Análisis de la Corriente, 723 (Experimento de Screening)
02/12/2005 12:31 p.m.

Analysis Summary

File name: C:\Documents and Settings\Edward A. Moscoso\Mis documentos\Statgraphics\CB_723_1.sfx

Estimated effects for Ol y Ona 723
----
average   = 168,796 +/- 0,588352
A:Carga   = 19,945   +/- 1,1767
B:Vapor E530 = 14,8912 +/- 1,1767
C:P_C525   = 19,2137 +/- 1,1767
D:Nivel_V540 = 19,1212 +/- 1,1767
E:Vapor_E532 = 10,9587 +/- 1,1767
AB   = 2,30375 +/- 1,1767
AC   = -0,65875 +/- 1,1767
AD   = 3,88875 +/- 1,1767
AE   = 1,47625 +/- 1,1767
BC   = 4,2725   +/- 1,1767
BD   = 0,71   +/- 1,1767
BE   = -1,845   +/- 1,1767
CD   = 2,08   +/- 1,1767
CE   = 2,785   +/- 1,1767
DE   = 0,59   +/- 1,1767

Standard errors are based on total error with 16 d.f.

The StatAdvisor

   This table shows each of the estimated effects and interactions.
Also shown is the standard error of each of the effects, which
measures their sampling error. To plot the estimates in decreasing
order of importance, select Pareto Charts from the list of Graphical
Options. To test the statistical significance of the effects, select
ANOVA Table from the list of Tabular Options. You can then remove
insignificant effects by pressing the alternate mouse button,
selecting Analysis Options, and pressing the Exclude button.

