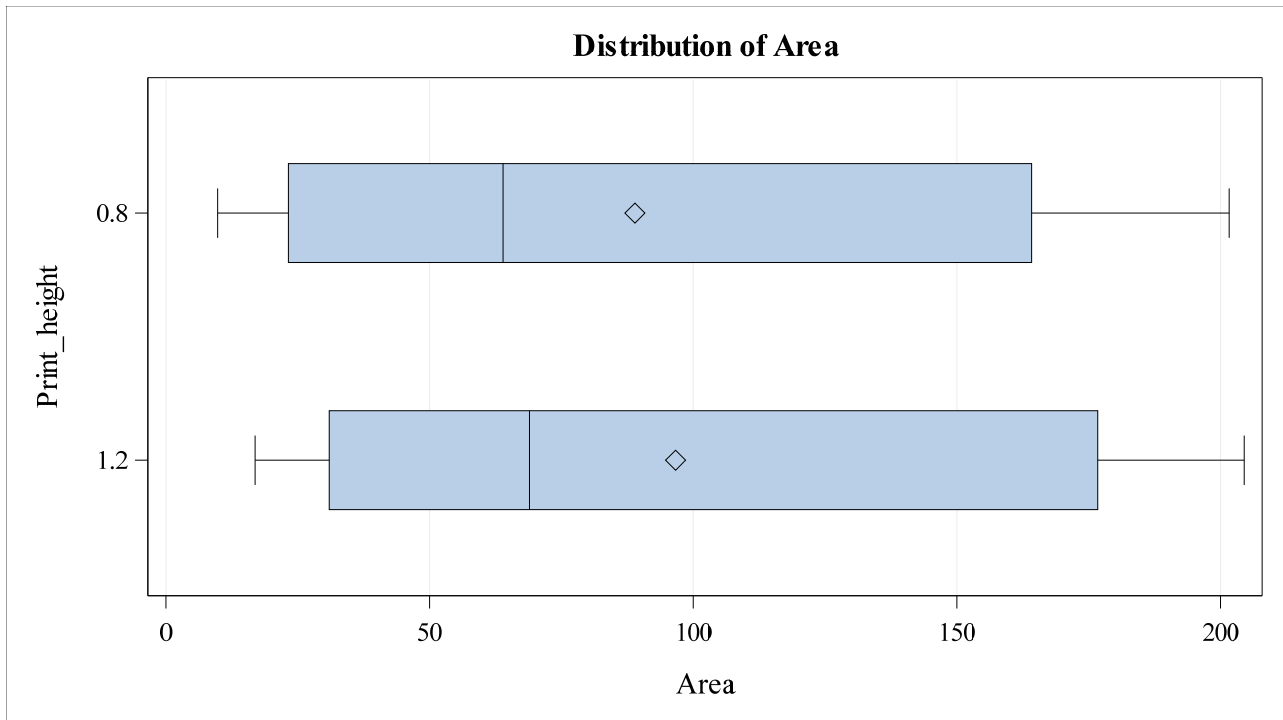
Print_height	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0.8		32	88.9450	75.8813	13.4141	9.8200	201.6
1.2		32	96.6559	73.9898	13.0797	16.9100	204.5
Diff (1-2)	Pooled		-7.7109	74.9415	18.7354		
Diff (1-2)	Satterthwaite		-7.7109		18.7354		

Print_height	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0.8		88.9450	61.5869	116.3	75.8813	60.8343	100.9
1.2		96.6559	69.9798	123.3	73.9898	59.3178	98.3679
Diff (1-2)	Pooled	-7.7109	-45.1624	29.7406	74.9415	63.7595	90.9166
Diff (1-2)	Satterthwaite	-7.7109	-45.1629	29.7410			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	62	-0.41	0.6821
Satterthwaite	Unequal	61.961	-0.41	0.6821

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	31	31	1.05	0.8891





Variable:
Area

Concentration=30

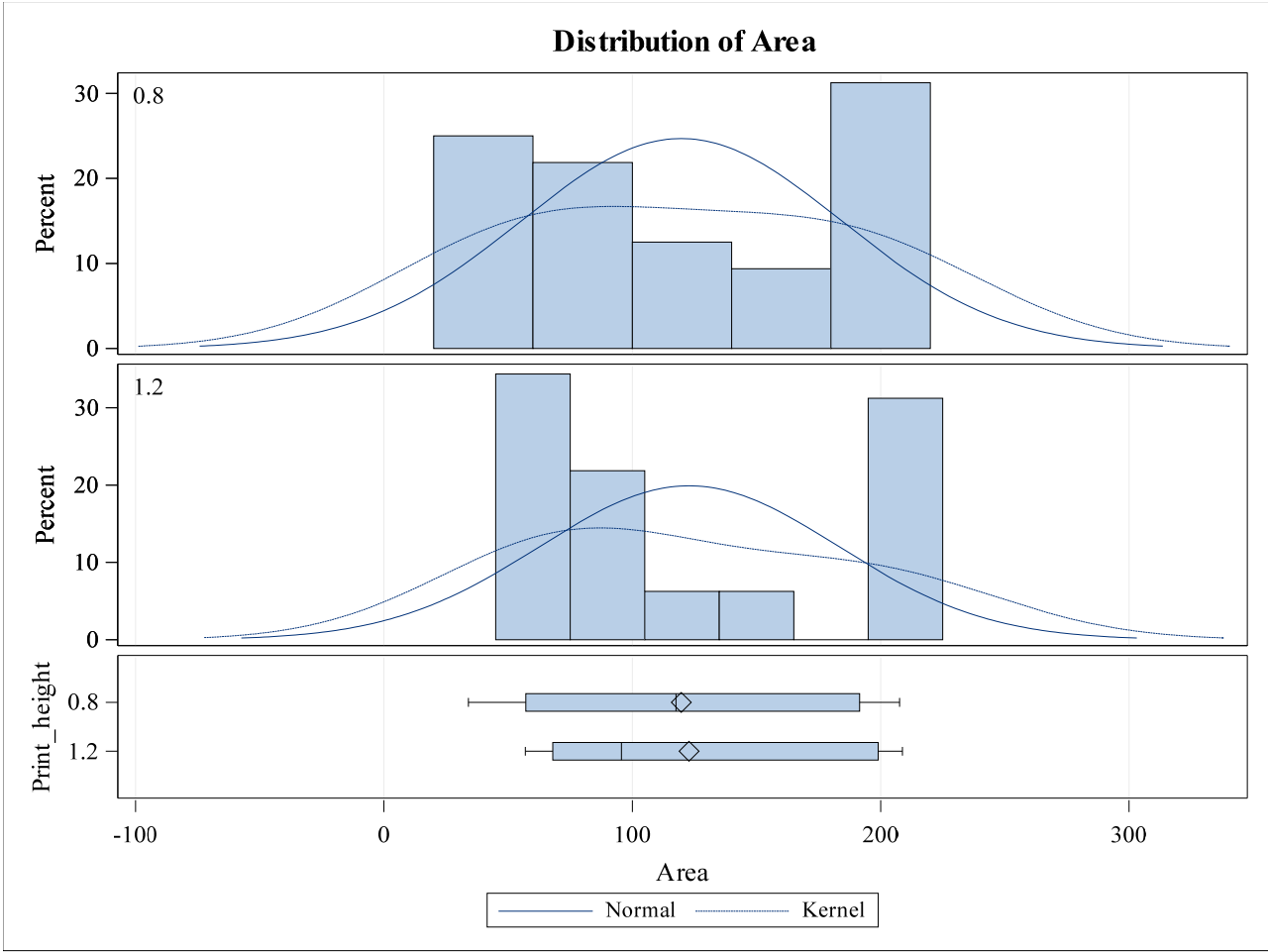
Print_height	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0.8		32	119.7	64.6405	11.4269	34.0300	207.6
1.2		32	122.9	60.1021	10.6247	56.9400	208.8
Diff (1-2)	Pooled		-3.1444	62.4126	15.6031		

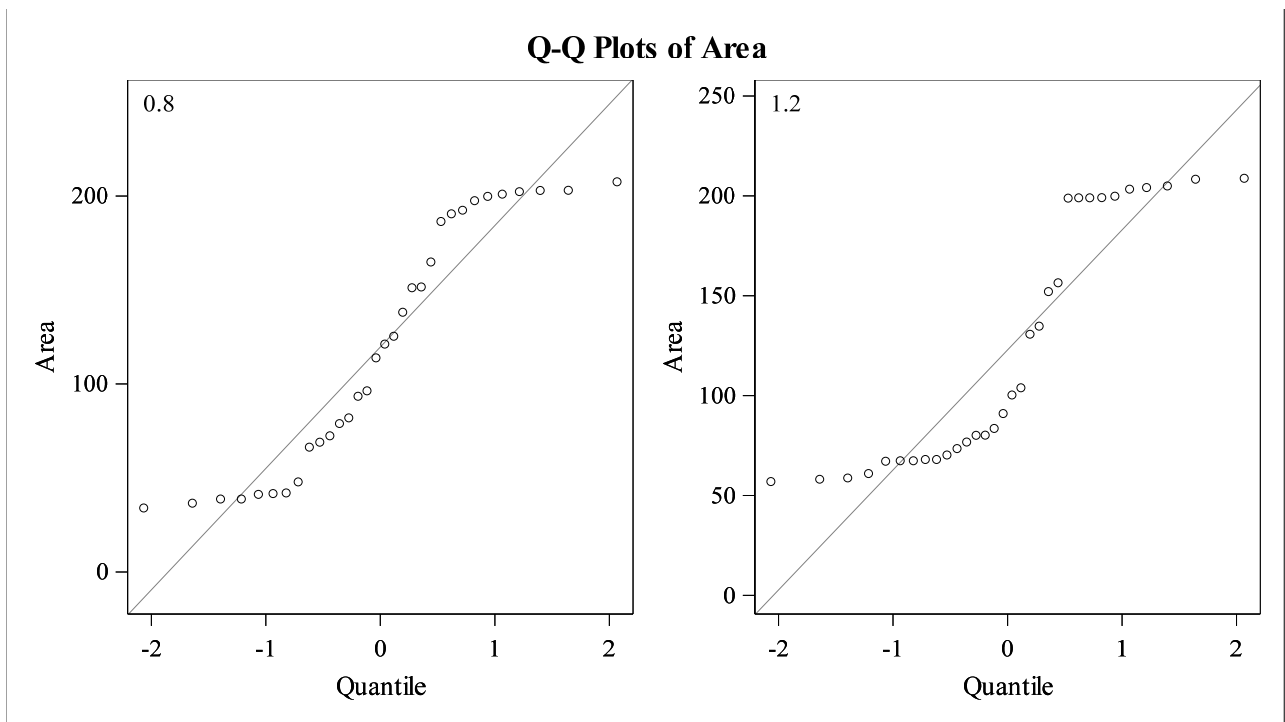
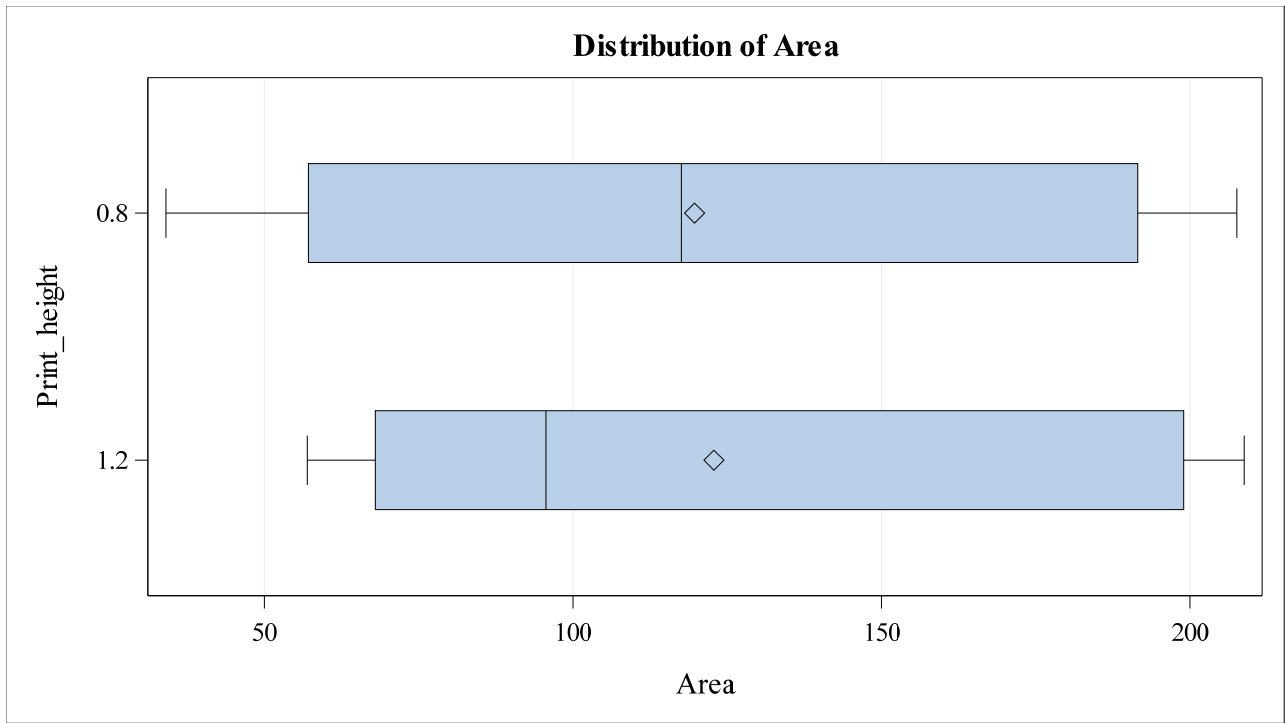
Print_height	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
Diff (1-2)	Satterthwaite		-3.1444		15.6031		

