GLM for Energy using Temperature and Sucrose
Includes Tukey Adjustment for LS Energy Means

The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
temp	3	20 30 40
sucrose	2	20 40

Number of Observations Read	18
Number of Observations Used	18

The GLM Procedure

Dependent Variable: energy

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	271.9444444	54.3888889	70.43	<.0001
Error	12	9.2666667	0.7722222		
Corrected Total	17	281.2111111			

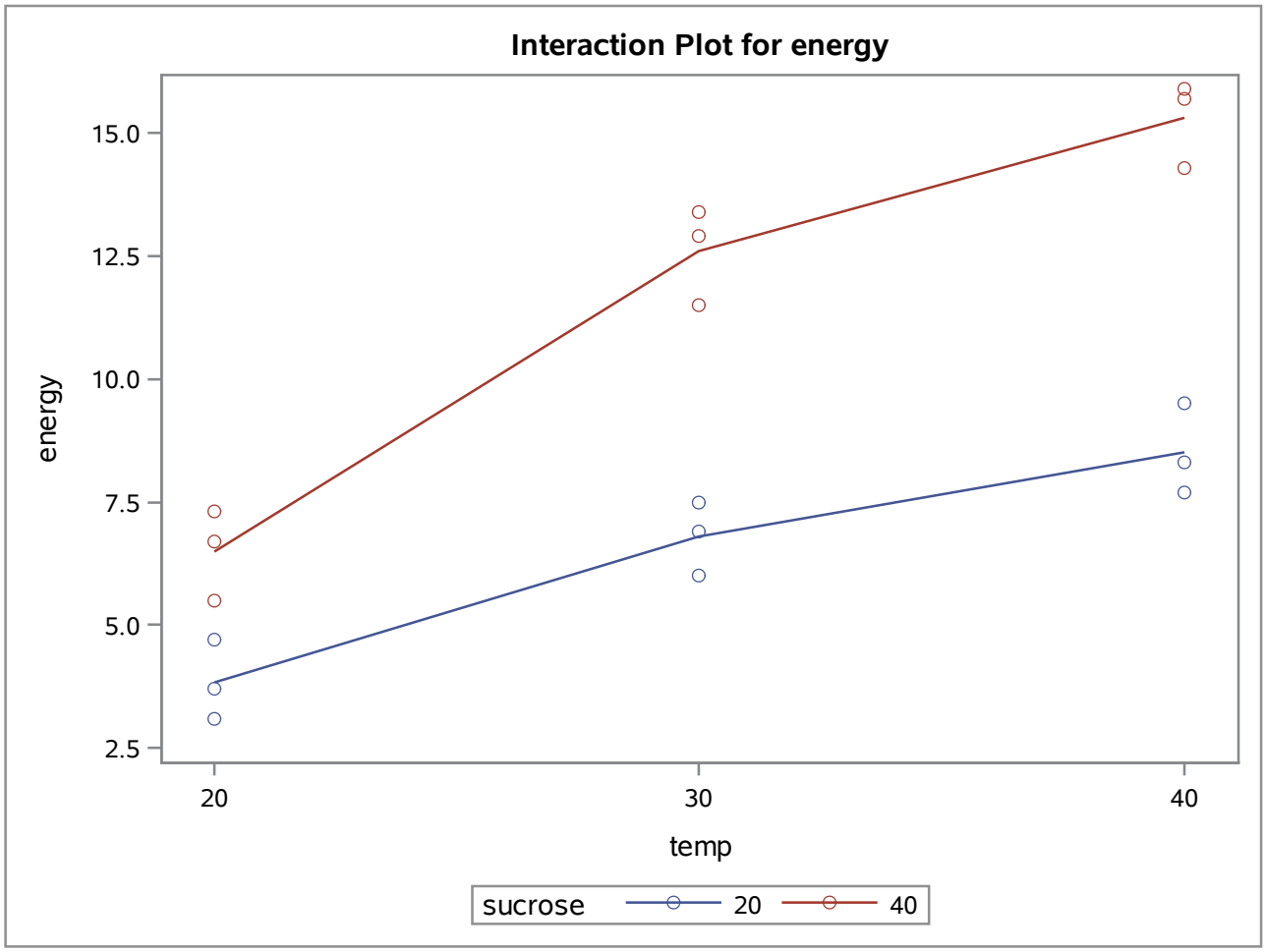
R-Square	Coeff Var	Root MSE	energy Mean
0.967047	9.849135	0.878762	8.922222

Source	DF	Type I SS	Mean Square	F Value	Pr > F
temp	2	141.4577778	70.7288889	91.59	<.0001
sucrose	1	116.5355556	116.5355556	150.91	<.0001
temp*sucrose	2	13.9511111	6.9755556	9.03	0.0040

Source	DF	Type III SS	Mean Square	F Value	Pr > F
temp	2	141.4577778	70.7288889	91.59	<.0001
sucrose	1	116.5355556	116.5355556	150.91	<.0001
temp*sucrose	2	13.9511111	6.9755556	9.03	0.0040

The GLM Procedure

Dependent Variable: energy



The GLM Procedure
Least Squares Means
Adjustment for Multiple Comparisons: Tukey

temp	sucrose	energy LSMEAN	LSMEAN Number
20	**20**	3.8333333	1
20	**40**	6.5000000	2
30	**20**	6.8000000	3
30	**40**	12.6000000	4
40	**20**	8.5000000	5
40	**40**	15.3000000	6