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Analysis of Variance for Ol y Ona 723
-----------------------------------------------------------------------------
Source               Sum of Squares  Df   Mean Square   F-Ratio   P-Value
-----------------------------------------------------------------------------
A:Carga                  3182,42     1      3182,42      287,30    0,0000
B:Vapor E530             1773,99     1      1773,99      160,15    0,0000
C:P C525                 2953,35     1      2953,35      266,62    0,0000
D:Nivel V540             2924,98     1      2924,98      264,06    0,0000
E:Vapor E532             960,754     1      960,754       86,73    0,0000
AB                       42,4581     1      42,4581        3,83    0,0679
AC                       3,47161     1      3,47161        0,31    0,5834
AD                       120,979     1      120,979       10,92    0,0045
AE                       17,4345     1      17,4345        1,57    0,2277
BC                       146,034     1      146,034       13,18    0,0022
BD                        4,0328     1       4,0328        0,36    0,5547
BE                       27,2322     1      27,2322        2,46    0,1365
CD                       34,6112     1      34,6112        3,12    0,0962
CE                       62,0498     1      62,0498        5,60    0,0309
DE                        2,7848     1       2,7848        0,25    0,6229
Total error              177,233    16       11,077
-----------------------------------------------------------------------------
Total (corr.)            12433,8    31
```

R-squared = 98,5746 percent
R-squared (adjusted for d.f.) = 97,2383 percent
Standard Error of Est. = 3,32822
Mean absolute error = 1,96
Durbin-Watson statistic = 2,76048 (P=0,0002)
Lag 1 residual autocorrelation = -0,414811

The StatAdvisor

   The ANOVA table partitions the variability in Ol_y_Ona_723 into
separate pieces for each of the effects. It then tests the
statistical significance of each effect by comparing the mean square
against an estimate of the experimental error. In this case, 8
effects have P-values less than 0,05, indicating that they are
significantly different from zero at the 95,0% confidence level.
   The R-Squared statistic indicates that the model as fitted explains
98,5746% of the variability in Ol y Ona 723. The adjusted R-squared
statistic, which is more suitable for comparing models with different
numbers of independent variables, is 97,2383%. The standard error of