Print_height	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0.8		119.7	96.4009	143.0	64.6405	51.8225	85.9382
1.2		122.9	101.2	144.5	60.1021	48.1841	79.9046
Diff (1-2)	Pooled	-3.1444	-34.3346	28.0459	62.4126	53.1000	75.7169
Diff (1-2)	Satterthwaite	-3.1444	-34.3379	28.0491			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	62	-0.20	0.8410
Satterthwaite	Unequal	61.674	-0.20	0.8410

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	31	31	1.16	0.6878





Biomechanical evaluation
Test of day by collagen concentration

Concentration=20

Class Level Information		
Class	Levels	Values
Day	5	0 1 3 5 7

Number of Observations Read	40
Number of Observations Used	40

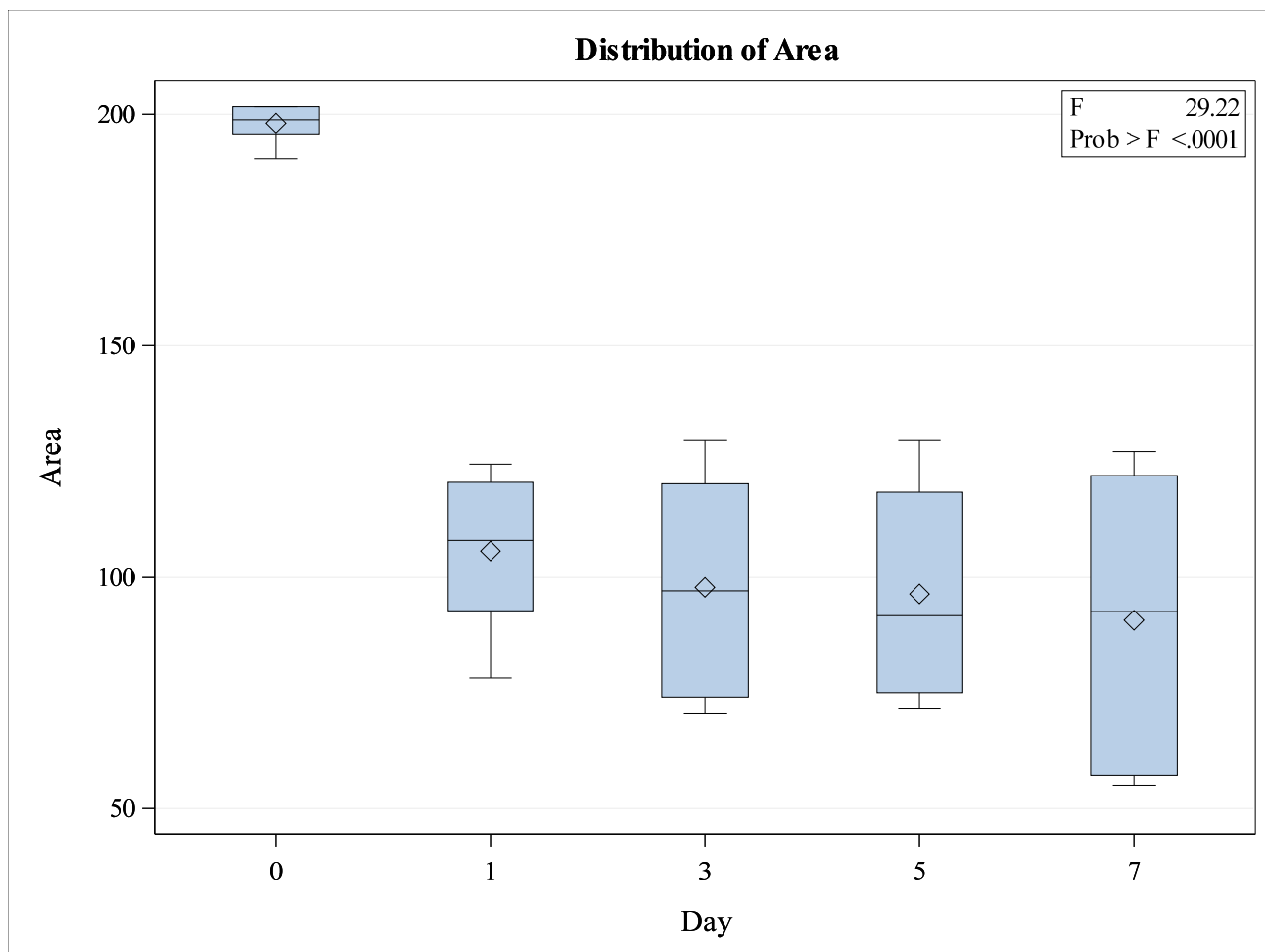
Dependent Variable: Area

Concentration=20

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	65492.61153	16373.15288	29.22	<.0001
Error	35	19614.80616	560.42303		
Corrected Total	39	85107.41770			

R-Square	Coeff Var	Root MSE	Area Mean
0.769529	20.11497	23.67326	117.6898

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Day	4	65492.61153	16373.15288	29.22	<.0001



Concentration=30

Class Level Information		
Class	Levels	Values
Day	5	0 1 3 5 7

Number of Observations Read	40
Number of Observations Used	40

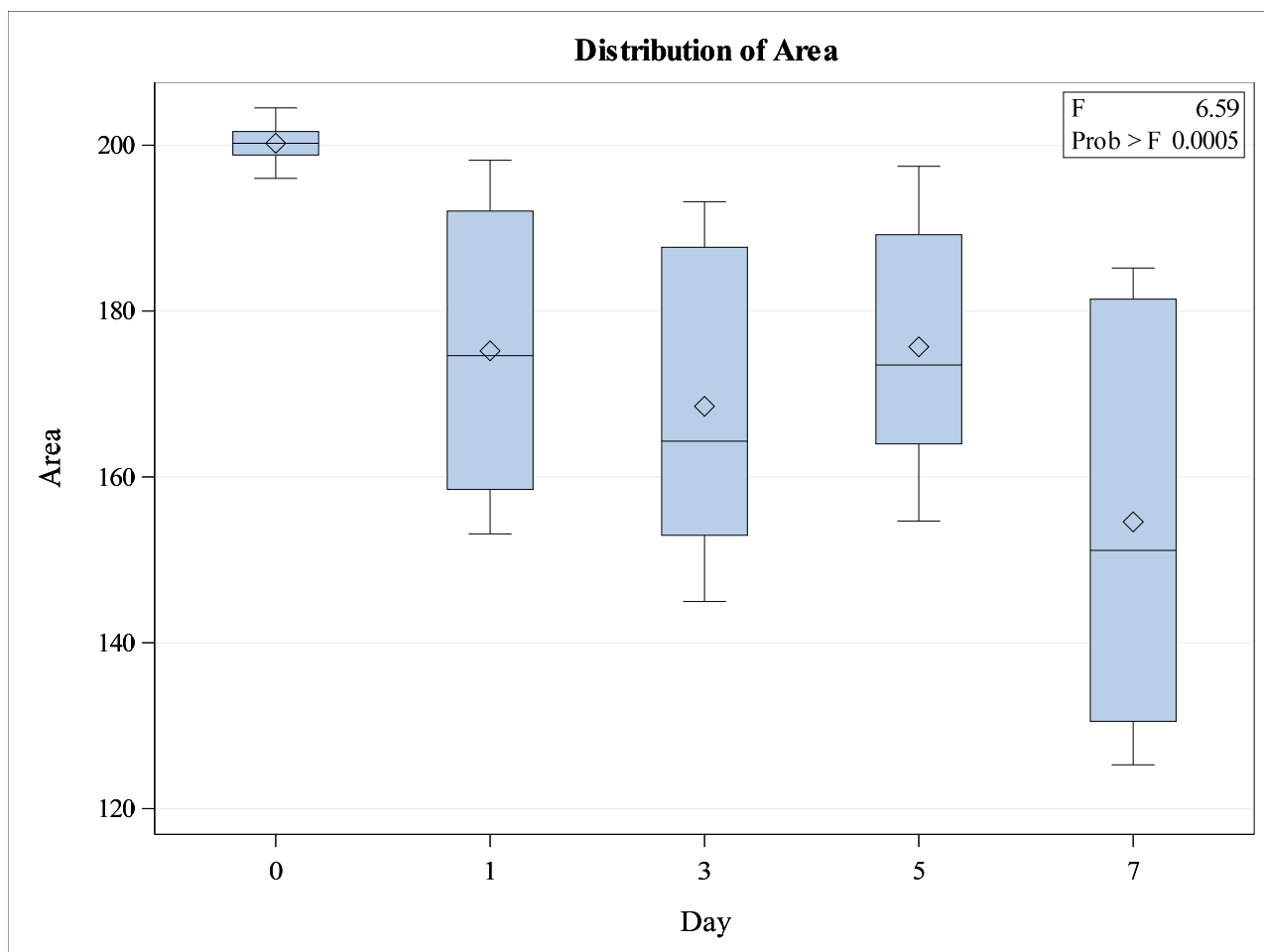
Dependent Variable: Area

Concentration=30

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	8771.99462	2192.99866	6.59	0.0005
Error	35	11642.17938	332.63370		
Corrected Total	39	20414.17400			

R-Square	Coeff Var	Root MSE	Area Mean
0.429701	10.43169	18.23825	174.8350

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Day	4	8771.994625	2192.998656	6.59	0.0005



