/\* Enter data \*/

**data** mydata;

input Soil Shrub;

cards;

1895.879054 1

1887.039746 1

1874.542794 1

1876.981224 1

1885.820532 2

1882.772495 2

1880.029261 1

1891.611802 1

1873.32358 2

1892.221409 2

1880.943672 3

1880.334065 1

1881.55328 1

1896.488661 1

1876.066813 1

1876.981224 1

1865.703487 1

1878.810046 2

1894.355035 1

1866.617898 1

1895.57425 1

1890.392587 1

1877.895635 3

1873.628383 2

1893.745428 1

1867.837113 1

1874.847598 1

1878.200439 1

1874.847598 3

1888.258961 1

1874.542794 2

1881.248476 1

1877.590832 1

1890.697391 2

1880.638869 1

1877.590832 2

1888.258961 3

1891.611802 1

1871.189954 1

1878.200439 2

1884.90612 3

1878.505243 1

1875.762009 1

1876.981224 1

1863.874665 1

1862.045842 1

1873.018776 1

1879.11485 3

1887.649354 1

1876.67642 2

1869.970739 3

1875.457206 1

1891.306998 1

1887.649354 1

1885.515728 1

1884.90612 1

1875.762009 2

1905.937576 1

1889.478176 1

1884.90612 1

1877.895635 1

1895.879054 1

1867.837113 1

1882.772495 2

1893.745428 1

1870.88515 1

1869.056328 2

1885.515728 1

1888.258961 1

1890.697391 1

1878.810046 2

1894.964643 1

1888.258961 1

1863.874665 1

1894.659839 3

1894.964643 1

1875.152402 3

1872.713972 1

1883.686906 3

1864.179468 2

1892.831017 3

1859.607413 3

1873.32358 3

1885.820532 2

1894.964643 1

1875.457206 3

1881.858083 1

1871.799561 1

1874.847598 2

1891.002195 1

1867.837113 2

1866.313094 1

1867.837113 1

1879.724457 2

1879.11485 3

1858.693002 1

1873.018776 1

1882.467691 1

;

**run**;

**proc** **print** data=mydata;

**run**;

/\* Look at numerical data summaries \*/

**proc** **means** data=mydata mean;

class Shrub;

var Soil;

title1 'Mean Comparison';

title2 '(And number of experimental units per shrub class)';

**run**;

/\* Fit model and check assumptions \*/

**proc** **glm** data=mydata plots=diagnostics;

class Shrub;

model Soil=Shrub;

means Shrub / HOVtest=Levene;

title1 'comparison of all shrub classes';

**run**;

/\* Consider transformation \*/

**proc** **transreg** data=mydata;

model boxcox(Soil / lambda= **0** to **2** by **0.05**)

=class(Shrub);

title1 'Box-Cox on Minimum Sand Percentage';

**run**;

/\* Re-fit model on transformed data \*/

**data** mydata; set mydata;

trnsSoil = Soil\*\***1**;

**run**;

**proc** **glm** data=mydata plots=diagnostics;

class Shrub;

model trnsSoil = Shrub / solution;

output out = out1 p=pred r=resid;

means Shrub / Bon HOVtest=Levene;

title1 'Comparison of all Shrub Classes'

title2 '(lambda 1)';

**run**;