Fit Non-Linear Curve

Use to build non-linear models describing the relationship between an explanatory variable and an outcome variable.

Fit Curve

1. Select **Analyze > Specialized Modeling > Fit Curve**.

2. Select a continuous variable from **Select Columns**, and add to **Y, Response**.

3. Select a continuous explanatory variable for **X, Regressor**

   Add a categorical variable to **Group** to have a separate model fit for each value of a grouping variable (optional). Here we have eight specimens sampled (two from each of four treatments).

4. Click **OK**.

   JMP displays a plot of the response vs. predictor values for all the data, and separate graphs for each group if a grouping variable was used.

   Note: The **red triangle** next to **Fit Curve** displays a collection of non-linear models that can be fit.

   See "Statistical Details for the Fit Curve Platform" in **JMP Help** to see visual representations for different families of nonlinear models to help choose an appropriate one for your data.

   The 4-parameter logistic sigmoid model was chosen here. Additional models can be fit and compared.

5. Select **Custom Inverse Prediction** under the **red triangle**. Insert values for the response variable (*Algae Density*) to produce predictions and corresponding confidence intervals for the value of the predictor variable (*Days*) estimated to result in a given amount of the response variable. Here we chose an Algae Density of 2.

   JMP displays **predicted values** and **confidence intervals** for the explanatory variable. An **Analysis of Means** graph comparing these predictions across groups is produced if a grouping variable was used.

   Additonal options, such as **Actual by Predicted** and **Residual by Predicted plots**, **Save Prediction and Residual Formula**, are under the **red triangle** for each fitted model.

Algae Mitscherlich.jmp (Help > Sample Data Folder > Nonlinear Examples)
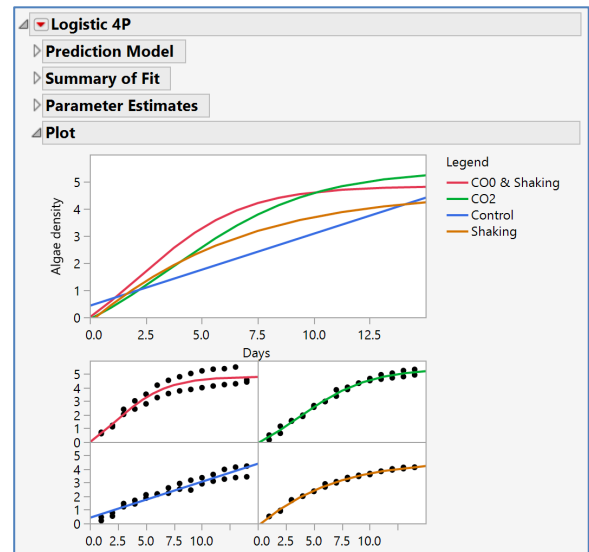
Predicted Values

Treatment	Specified Algae density	Predicted Days	Std Error	Lower 95%	Upper 95%
CO0 & Shaking	2.000000	2.903899	0.1980256	2.515775	3.292022
CO2	2.000000	3.931452	0.2135886	3.512826	4.350078
Control	2.000000	5.883760	0.2415910	5.410250	6.357270
Shaking	2.000000	3.890527	0.2770854	3.347449	4.433604
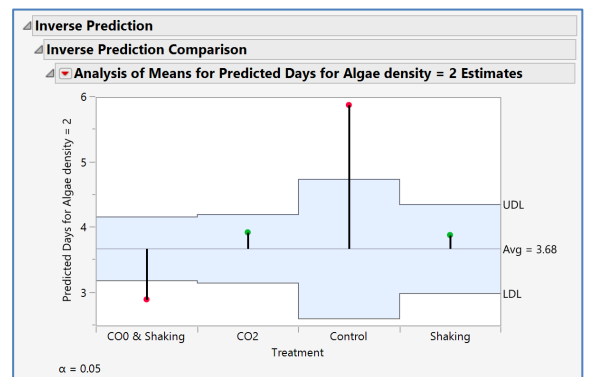
Visit **Predictive and Specialized Modeling > Fit Curve** and **Nonlinear Regression** in **JMP Help** to learn more.