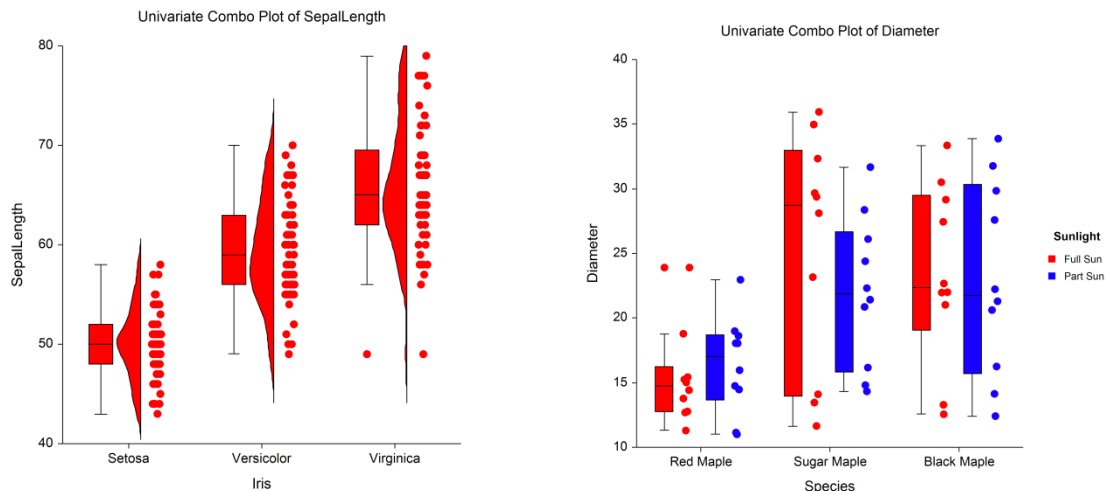


Chapter 145

Combo Charts

Introduction

When analyzing data, you often need to study the characteristics of a single group of numbers, observations, or measurements. You might want to know the center and the spread about this central value. You might want to investigate extreme values (referred to as outliers) or study the distribution or pattern of the data values. Several plots are available to allow you to study the distribution. These include box plots, density plots, dot plots, error-bar plots, histograms, and percentile plots. The Combo Chart procedures allow you to combine any combination of these six plots on a single plot.



For details of the individual aspects of each plot type, go to the corresponding chapter for that plot type.

Data Structure

A combo chart is constructed from a numeric variable. A second variable may be used to divide the first variable into groups (e.g., age group or gender). In the two-factor procedure, a third variable may be used to divide the groups into subgroups.

Procedure Options

This section describes the options available in this procedure.

Variables Tab

This panel specifies which columns are used to create the combo plot.

Variables – Simple

Data Variable(s)

This option lets you designate which variables are plotted. If more than one Data Variable is designated and no Horizontal (Group) Variable is selected, a set of plots will be displayed on a single chart, one for each variable. If more than one variable is designated and a Horizontal (Group) Variable is selected, a separate plot will be drawn for each variable.

Horizontal (Group) Variable

Designates an optional variable used to separate the observations into groups. The groups defined by this variable will all appear on the same plot.

Frequency Variable

Specify an optional frequency (count) variable. This variable contains integers that represent the number of observations (frequency) associated with each observation. If left blank, each observation has a frequency of one.

Data Label Variable

A data label is text that is displayed beside each outlier point. This option designates the variable containing the data labels. The values may be text or numeric.

Break Variable

Select an optional break (categorical) variable. A separate plot will be generated for each unique value of this variable. If you specify more than one break variable, a separate plot will be generated for each unique combination of the values of the variables specified.

Variables – Two-Factor Combo Charts

Data Variable(s)

This option lets you designate which variables are plotted. If more than one Data Variable is designated and no Legend (Subgroup) Variable is selected, the variables will become the legend (subgroup) levels. If more than one variable is designated and a Legend (Subgroup) Variable is selected, a separate plot will be drawn for each variable.