the estimate shows the standard deviation of the residuals to be
3,32822. The mean absolute error (MAE) of 1,96 is the average value
of the residuals. The Durbin-Watson (DW) statistic tests the
residuals to determine if there is any significant correlation based
on the order in which they occur in your data file. Since the P-value
is less than 0.05, there is an indication of possible serial
correlation. Plot the residuals versus row order to see if there is
any pattern which can be seen.

Regression coeffs. for Ol y Ona 723
----
constant   = 1385,12
A:Carga   = -0,0132645
B:Vapor E530 = -0,124937
C:P C525   = -169,511
D:Nivel V540 = -19,4189
E:Vapor E532 = 0,106403
AB   = 0,00000131643
AC   = -0,000188214
AD   = 0,000158724
AE   = 0,00000140595
BC   = 0,01709
BD   = 0,000405714
BE   = -0,0000246
CD   = 0,594286
CE   = 0,0185667
DE   = 0,000561905

The StatAdvisor

   This pane displays the regression equation which has been fitted to
the data. The equation of the fitted model is

Ol y Ona 723 = 1385,12 - 0,0132645*Carga - 0,124937*Vapor E530 -
169,511*P C525 - 19,4189*Nivel V540 + 0,106403*Vapor E532 +
0,00000131643*Carga*Vapor E530 - 0,000188214*Carga*P C525 +
0,000158724*Carga*Nivel V540 + 0,00000140595*Carga*Vapor E532 +
0,01709*Vapor E530*P C525 + 0,000405714*Vapor E530*Nivel V540 -
0,0000246*Vapor E530*Vapor E532 + 0,594286*P C525*Nivel V540 +
0,0185667*P_C525*Vapor_E532 + 0,000561905*Nivel_V540*Vapor_E532

where the values of the variables are specified in their original
units. To have STATGRAPHICS evaluate this function, select
Predictions from the list of Tabular Options. To plot the function,
select Response Plots from the list of Graphical Options.

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Estimation Results for Ol y Ona 723
-------------------------------------------------------------------
          Observed      Fitted  Lower 95,0% CL  Upper 95,0% CL
Row        Value        Value      for Mean        for Mean
-------------------------------------------------------------------
     1     136,84      134,533      129,543        139,522
     2     149,02      147,467      142,478        152,457
     3     144,02      143,983      138,993        148,972
     4     158,34      161,525      156,536        166,514
     5     148,7       145,267      140,278        150,257
     6     152,41      156,885      151,896        161,874
     7     160,68      163,263      158,273        168,252
     8     182,4       179,488      174,498        184,477