Biomechanical evaluation
Test of day by collagen concentration

Variable:
Area

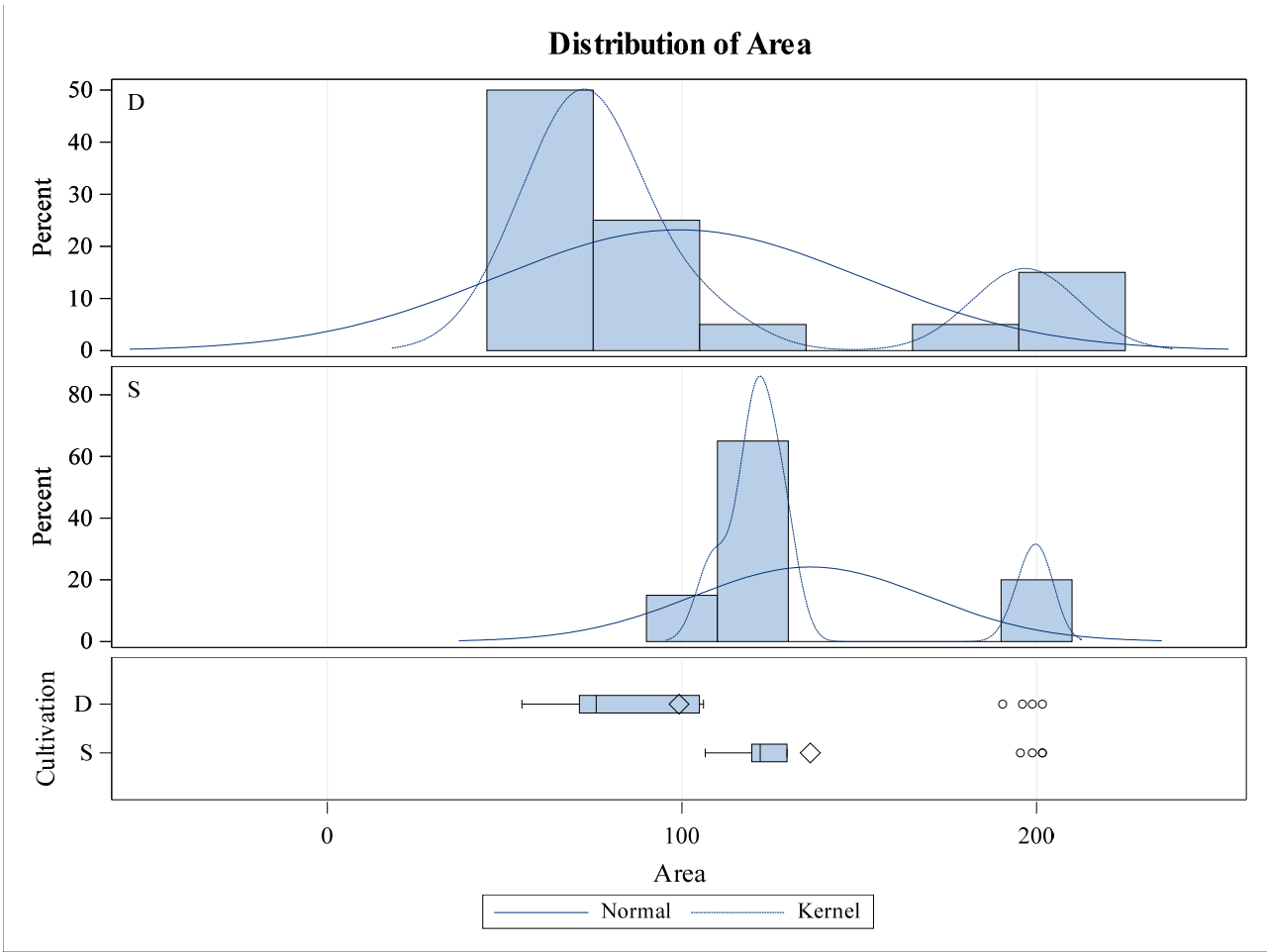
Concentration=20

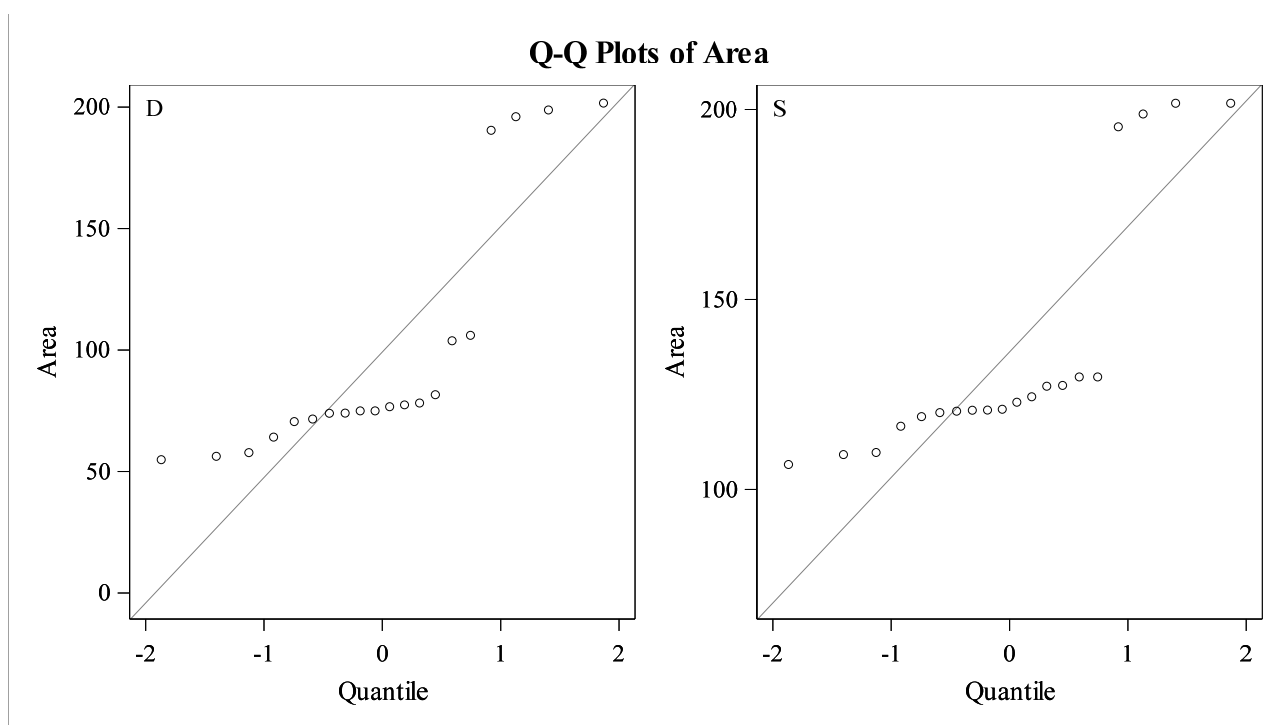
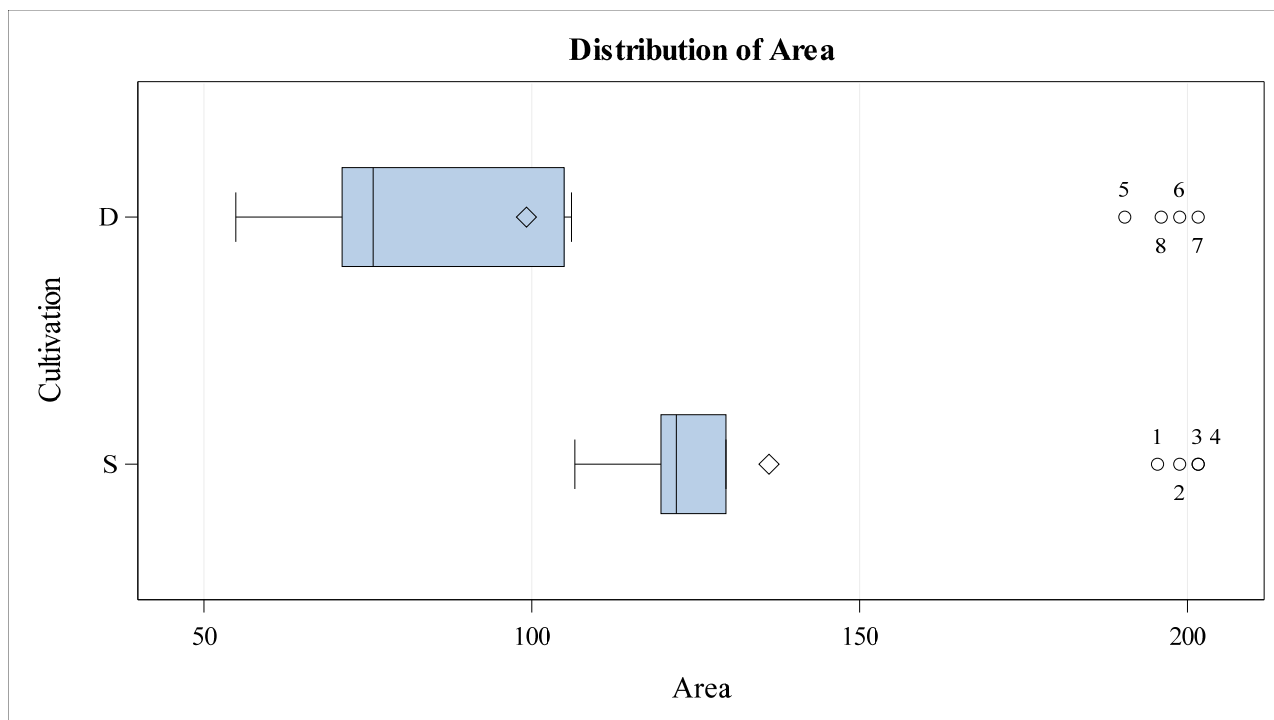
Cultivation	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
D		20	99.1900	51.6515	11.5496	54.8700	201.6
S		20	136.2	33.0296	7.3857	106.6	201.6
Diff (1-2)	Pooled		-36.9995	43.3522	13.7092		
Diff (1-2)	Satterthwaite		-36.9995		13.7092		

Cultivation	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
D		99.1900	75.0164	123.4	51.6515	39.2804	75.4407
S		136.2	120.7	151.6	33.0296	25.1187	48.2422
Diff (1-2)	Pooled	-36.9995	-64.7523	-9.2467	43.3522	35.4294	55.8714
Diff (1-2)	Satterthwaite	-36.9995	-64.9136	-9.0854			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	38	-2.70	0.0103
Satterthwaite	Unequal	32.313	-2.70	0.0110

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	19	19	2.45	0.0583





Variable:
Area

Concentration=30

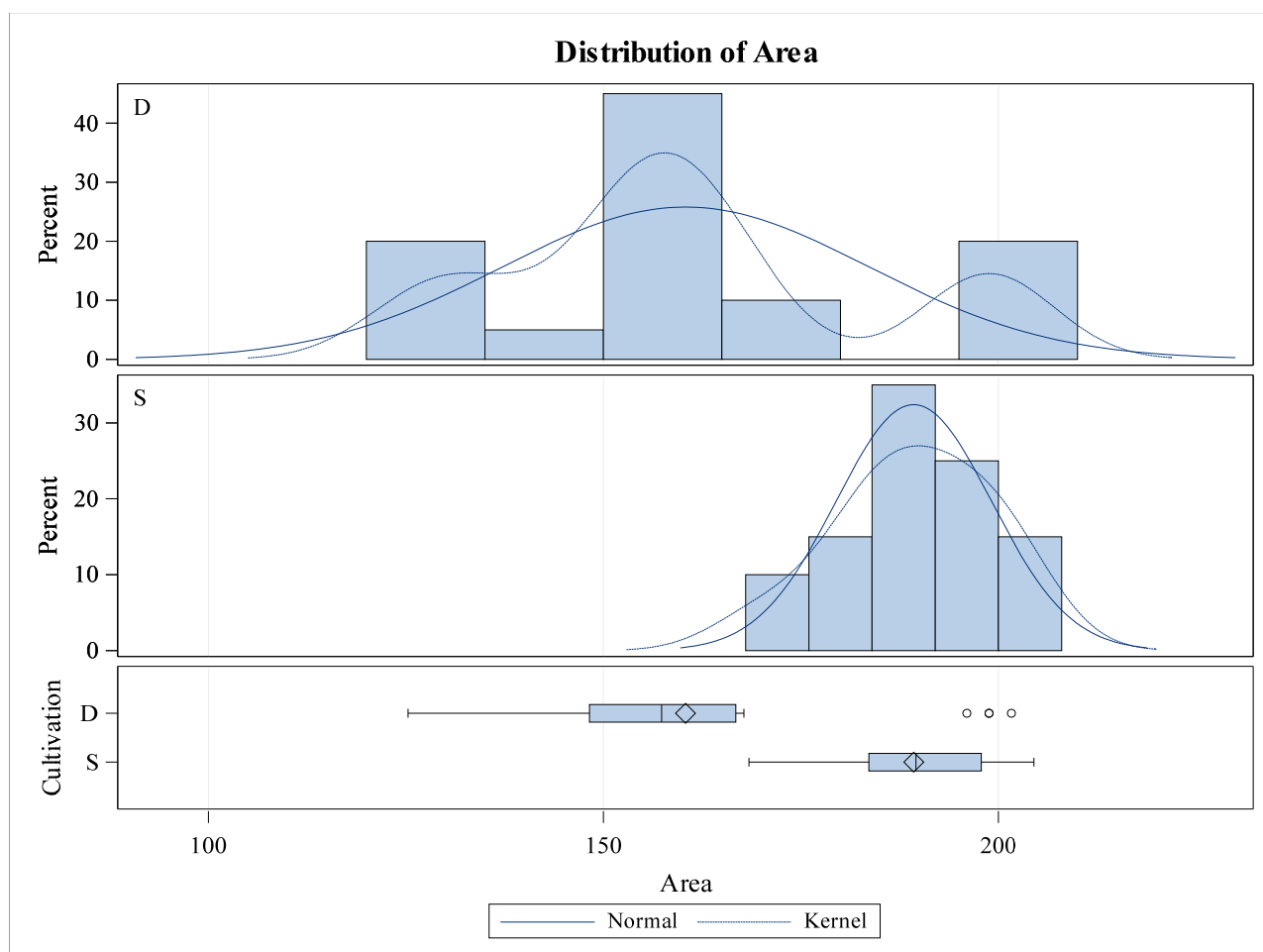
Cultivation	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
D		20	160.4	23.2004	5.1878	125.3	201.6
S		20	189.3	9.8511	2.2028	168.4	204.5
Diff (1-2)	Pooled		-28.8850	17.8228	5.6361		