Horizontal (Group) Variable

Designates an optional variable used to separate the observations into groups. An individual plot group will be displayed for each unique combination of this variable with the Legend (Subgroup) Variable.

Legend (Subgroup) Variable

Designates an optional variable used to separate the observations into subgroups. An individual plot will be displayed for each combination of this variable with the Horizontal (Group) Variable. The levels of this variable will be shown in the legend.

Frequency Variable

Specify an optional frequency (count) variable. This variable contains integers that represent the number of observations (frequency) associated with each observation. If left blank, each observation has a frequency of one.

Data Label Variable

A data label is text that is displayed beside each outlier point. This option designates the variable containing the data labels. The values may be text or numeric.

Combo Charts

Break Variable

Select an optional break (categorical) variable. A separate plot will be generated for each unique value of this variable. If you specify more than one break variable, a separate plot will be generated for each unique combination of the values of the variables specified.

Format Options

Variable Names

This option specifies whether the column names or column labels are used on the chart.

Value Labels

This option specifies whether the actual values or the labels from the Data Label Variable are used to label the points, and whether the values or the value labels are used for the group level labels of the plot.

Combo Chart Format

Format

Click the format button to change the plot settings (see Combo Chart Format Window Options below).

Edit During Run

Checking this option will cause the plot format window to appear when the procedure is run. This allows you to modify the format of the graph with the actual data.

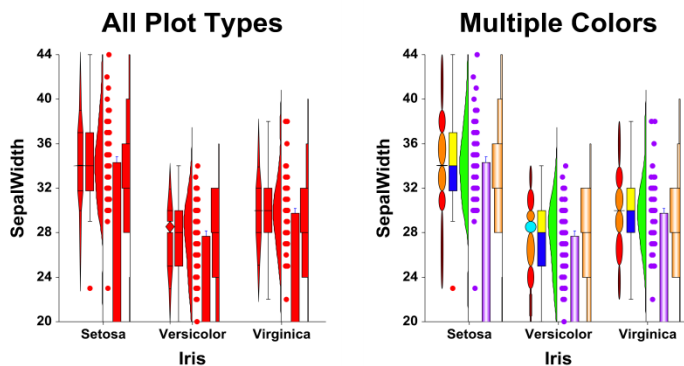
Combo Plot Window Options

This section describes the specific options available on the Combo Plot window, which is displayed when the Combo Plot button is clicked. Common options, such as axes, labels, legends, and titles are documented in the Graphics Components chapter.

Combo Plot Tab

Plot Contents Section

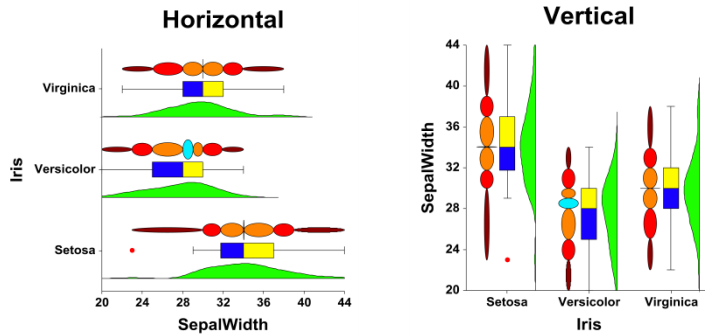
You can choose which of the individual plots you want to display.



Layout Tab

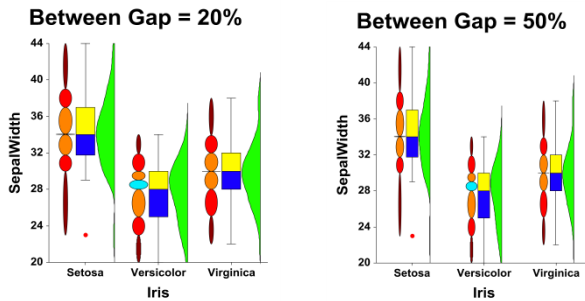
Orientation Section

You can orient the plot horizontally or vertically.