     9     143,93      146,385      141,396        151,374
    10     168,82      167,097      162,108        172,087
    11     157,94      157,255      152,266        162,244
    12     181,91      182,575      177,586        187,564
    13     161,68      161,28       156,291        166,269
    14     178,19      180,675      175,686        185,664
    15     178,87      180,695      175,706        185,684
    16     209,32      204,697      199,708        209,687
    17     138,34      142,485      137,496        147,474
    18     158,54      158,372      153,383        163,362
    19     151,92      148,245      143,256        153,234
    20     168,33      168,74       163,751        173,729
    21     157,06      158,79       153,801        163,779
    22     176,25      173,36       168,371        178,349
    23     172,1       173,095      168,106        178,084
    24     192,82      192,272      187,283        197,262
    25     154,36      155,517      150,528        160,507
    26     181,19      179,183      174,193        184,172
    27     163,75      162,697      157,708        167,687
    28     189,78      190,97       185,981        195,959
    29     179,33      175,983      170,993        180,972
    30     196,95      198,33       193,341        203,319
    31     191,66      191,707      186,718        196,697
    32     216,03      218,662      213,673        223,652
-------------------------------------------------------------------



The StatAdvisor
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   This table contains information about values of Ol y_Ona_723
generated using the fitted model.  The table includes:
   (1) the observed value of Ol y Ona 723 (if any)
   (2) the predicted value of Ol y Ona 723 using the fitted model
   (3) 95,0% confidence limits for the mean response
Each item corresponds to the values of the experimental factors in a
specific row of your data file.  To generate forecasts for additional
combinations of the factors, add additional rows to the bottom of your
data file.  In each new row, enter values for the experimental factors
but leave the cell for the response empty.  When you return to this
pane, forecasts will be added to the table for the new rows, but the
model will be unaffected.
```
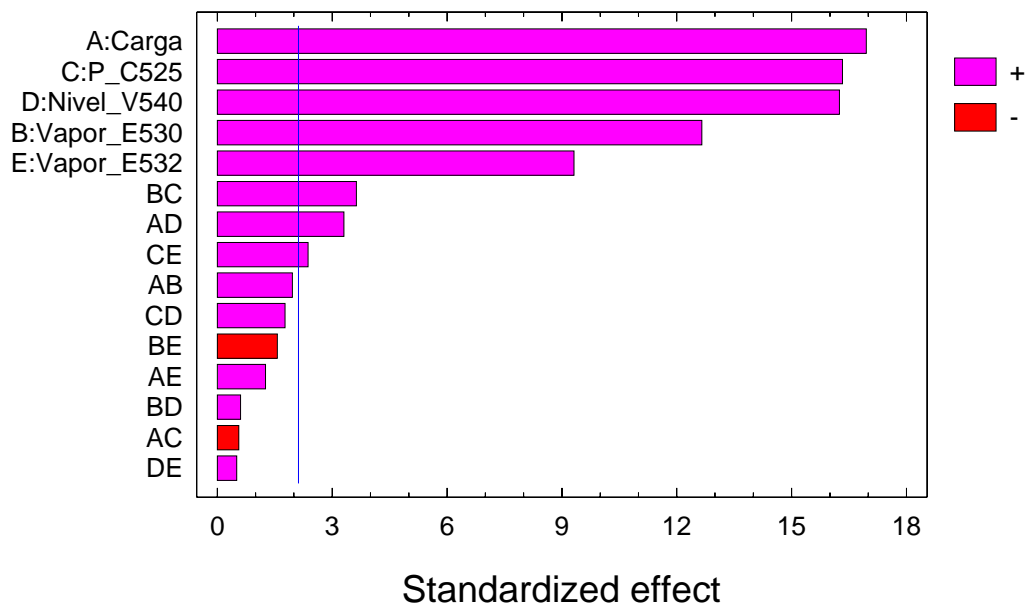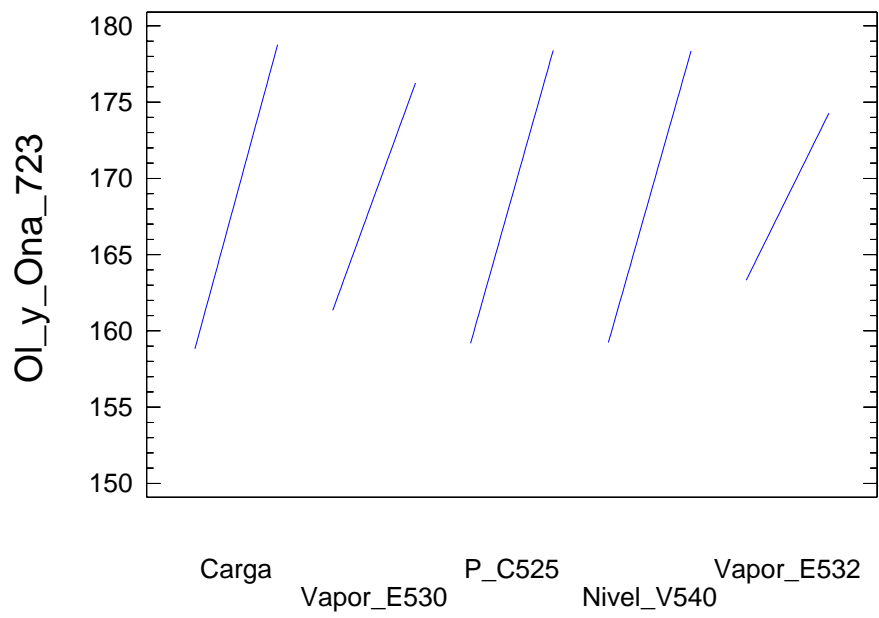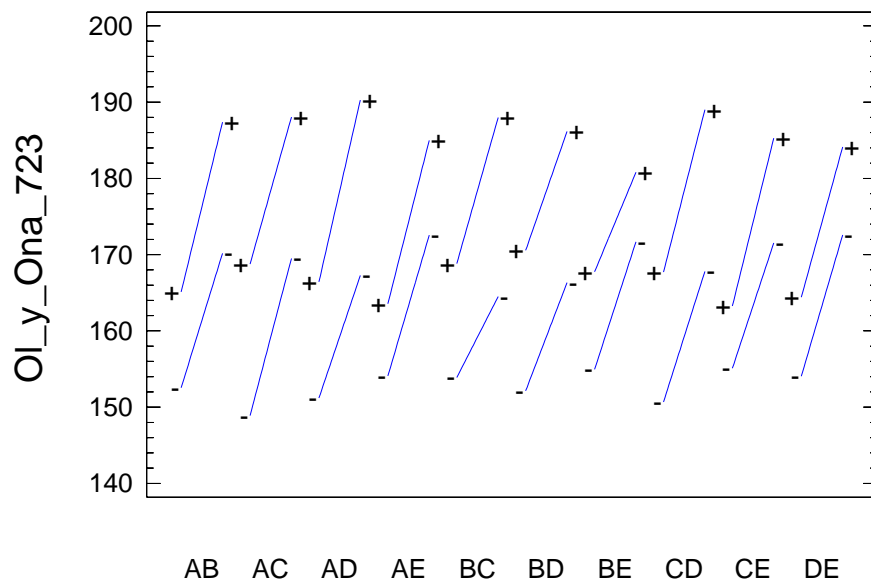
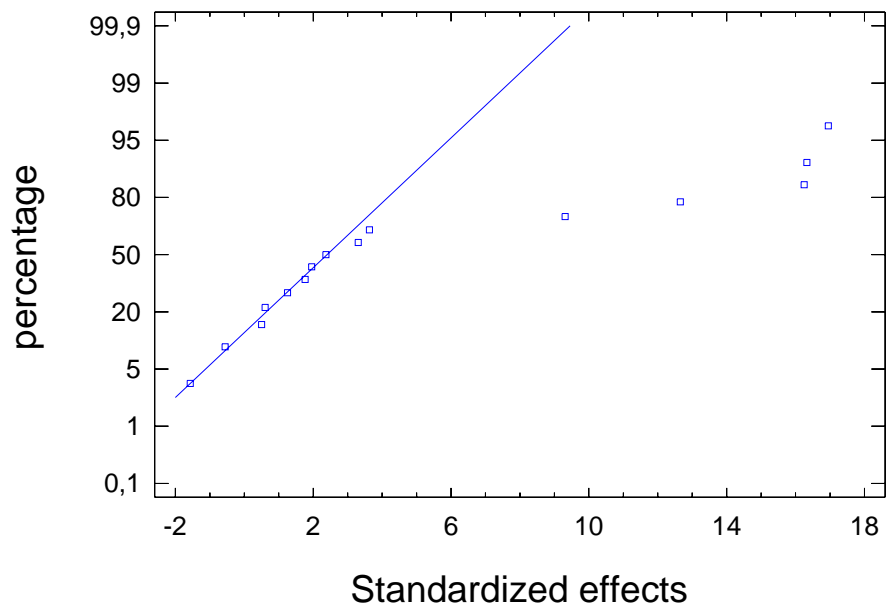## Standardized Pareto Chart for Ol_y_Ona_723
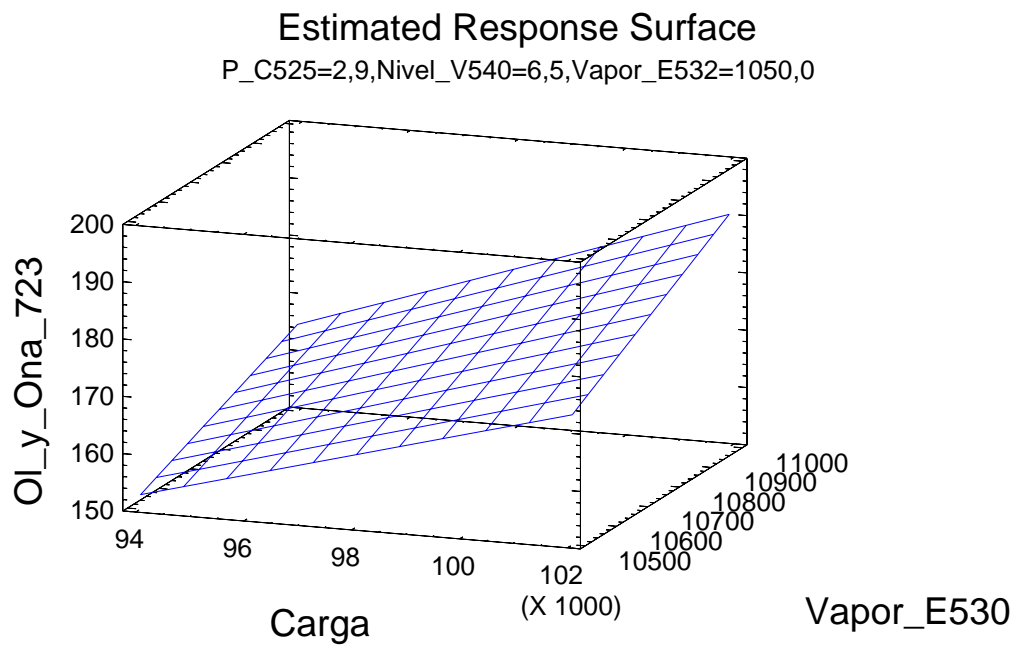