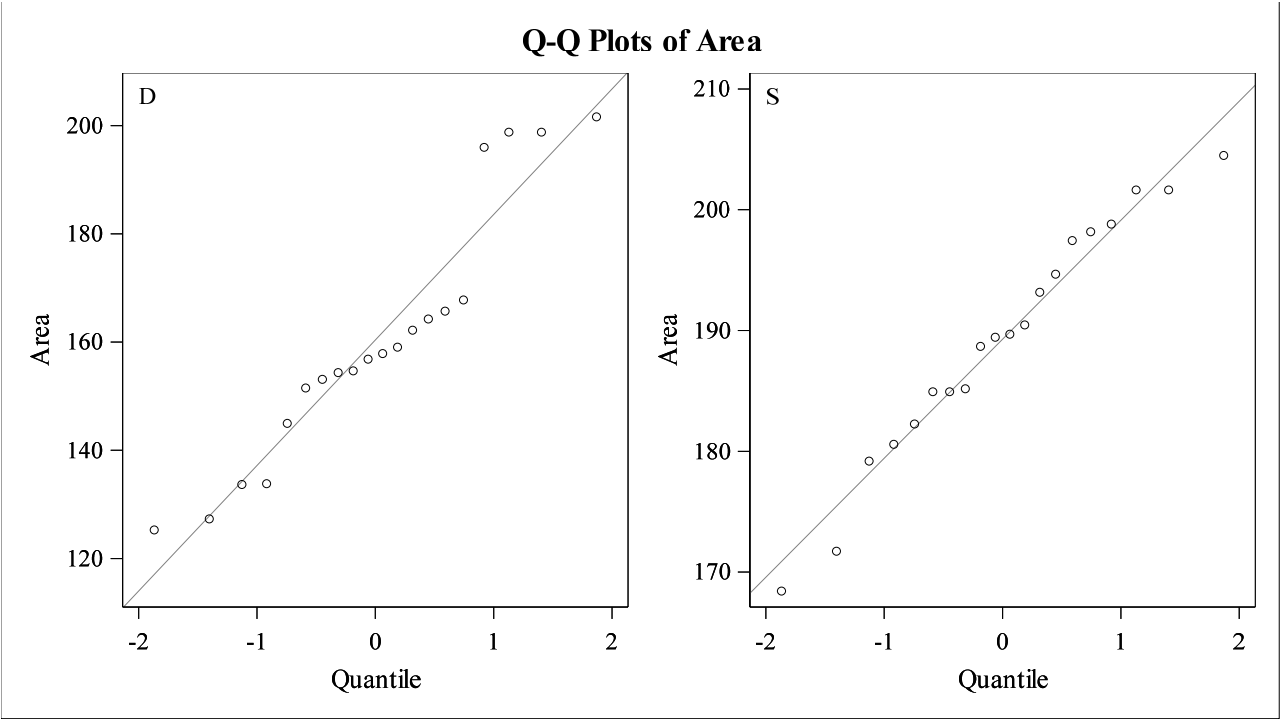
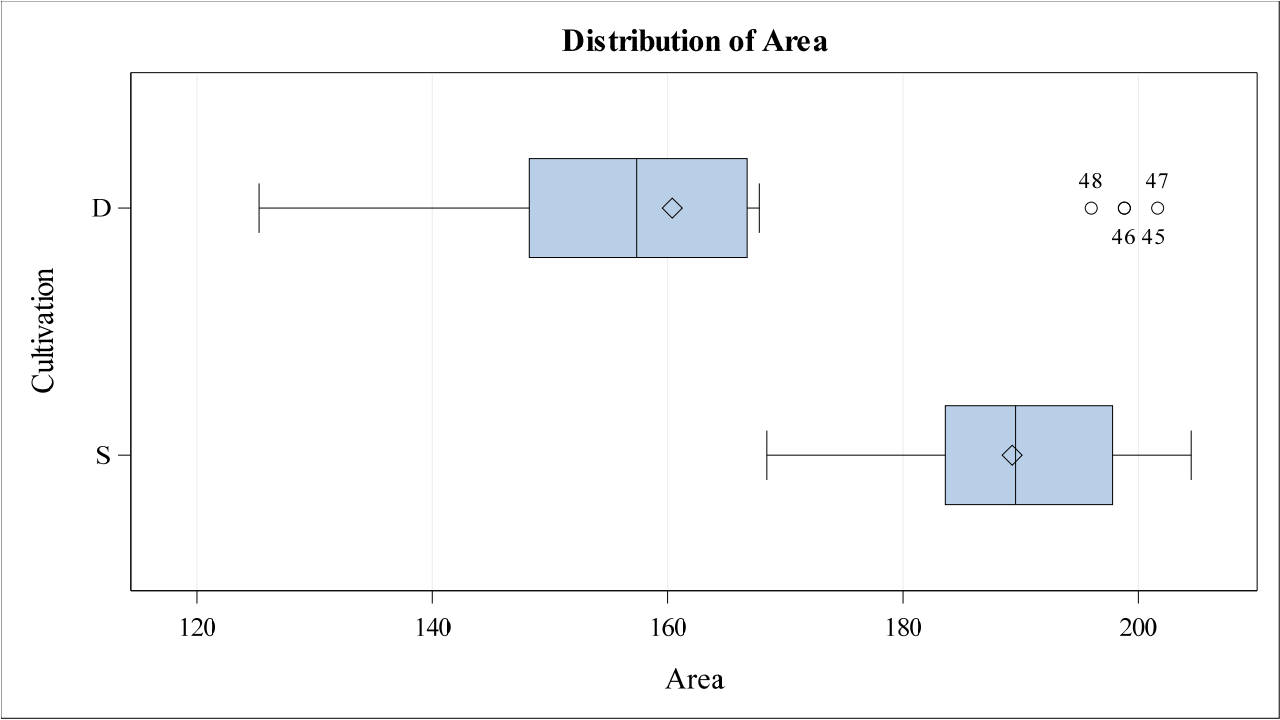
Cultivation	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
Diff (1-2)	Satterthwaite		-28.8850		5.6361		

Cultivation	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
D		160.4	149.5	171.3	23.2004	17.6437	33.8858
S		189.3	184.7	193.9	9.8511	7.4917	14.3882
Diff (1-2)	Pooled	-28.8850	-40.2946	-17.4754	17.8228	14.5656	22.9696
Diff (1-2)	Satterthwaite	-28.8850	-40.4781	-17.2919			

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	38	-5.13	<.0001
Satterthwaite	Unequal	25.635	-5.13	<.0001

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	19	19	5.55	0.0005





Biomechanical evaluation
Linear regression of area by collagen concentration

Model: MODEL1
Dependent Variable: Area

Concentration=20

Number of Observations Read	64
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Number of Observations Used	64
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Stepwise Selection: Step 1

Variable Day Entered: R-Square = 0.8147 and C(p) = 1.0390

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	284452	284452	272.56	<.0001
Error	62	64705	1043.63325		
Corrected Total	63	349158			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	170.91492	6.22045	787887	754.95	<.0001
Day	-34.71753	2.10290	284452	272.56	<.0001

Bounds on condition number: 1, 1

All variables left in the model are significant at the 0.1500 level.

No other variable met the 0.1500 significance level for entry into the model.

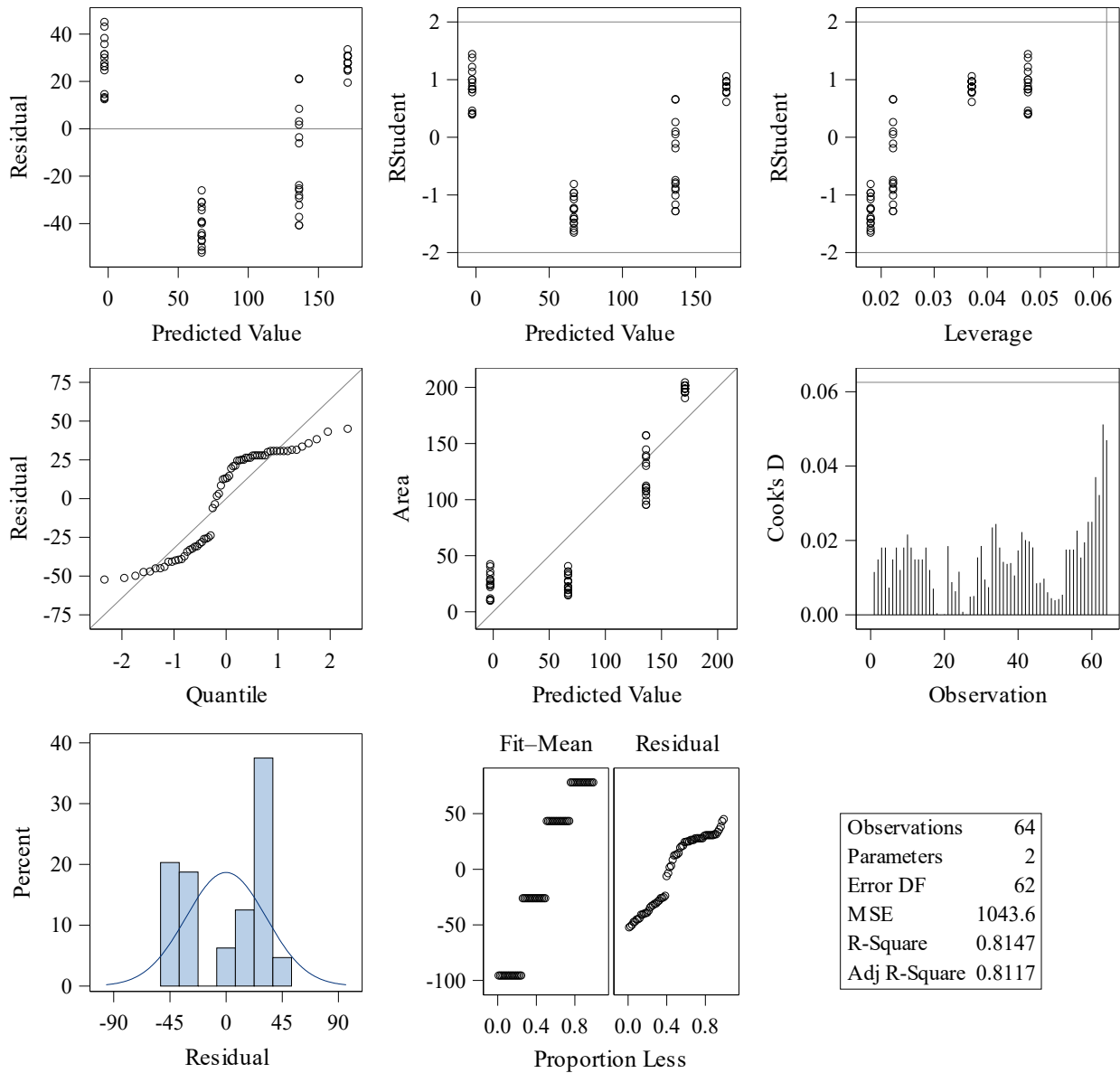
Summary of Stepwise Selection									
Step	Variable Entered	Variable Removed	Label	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	Day			1	0.8147	0.8147	1.0390	272.56	<.0001

