```
> cor(Cheese)

           Taste    Acetic       H2S    Lactic
Taste  1.0000000 0.5495393 0.7557523 0.7042362
Acetic 0.5495393 1.0000000 0.6179559 0.6037826
H2S    0.7557523 0.6179559 1.0000000 0.6448123
Lactic 0.7042362 0.6037826 0.6448123 1.0000000
```

Simple Linear Regression Models

```
> FitA = lm(Taste ~ Acetic, data = Cheese)
> FitB = lm(Taste ~ H2S, data = Cheese)
> FitC = lm(Taste ~ Lactic, data = Cheese)
```

```
> summary(FitA)

Call:
lm(formula = Taste ~ Acetic, data = Cheese)

Residuals:
    Min      1Q  Median      3Q     Max
-29.642  -7.443   2.082   6.597  26.581

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  -61.499     24.846  -2.475  0.01964 *
Acetic        15.648      4.496   3.481  0.00166 **
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 13.82 on 28 degrees of freedom
Multiple R-squared: 0.302,      Adjusted R-squared: 0.2771
F-statistic: 12.11 on 1 and 28 DF,  p-value: 0.001658
```

```
> summary(FitB)

Call:
lm(formula = Taste ~ H2S, data = Cheese)

Residuals:
    Min      1Q  Median      3Q     Max
-15.426  -7.611  -3.491   6.420  25.687

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  -9.7868     5.9579  -1.643    0.112
H2S           5.7761     0.9458   6.107 1.37e-06 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 10.83 on 28 degrees of freedom
Multiple R-squared: 0.5712,     Adjusted R-squared: 0.5558
F-statistic: 37.29 on 1 and 28 DF,  p-value: 1.374e-06
```

```
> summary(FitC)

Call:
lm(formula = Taste ~ Lactic, data = Cheese)

Residuals:
     Min       1Q   Median       3Q      Max
-19.9439  -8.6839  -0.1095   8.9998  27.4245

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  -29.859     10.582  -2.822  0.00869 **
Lactic        37.720      7.186   5.249 1.41e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 11.75 on 28 degrees of freedom
Multiple R-squared: 0.4959,     Adjusted R-squared: 0.4779
F-statistic: 27.55 on 1 and 28 DF,  p-value: 1.405e-05
```

Regression Models using two or more independent variables.

```
> Fit1 = lm(Taste ~ Acetic + H2S, data = Cheese)
> Fit2 = lm(Taste ~ Acetic + Lactic, data = Cheese)
> Fit3 = lm(Taste ~ H2S + Lactic, data = Cheese)
> Fit4 = lm(Taste ~ Acetic + H2S + Lactic, data = Cheese)
```

Akaike Information Criterion

```
> AIC(FitA)
[1] 246.6389
> AIC(FitB)
[1] 232.0245
> AIC(FitC)
[1] 236.8724
```

For the multiple linear regression models.

```
> AIC(Fit1)
[1] 233.2438
> AIC(Fit2)
[1] 237.3884
> AIC(Fit3)
[1] 227.7838
> AIC(Fit4)
[1] 229.7775
```

Summary of model selection metrics.

Model	Ind. Variables	Multiple R^2 (highest *)	Adjusted R^2 (highest *)	AIC (lowest *)
FitA	Acetic	0.3020	0.2771	246.6389
FitB	H2S	0.5712	0.5558	232.0245
FitC	Lactic	0.4959	0.4779	236.8724
Fit1	Acetic, H2S	0.5822	0.5512	233.2438
Fit2	Acetic, Lactic	0.5203	0.4847	237.3884
Fit3	H2S, Lactic	0.6517	0.6259 *	227.7838 *
Fit4	All Three	0.6518 *	0.6116	229.7775