Standardized effect

Main Effects Plot for OI_y_Ona_723

Interaction Plot for OI_y_Ona_723

Normal Probability Plot for Ol_y_Ona_723

Estimated Response Surface

P_C525=2,9,Nivel_V540=6,5,Vapor_E532=1050,0

Ol_y_Ona_723

200
190
180
170
160
150

94   96   98   100   102
(X 1000)

Carga

11000
10900
10800
10700
10600
10500

Vapor_E530

Contours of Estimated Response Surface

P_C525=2,9,Nivel_V540=6,5,Vapor_E532=1050,0

Ol_y_Ona_723

— 150,0
— 155,0
— 160,0
— 165,0
— 170,0
— 175,0
— 180,0
— 185,0
— 190,0
— 195,0
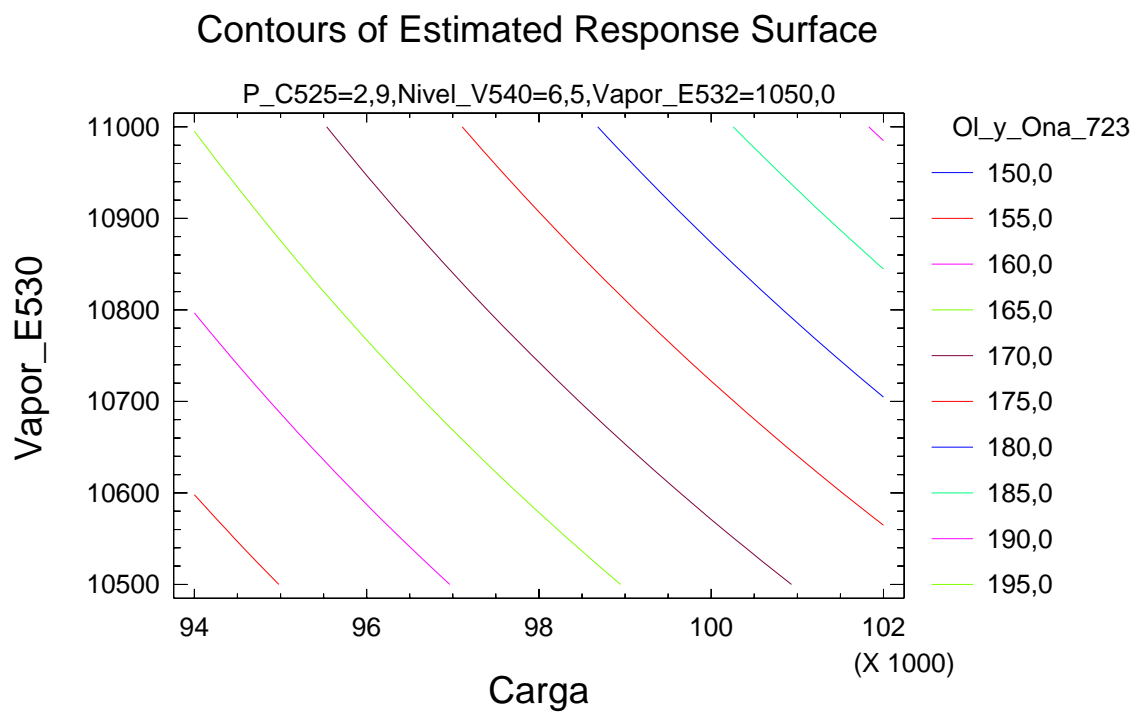
Residual Plot for Ol_y_Ona_723