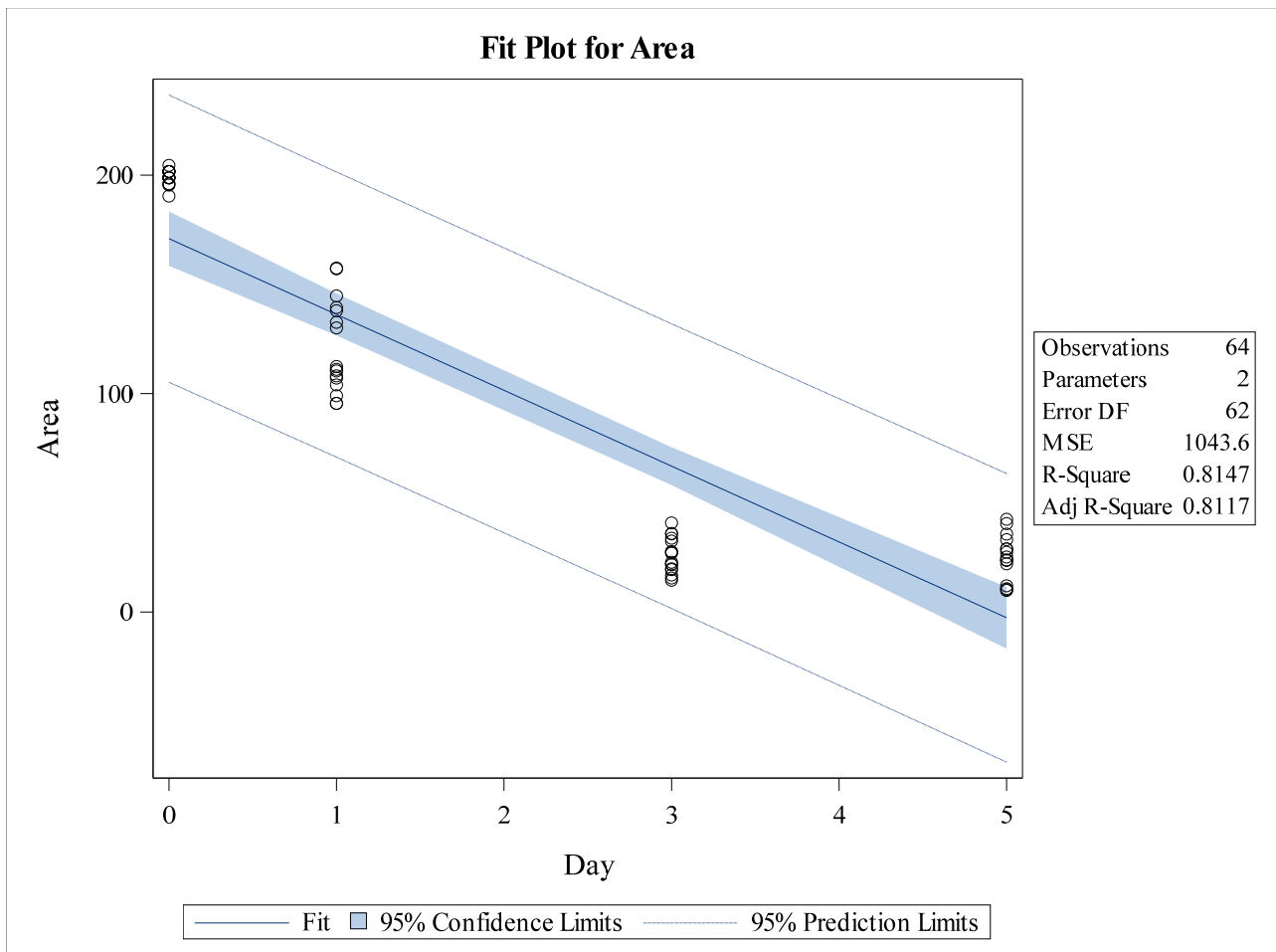
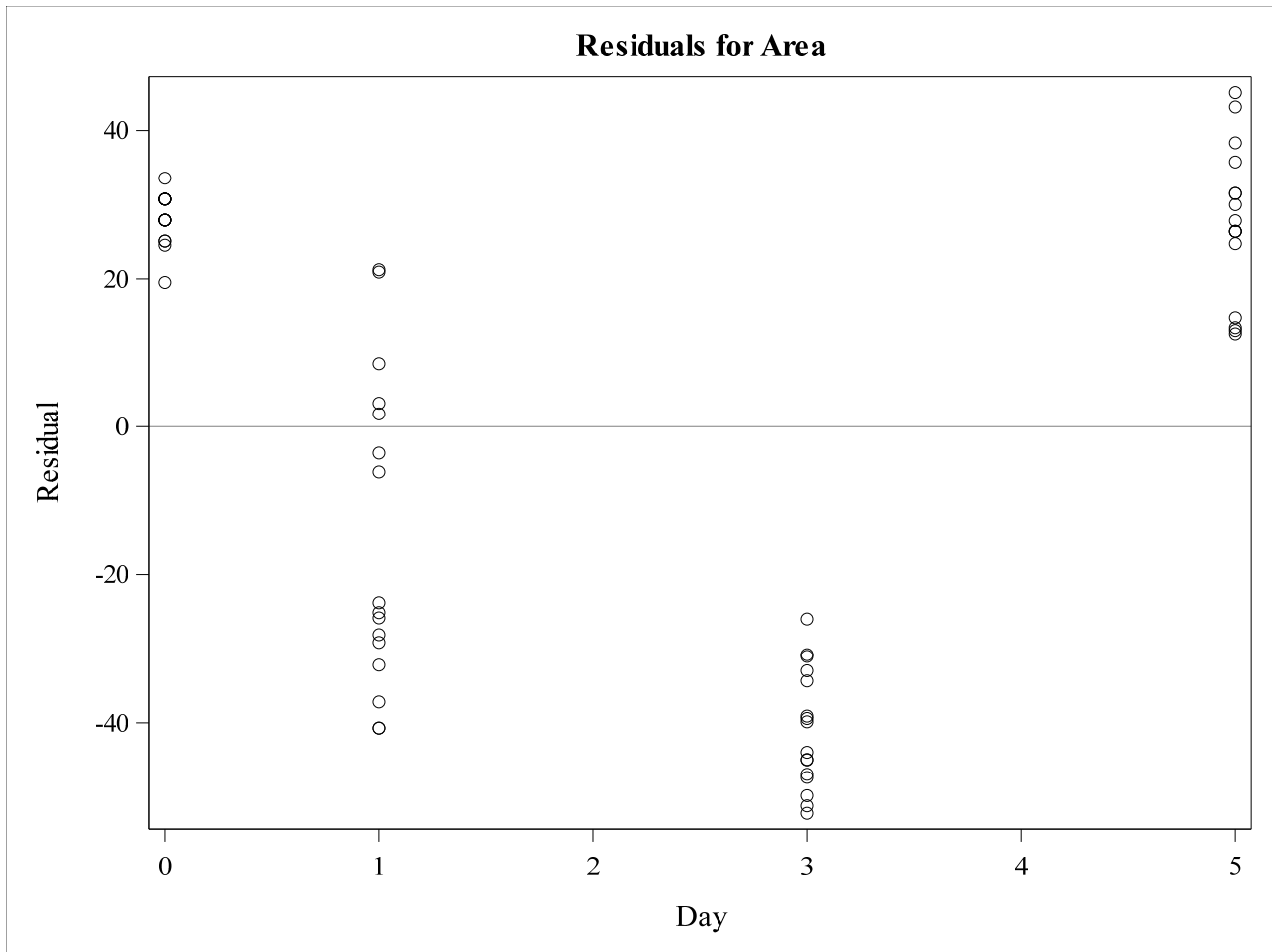
Model: MODEL1

Dependent Variable: Area

Concentration=20

Fit Diagnostics for Area





Model: MODEL1

Dependent Variable: Area

Concentration=30

Number of Observations Read	64
Number of Observations Used	64

Stepwise Selection: Step 1

Variable Day Entered: R-Square = 0.7269 and C(p) = 0.1631

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	175675	175675	165.04	<.0001
Error	62	65994	1064.41800		
Corrected Total	63	241669			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	182.66611	6.28209	899953	845.49	<.0001
Day	-27.28341	2.12373	175675	165.04	<.0001

Bounds on condition number: 1, 1

All variables left in the model are significant at the 0.1500 level.

No other variable met the 0.1500 significance level for entry into the model.

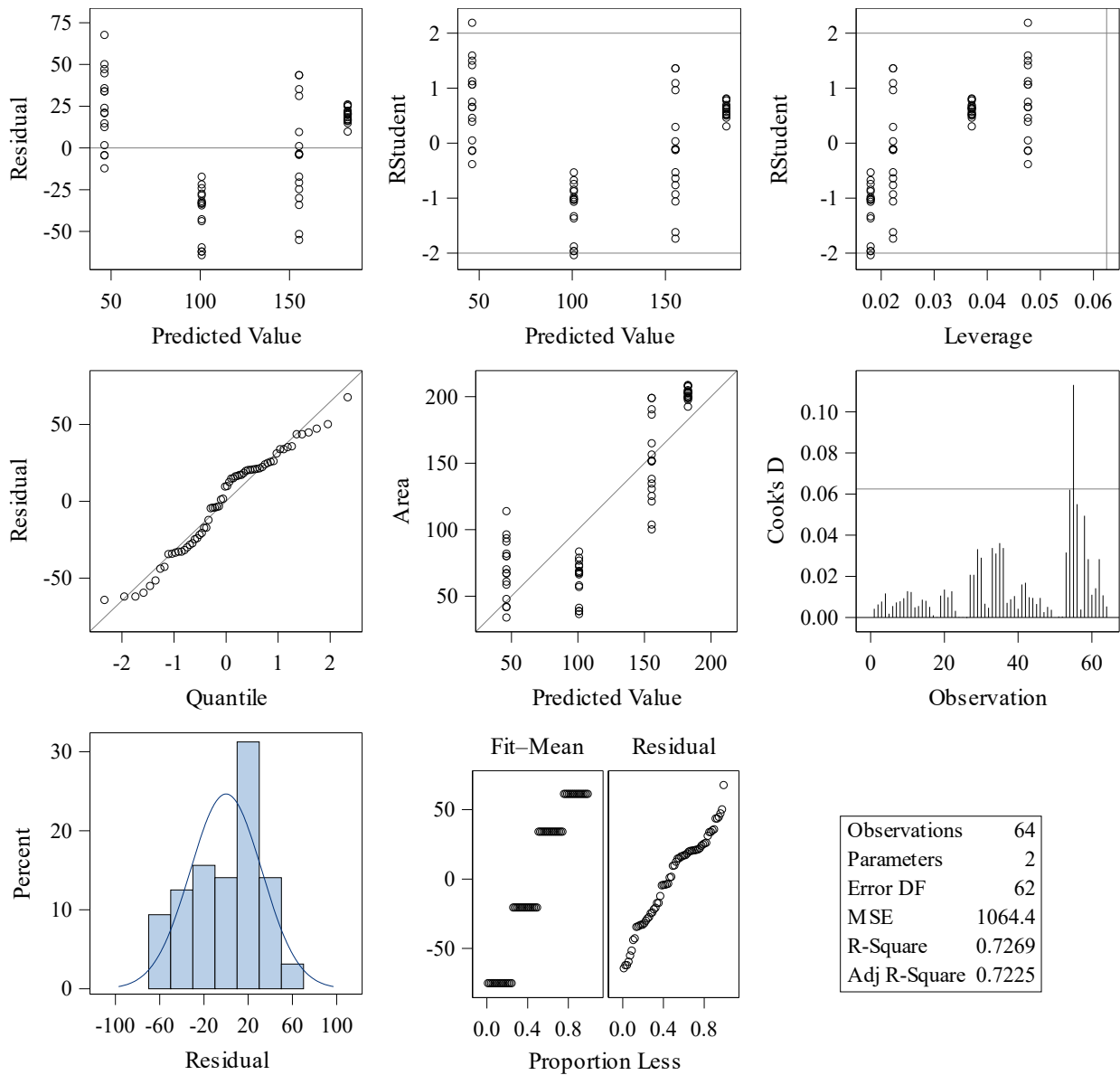
Summary of Stepwise Selection									
Step	Variable Entered	Variable Removed	Label	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	Day			1	0.7269	0.7269	0.1631	165.04	<.0001

