

Running a Kruskal-Wallis test with XLSTAT

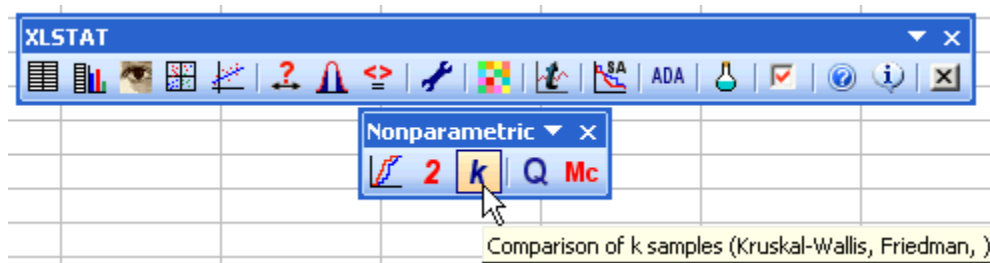
[demoKruskal.xls](#)

Dataset for running a Kruskal-Wallis test

An Excel sheet with both the data and the results can be downloaded by clicking [here](#). The data correspond to a sensory analysis where 10 experts have been asked to rate during two separate blind sessions the hardness of four different cheeses, on a [0->5] scale. In the tutorial on the Friedman's test we considered that the same 10 experts rated the four cheeses (the data were paired because of that). Here, we consider that different experts rated the cheeses. Our goal is to determine if the difference in hardness between the cheeses is significant or not.

Setting up a Kruskal-Wallis test

Once XLSTAT-Pro is activated, select the **XLSTAT / Nonparametric tests / Comparison of k samples** command, or click on the corresponding button of the **Nonparametric test** toolbar (see below).



Once you have clicked on the button, the dialog box appears. Activate the **One column per sample** option first, then click in the **Samples** field, and select the data on the Excel sheet: select with the mouse the 4 columns of data corresponding to the 4 cheeses (or samples, or treatments).

As the cheeses names are included in the first row of the selection, leave the **Column labels** option checked.

Then activate the **Multiple comparisons** option and the **Bonferroni** option, so that if the hypothesis that the cheeses are the same is rejected, we may identify which cheeses are different.

Multiple pairwise comparisons using the Dunn's procedure / Two-tailed test:

Sample	Frequency	sum of rank	mean of rank	Groups	
Cheese2	10	118,500	11,850	A	
Cheese1	10	164,000	16,400	A	
Cheese4	10	212,000	21,200	A	B
Cheese3	10	325,500	32,550		B