The GLM Procedure
Least Squares Means

temp	sucrose	energy LSMEAN	95% Confidence Limits	
20	20	3.833333	2.727905	4.938761
20	40	6.500000	5.394572	7.605428
30	20	6.800000	5.694572	7.905428
30	40	12.600000	11.494572	13.705428
40	20	8.500000	7.394572	9.605428
40	40	15.300000	14.194572	16.405428

Least Squares Means for Effect temp*sucrose				
i	j	Difference Between Means	Simultaneous 95% Confidence Limits for LSMean(i)-LSMean(j)	
1	2	-2.666667	-5.076699	-0.256635
1	3	-2.966667	-5.376699	-0.556635
1	4	-8.766667	-11.176699	-6.356635
1	5	-4.666667	-7.076699	-2.256635
1	6	-11.466667	-13.876699	-9.056635
2	3	-0.300000	-2.710032	2.110032
2	4	-6.100000	-8.510032	-3.689968
2	5	-2.000000	-4.410032	0.410032
2	6	-8.800000	-11.210032	-6.389968
3	4	-5.800000	-8.210032	-3.389968
3	5	-1.700000	-4.110032	0.710032
3	6	-8.500000	-10.910032	-6.089968
4	5	4.100000	1.689968	6.510032
4	6	-2.700000	-5.110032	-0.289968
5	6	-6.800000	-9.210032	-4.389968

GLM for Energy using Temperature and Sucrose
Includes Tests for LS Energy Means Sliced by Sucrose
Includes Tests for LS Energy Means Sliced by Temperature

The GLM Procedure
Least Squares Means

temp*sucrose Effect Sliced by sucrose for energy

sucrose	DF	Sum of Squares	Mean Square	F Value	Pr > F
20	2	33.468889	16.734444	21.67	0.0001
40	2	121.940000	60.970000	78.95	<.0001

The GLM Procedure
Least Squares Means

temp*sucrose Effect Sliced by temp for energy

temp	DF	Sum of Squares	Mean Square	F Value	Pr > F
20	1	10.666667	10.666667	13.81	0.0029
30	1	50.460000	50.460000	65.34	<.0001
40	1	69.360000	69.360000	89.82	<.0001

The GLM Procedure

Class Level Information		
Class	Levels	Values
temp	3	20 30 40
sucrose	2	20 40

Number of Observations Read	18
Number of Observations Used	18

The GLM Procedure

Coefficients for Estimate Temp 20 vs 30 at Sucrose 20	
	Row 1
Intercept	0
temp 20	1
temp 30	-1
temp 40	0
sucrose 20	0
sucrose 40	0
temp*sucrose 20 20	1
temp*sucrose 20 40	0
temp*sucrose 30 20	-1
temp*sucrose 30 40	0
temp*sucrose 40 20	0
temp*sucrose 40 40	0

The GLM Procedure

Dependent Variable: energy

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	271.9444444	54.3888889	70.43	<.0001
Error	12	9.2666667	0.7722222		
Corrected Total	17	281.2111111			

R-Square	Coeff Var	Root MSE	energy Mean
0.967047	9.849135	0.878762	8.922222

GLM for Energy using Temperature and Sucrose
Pairwise Contrasts for Temperature Sliced by Sucrose Level

The GLM Procedure

Dependent Variable: energy

Source	DF	Type I SS	Mean Square	F Value	Pr > F
temp	2	141.4577778	70.7288889	91.59	<.0001
sucrose	1	116.5355556	116.5355556	150.91	<.0001
temp*sucrose	2	13.9511111	6.9755556	9.03	0.0040

Source	DF	Type III SS	Mean Square	F Value	Pr > F
temp	2	141.4577778	70.7288889	91.59	<.0001
sucrose	1	116.5355556	116.5355556	150.91	<.0001
temp*sucrose	2	13.9511111	6.9755556	9.03	0.0040

Parameter	Estimate	Standard Error	t Value	Pr > |t|	99.444% Confidence Limits	
Temp 20 vs 30 at Sucrose 20	-2.96666667	0.71750597	-4.13	0.0014	-5.38537351	-0.54795982
Temp 20 vs 40 at Sucrose 20	-4.66666667	0.71750597	-6.50	<.0001	-7.08537351	-2.24795982
Temp 30 vs 40 at Sucrose 20	-1.70000000	0.71750597	-2.37	0.0354	-4.11870684	0.71870684
Temp 20 vs 30 at Sucrose 40	-6.10000000	0.71750597	-8.50	<.0001	-8.51870684	-3.68129316
Temp 20 vs 40 at Sucrose 40	-8.80000000	0.71750597	-12.26	<.0001	-11.21870684	-6.38129316
Temp 30 vs 40 at Sucrose 40	-2.70000000	0.71750597	-3.76	0.0027	-5.11870684	-0.28129316
Sucrose 20 vs 40 at Temp 20	-2.66666667	0.71750597	-3.72	0.0029	-5.08537351	-0.24795982
Sucrose 20 vs 40 at Temp 30	-5.80000000	0.71750597	-8.08	<.0001	-8.21870684	-3.38129316
Sucrose 20 vs 40 at Temp 40	-6.80000000	0.71750597	-9.48	<.0001	-9.21870684	-4.38129316