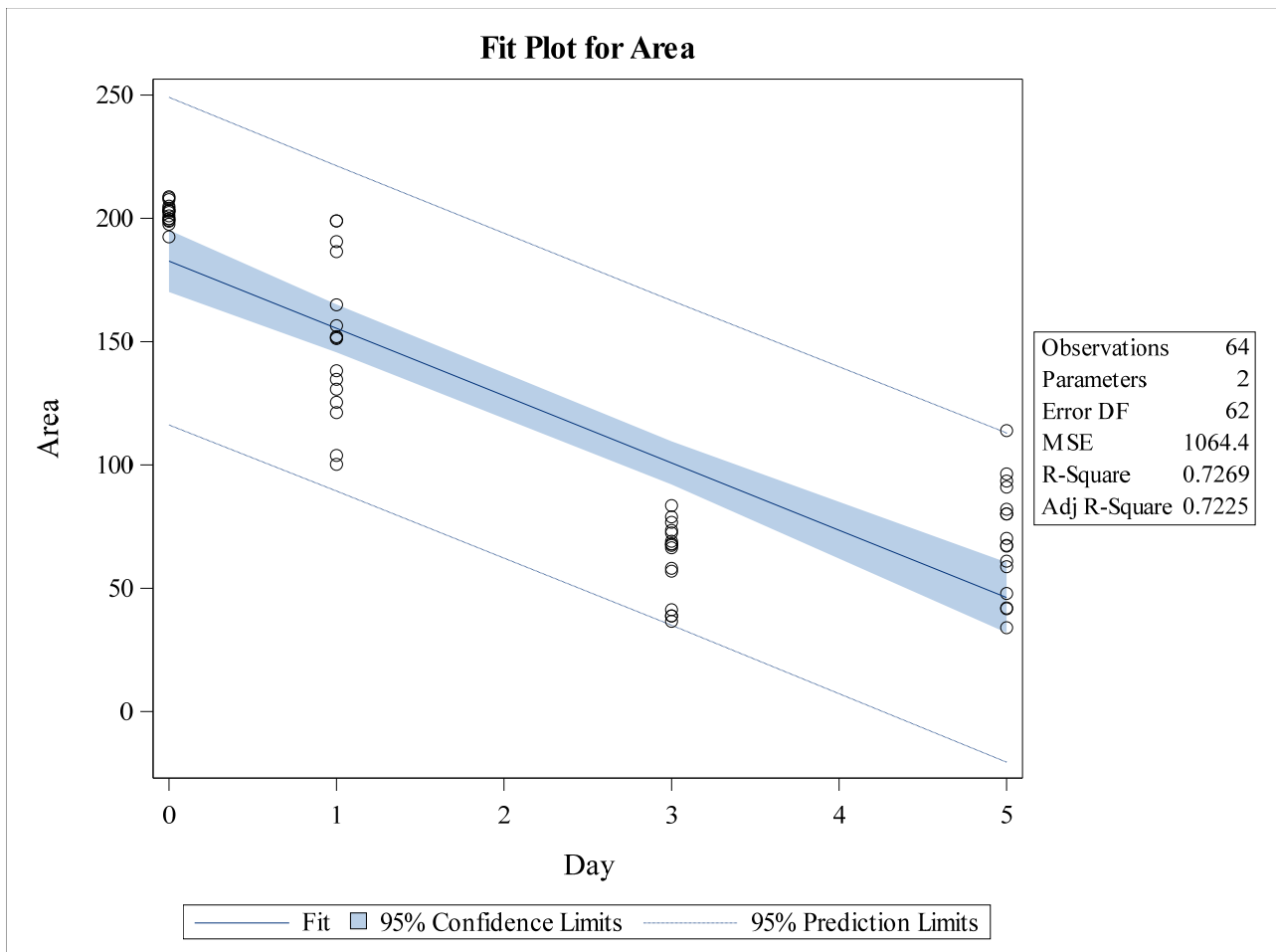
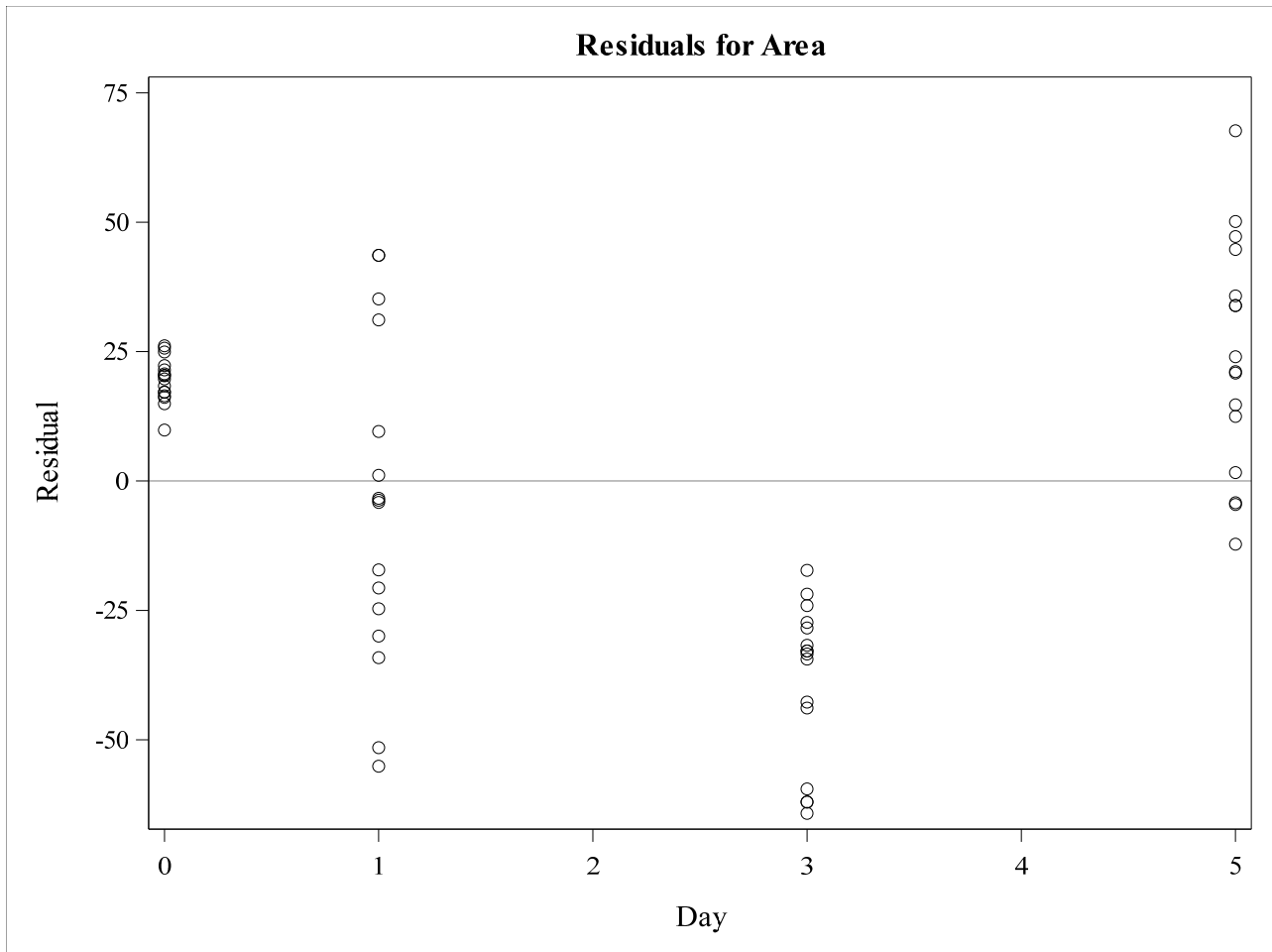
Model: MODEL1

Dependent Variable: Area

Concentration=30

Fit Diagnostics for Area





Additional evaluations
Proliferation medium
Linear Regression of Area by Day, Concentration a Cultivation

Model: MODEL1
Dependent Variable: Area Area

Number of Observations Read	80
Number of Observations Used	80

Stepwise Selection: Step 1

Variable Concentration Entered: R-Square = 0.3713 and C(p) = 89.0535

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	64198	64198	46.07	<.0001
Error	78	108698	1393.55855		
Corrected Total	79	172896			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	4.86700	21.28160	72.88520	0.05	0.8197
Concentration	5.66560	0.83473	64198	46.07	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable Day Entered: R-Square = 0.5849 and C(p) = 34.9901

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	101119	50560	54.24	<.0001
Error	77	71776	932.16142		
Corrected Total	79	172896			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	31.70750	17.92041	2918.22923	3.13	0.0808
Day	-8.38766	1.33275	36921	39.61	<.0001
Concentration	5.66560	0.68270	64198	68.87	<.0001

Bounds on condition number: 1, 4

Stepwise Selection: Step 3

Variable Cultivation__static_1_dynamic_2_ Entered: R-Square = 0.7105 and C(p) = 4.0000

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	122845	40948	62.18	<.0001
Error	76	50051	658.55942		
Corrected Total	79	172896			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	81.14600	17.34848	14408	21.88	<.0001
Day	-8.38766	1.12021	36921	56.06	<.0001
Concentration	5.66560	0.57383	64198	97.48	<.0001
Cultivation__static_1_dynamic_2_	-32.95900	5.73829	21726	32.99	<.0001

Bounds on condition number: 1, 9

All variables left in the model are significant at the 0.1500 level.

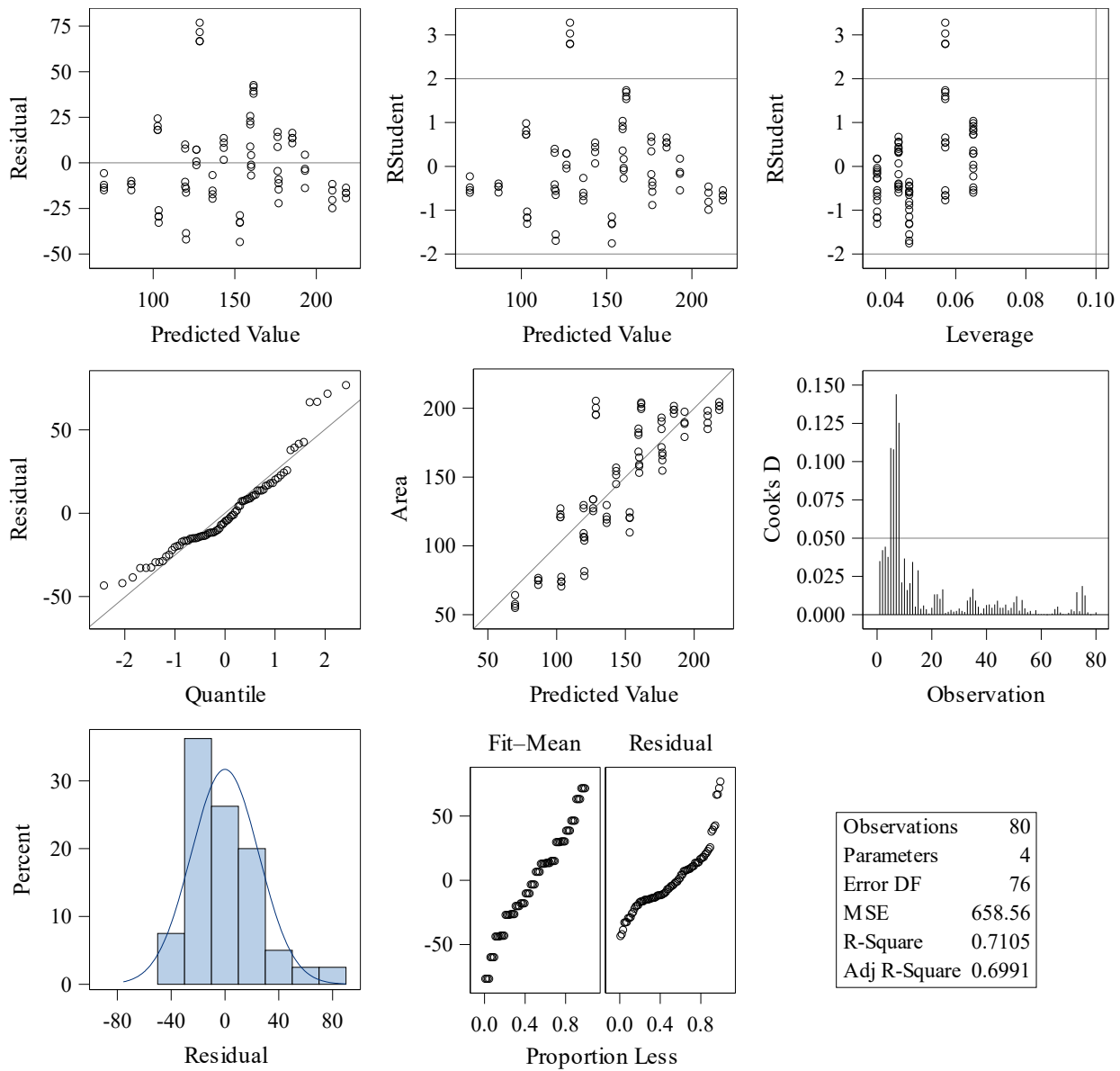
All variables have been entered into the model.