Object Spacing and Size Section

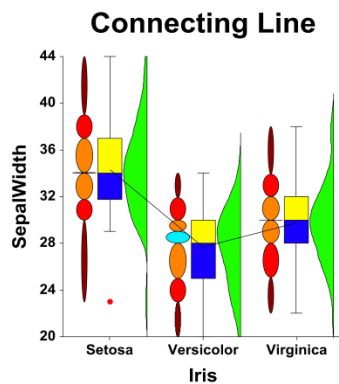
You can change the size of the gap between individual plots.



Connecting Lines Tab

Connect Between Groups Section

You can add reference lines at group means and percentiles.



Titles, Legend, Numeric Axis, Group Axis, Grid Lines, and Background Tabs

Details on setting the options in these tabs are given in the Graphics Components chapter.

Example 1 – Creating a Combo Chart

This section presents an example of how to generate a combo chart. The data used are from the Fisher dataset. We will create combo charts of the *SepalLength* variable, breaking on the type of iris.

You may follow along here by making the appropriate entries or load the completed template **Example 1** by clicking on Open Example Template from the File menu of the Combo Charts window.

1 Open the Fisher dataset.

- From the File menu of the NCSS Data window, select **Open Example Data**.
- Click on the file **Fisher.NCSS**.
- Click **Open**.

2 Open the Combo Charts window.

- Using the Graphics menu or the Procedure Navigator, find and select the **Combo Charts** procedure.
- On the menus, select **File**, then **New Template**. This will fill the procedure with the default template.

3 Specify the variables.

- On the Combo Charts window, select the **Variables tab**.
- Double-click in the **Data Variable(s)** text box. This will bring up the variable selection window.
- Select **SepalLength** from the list of variables and then click **Ok**. “SepalLength” will appear in the Variable(s) box.
- Double-click in the **Horizontal (Group) Variable** text box. This will bring up the variable selection window.
- Select **Iris** from the list of variables and then click **Ok**. “Iris” will appear in the Horizontal (Group) Variable box.
- Set **Value Labels** to **Value Labels**.

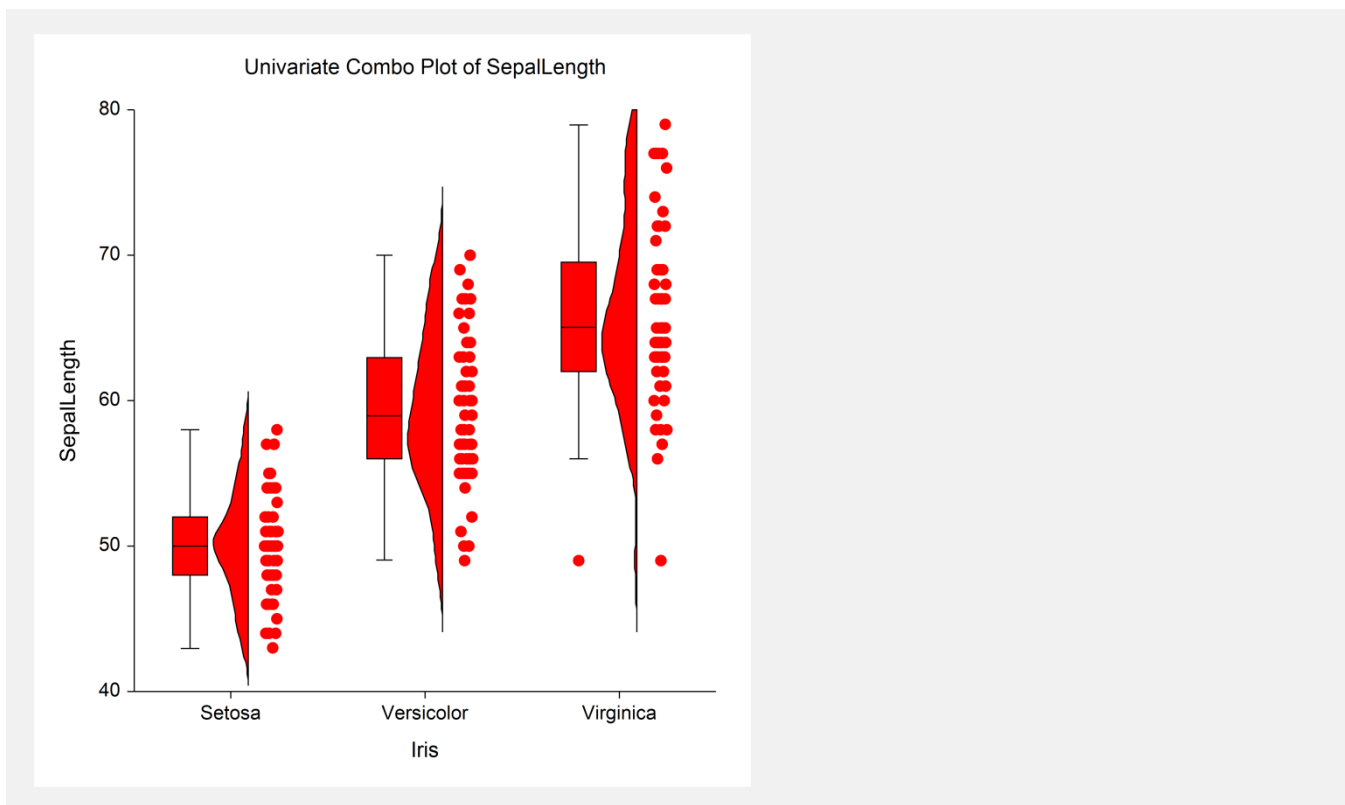
4 Specify the plot types.