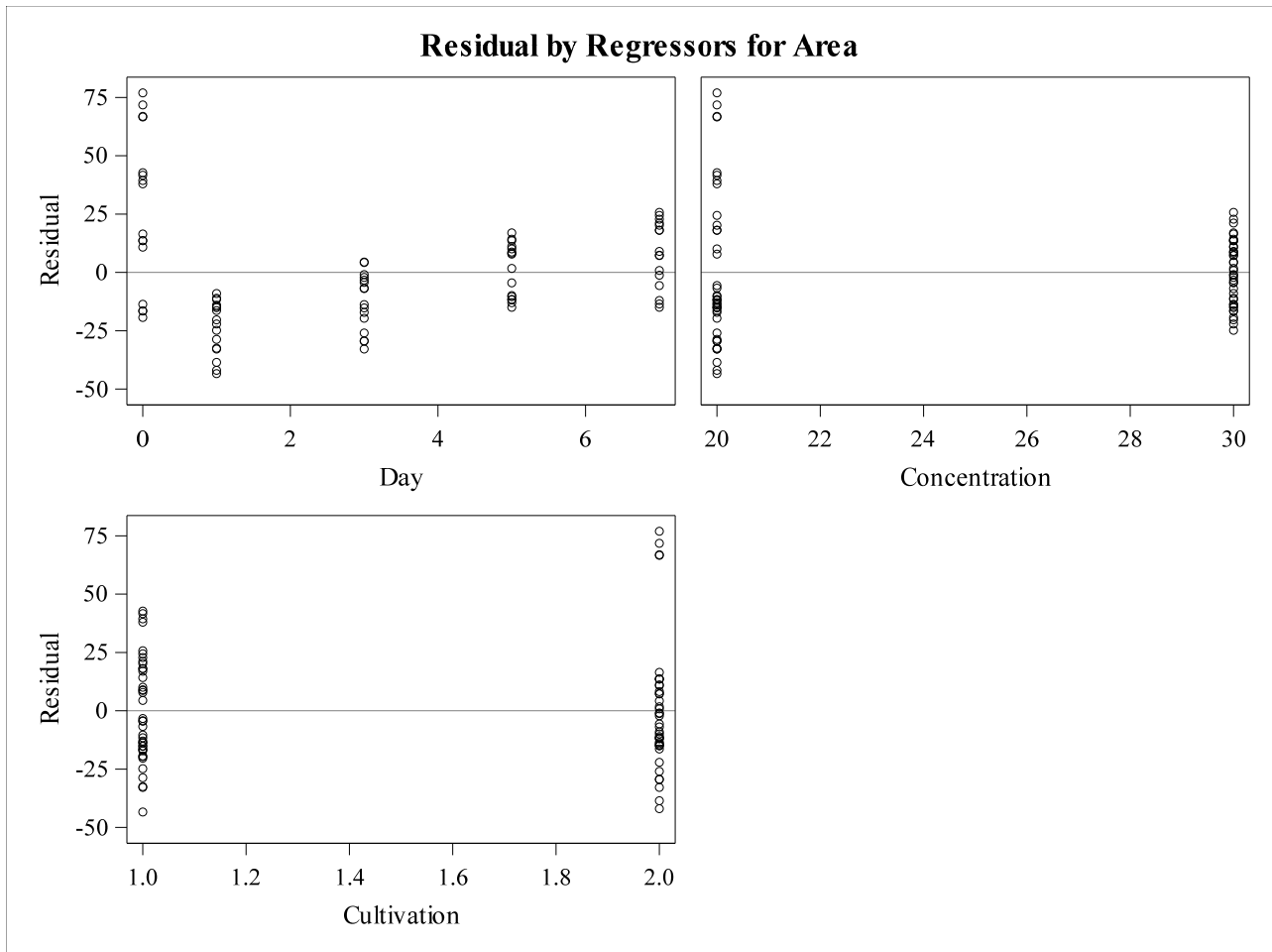
Summary of Stepwise Selection

Step	Variable Entered	Variable Removed	Label	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	Concentration		Concentration	1	0.3713	0.3713	89.0535	46.07	<.0001
2	Day		Day	2	0.2135	0.5849	34.9901	39.61	<.0001
3	Cultivation__static_1_dynamic_2__		Cultivation	3	0.1257	0.7105	4.0000	32.99	<.0001

Model: MODEL1
Dependent Variable: Area Area

Fit Diagnostics for Area





Additional evaluations

Proliferation medium

Linear Regression of Thickness by Day, Concentration a Cultivation

Model: MODEL1

Dependent Variable: Thickness Thickness

Number of Observations Read	80
Number of Observations Used	80

Stepwise Selection: Step 1

Variable Day Entered: R-Square = 0.4804 and C(p) = 72.6053

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	0.39633	0.39633	72.11	<.0001
Error	78	0.42872	0.00550		
Corrected Total	79	0.82505			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	1.19431	0.01326	44.55758	8106.70	<.0001
Day	-0.02748	0.00324	0.39633	72.11	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable Cultivation__static_1_dynamic_2_ Entered: R-Square = 0.6326 and C(p) = 31.0651

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	0.52194	0.26097	66.30	<.0001
Error	77	0.30311	0.00394		
Corrected Total	79	0.82505			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	1.31319	0.02385	11.93301	3031.41	<.0001
Day	-0.02748	0.00274	0.39633	100.68	<.0001
Cultivation__static_1_dynamic_2_	-0.07925	0.01403	0.12561	31.91	<.0001

Bounds on condition number: 1, 4

Stepwise Selection: Step 3

Variable Concentration Entered: R-Square = 0.7343 and C(p) = 4.0000

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	0.60579	0.20193	69.99	<.0001
Error	76	0.21926	0.00288		
Corrected Total	79	0.82505			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	1.15131	0.03631	2.90041	1005.36	<.0001
Day	-0.02748	0.00234	0.39633	137.38	<.0001
Concentration	0.00648	0.00120	0.08385	29.07	<.0001
Cultivation__static_1_dynamic_2__	-0.07925	0.01201	0.12561	43.54	<.0001

Bounds on condition number: 1, 9

All variables left in the model are significant at the 0.1500 level.

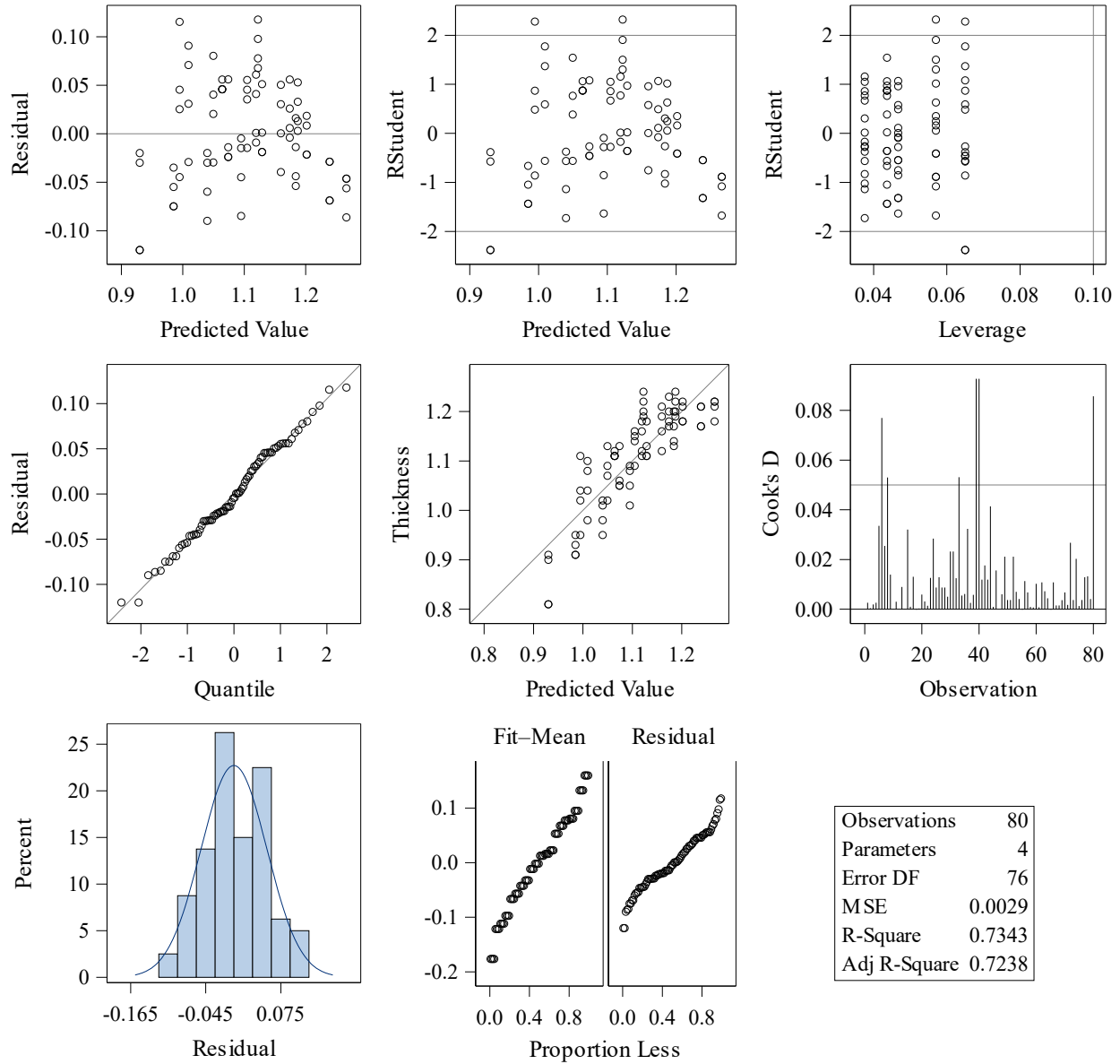
All variables have been entered into the model.

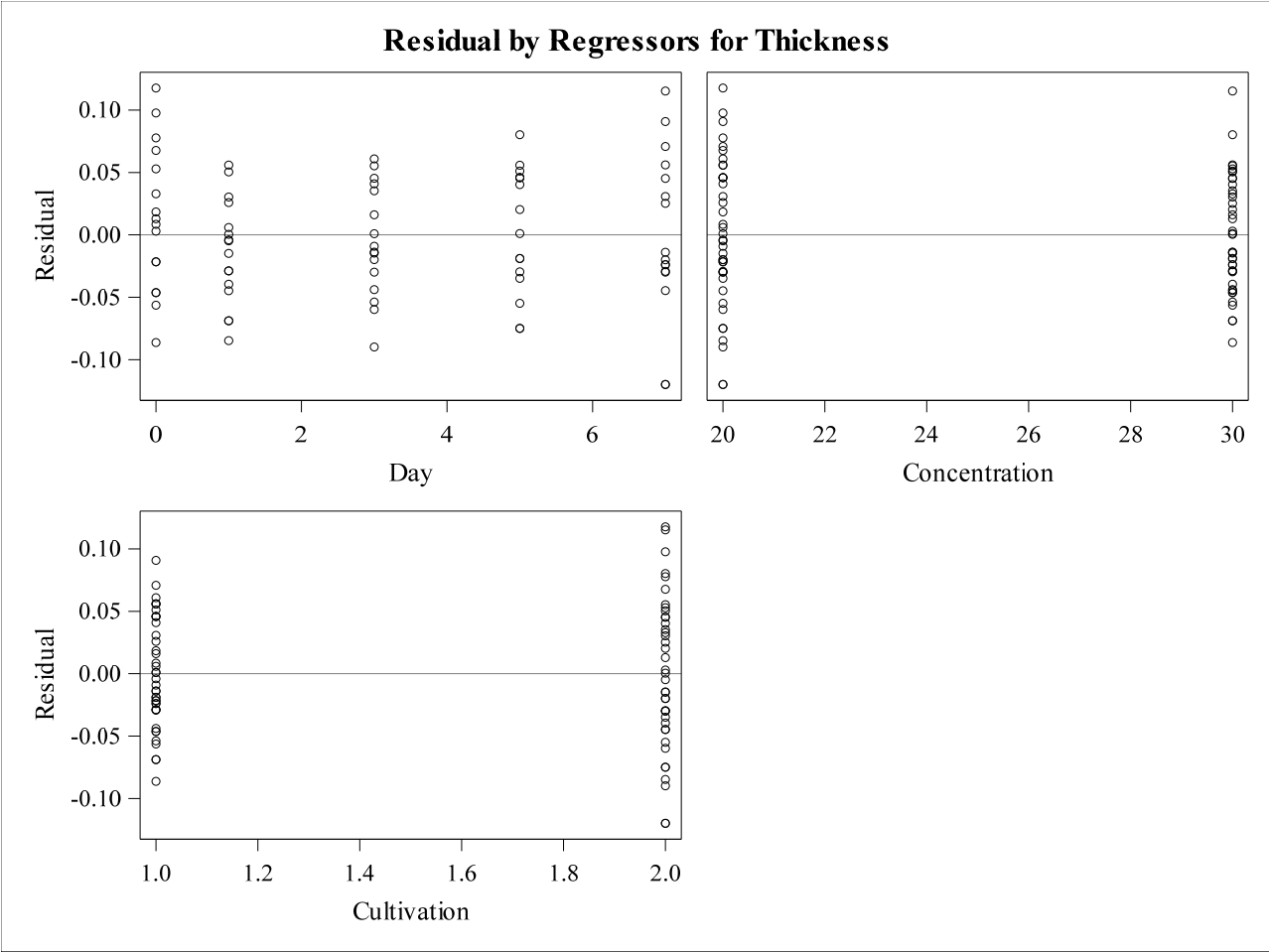
Summary of Stepwise Selection									
Step	Variable Entered	Variable Removed	Label	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	Day		Day	1	0.4804	0.4804	72.6053	72.11	<.0001
2	Cultivation__static_1_dynamic_2__		Cultivation	2	0.1522	0.6326	31.0651	31.91	<.0001
3	Concentration		Concentration	3	0.1016	0.7343	4.0000	29.07	<.0001

Model: MODEL1

Dependent Variable: Thickness Thickness

Fit Diagnostics for Thickness





Additional evaluations
Differentiation medium SMC
Linear Regression of Area by Concentration, Day, Print Height and Cultivation

Model: MODEL1
Dependent Variable: Area Area

Number of Observations Read	128
Number of Observations Used	128

Stepwise Selection: Step 1

Variable Day Entered: R-Square = 0.7354 and C(p) = 23.4268

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	453606	453606	350.27	<.0001
Error	126	163172	1295.01916		
Corrected Total	127	616778			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	176.79051	4.89972	1685978	1301.89	<.0001
Day	-31.00047	1.65641	453606	350.27	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable Concentration Entered: R-Square = 0.7775 and C(p) = 1.9792

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	479558	239779	218.42	<.0001
Error	125	137221	1097.76467		
Corrected Total	127	616778			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	105.59559	15.32180	52141	47.50	<.0001
Concentration	2.84780	0.58571	25952	23.64	<.0001
Day	-31.00047	1.52505	453606	413.21	<.0001

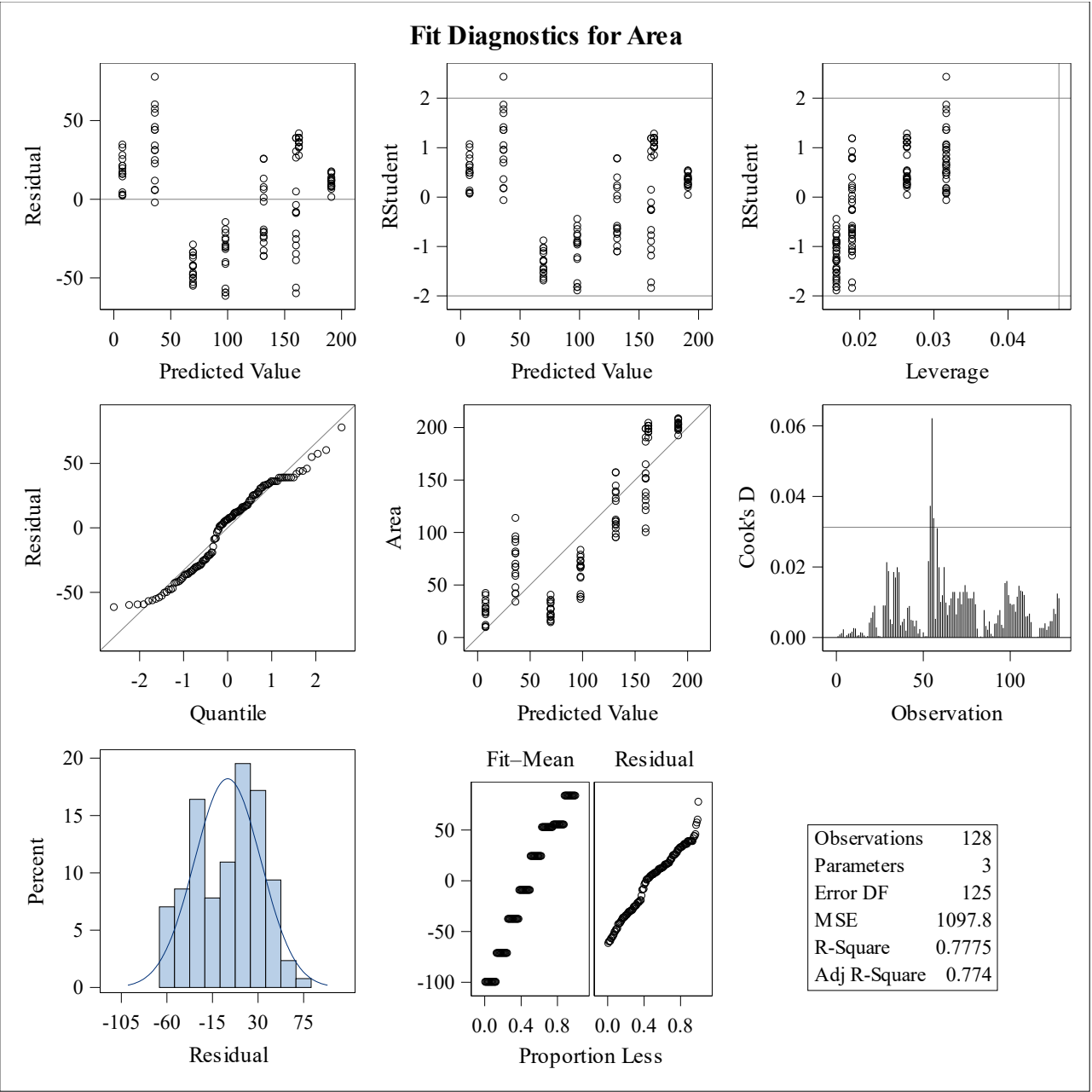
Bounds on condition number: 1, 4

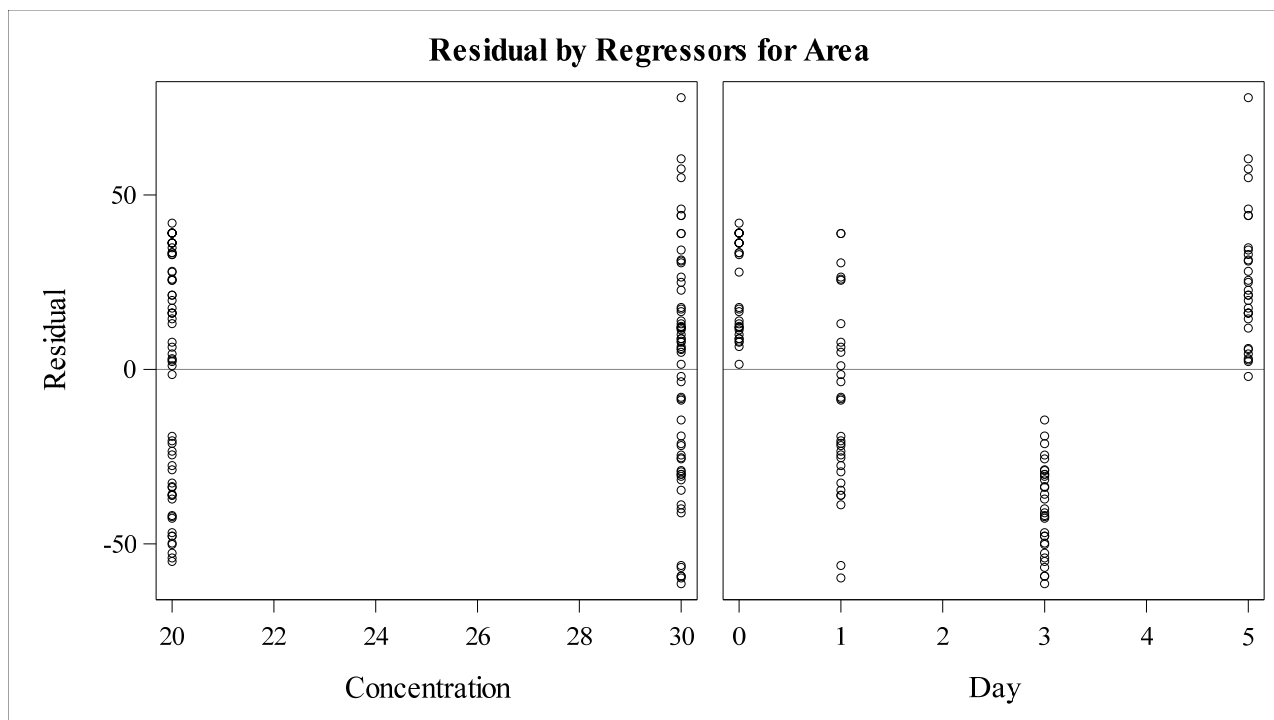
All variables left in the model are significant at the 0.1500 level.

No other variable met the 0.1500 significance level for entry into the model.

Summary of Stepwise Selection									
Step	Variable Entered	Variable Removed	Label	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	Day		Day	1	0.7354	0.7354	23.4268	350.27	<.0001
2	Concentration		Concentration	2	0.0421	0.7775	1.9792	23.64	<.0001

Model: MODEL1
Dependent Variable: Area Area





Additional evaluations

Differentiation medium SMC

Linear Regression of Thickness by Concentration, Day, Print Height and Cultivation

Model: MODEL1

Dependent Variable: Thickness Thickness

Number of Observations Read	128
Number of Observations Used	128

Stepwise Selection: Step 1

Variable Print_height Entered: R-Square = 0.7065 and C(p) = 159.9157

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	4.73935	4.73935	303.33	<.0001
Error	126	1.96870	0.01562		
Corrected Total	127	6.70806			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	0.02125	0.05634	0.00222	0.14	0.7067
Print_height	0.96211	0.05524	4.73935	303.33	<.0001

Bounds on condition number: 1, 1

Stepwise Selection: Step 2

Variable Cultivation_thickness__static__1 Entered: R-Square = 0.8576 and C(p) = 15.7497

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	5.75288	2.87644	376.43	<.0001
Error	125	0.95517	0.00764		
Corrected Total	127	6.70806			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	0.02125	0.03940	0.00222	0.29	0.5906
Print_height	0.96211	0.03863	4.73935	620.22	<.0001
Cultivation_thickness__static__1	-0.08898	0.00773	1.01353	132.64	<.0001

Bounds on condition number: 1, 4

Stepwise Selection: Step 3

Variable Day Entered: R-Square = 0.8727 and C(p) = 3.1714

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	5.85397	1.95132	283.30	<.0001
Error	124	0.85408	0.00689		
Corrected Total	127	6.70806			

Variable	Parameter Estimate	Standard Error	Type II SS	F Value	Pr > F
Intercept	0.05418	0.03838	0.01373	1.99	0.1606
Day	-0.01463	0.00382	0.10109	14.68	0.0002
Print_height	0.96211	0.03668	4.73935	688.08	<.0001
Cultivation_thickness__static__1	-0.08898	0.00734	1.01353	147.15	<.0001

Bounds on condition number: 1, 9

All variables left in the model are significant at the 0.1500 level.

No other variable met the 0.1500 significance level for entry into the model.

Summary of Stepwise Selection									
Step	Variable Entered	Variable Removed	Label	Number Vars In	Partial R-Square	Model R-Square	C(p)	F Value	Pr > F
1	Print_height		Print_height	1	0.7065	0.7065	159.916	303.33	<.0001
2	Cultivation_thickness__static__1		Cultivation	2	0.1511	0.8576	15.7497	132.64	<.0001
3	Day		Day	3	0.0151	0.8727	3.1714	14.68	0.0002

Model: MODEL1

Dependent Variable: Thickness Thickness

Fit Diagnostics for Thickness