- Click on the **Plot Format** button.
- Check the **Box Plot**, **Density Plot**, and **Dot Plot** checkboxes.
- On the **Dot Plot tab**, check the box next to **Jittering**.
- Press **OK**.

5 Run the procedure.

- From the Run menu, select **Run Procedure**. Alternatively, just click the green Run button.

Combo Chart Output



Example 2 – Creating a Combo Chart with Subgroups

This section presents an example of how to generate a combo chart with subgroups. The data used are from the fictitious Tree dataset. We will create combo charts of the *Diameter* variable, grouping on *Species*, with subgroups according to *Sunlight*.

You may follow along here by making the appropriate entries or load the completed template **Example 2** by clicking on Open Example Template from the File menu of the Combo Charts (2 Factors) window.

1 Open the Tree dataset.

- From the File menu of the NCSS Data window, select **Open Example Data**.
- Click on the file **Tree.NCSS**.
- Click **Open**.

2 Open the Combo Charts (2 Factors) window.

- Using the Graphics menu or the Procedure Navigator, find and select the **Combo Charts (2 Factors)** procedure.
- On the menus, select **File**, then **New Template**. This will fill the procedure with the default template.

3 Specify the variables.

- On the Combo Charts window, select the **Variables tab**.
- Double-click in the **Data Variable(s)** text box. This will bring up the variable selection window.
- Select **Diameter** from the list of variables and then click **OK**. “Diameter” will appear in the Variable(s) box.
- Double-click in the **Horizontal (Group) Variable** text box. This will bring up the variable selection window.

Combo Charts

- Select **Species** from the list of variables and then click **Ok**. “Species” will appear in the Horizontal (Group) Variable box.
- Double-click in the **Legend (Subgroup) Variable** text box. This will bring up the variable selection window.
- Select **Sunlight** from the list of variables and then click **Ok**. “Sunlight” will appear in the Legend (Subgroup) Variable box.
- Set **Value Labels** to **Value Labels**.

4 Specify the plot types.

- Click on the **Plot Format** button.
- Check only the **Box Plot** and **Dot Plot** checkboxes.
- On the **Dot Plot** tab, check the box next to **Jittering**.
- Press **OK**.

5 Run the procedure.

- From the Run menu, select **Run Procedure**. Alternatively, just click the green Run button.

Combo Chart Output

