Data analysis in Excel using 'Data Analysis' Tool

Analysis of a series of data to know the mean, standard deviation, standard error, sum, variance and other measures, can easily be done using Excel's 'Data Analysis' tool. This tool is located in the Tools menu. But you have to look if it is there. If not, then get it first. Follow:

- go to Tools, then Add-Ins
- in the Add-Ins window, select Analysis ToolPak.

Analysis ToolPak provides the necessary functions for data analysis.

Now let's do an exercise.

Let's say that we have results from two plants for chromium (Cr) concentrations. One plant group is *Brassica napus* or rapeseed and the other group is *Urtica dioica* or stinging nettle.

	A	B	C
	Sample no	Cr conc. in *B.napus* (mg/kg)	Cr conc. in *U.dioica* (mg/kg)
	1	10.8	33.5
	2	22.5	46.8
	3	11.0	56.2
	4	20.2	39.6
	5	35.1	60.2
	6	28.6	66.4
	7	12.7	50.0
	8	21.4	49.3
	9	34.3	39.0
	10	17.4	45.7

Figure 1. Data from two groups of plants

- now go to Tools, then Data Analysis.

Data Analysis window will open.

- Choose Descriptive Statistics.

Descriptive Statistics window will open. In the Descriptive Statistics window, there are two options – input and output options.

- In the input option, you need to define the range of your data you want to analyse in Input Range.

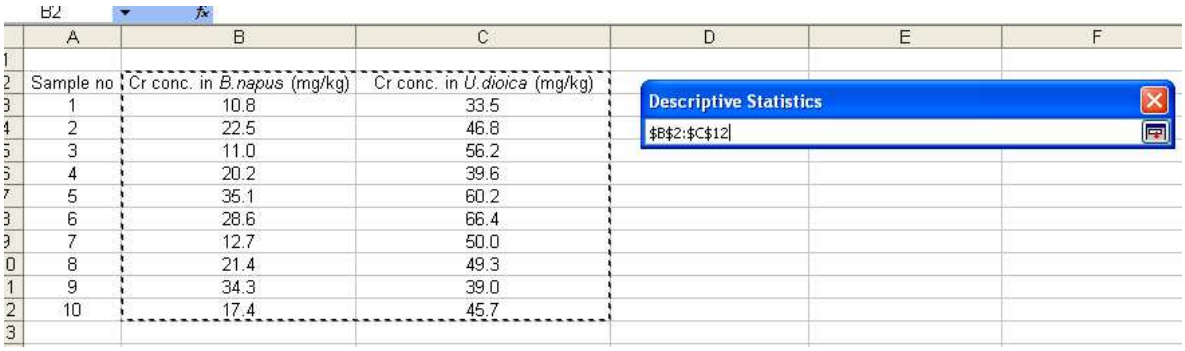

Figure 2. Selected data range as input for analysis

- check Labels in first row, this will show the labels in the output.

Now the output option,

- In the Output Range, define any cell or range of cells where the output will be displayed. Here we choose only one cell. Results will automatically take the cells and space it require.

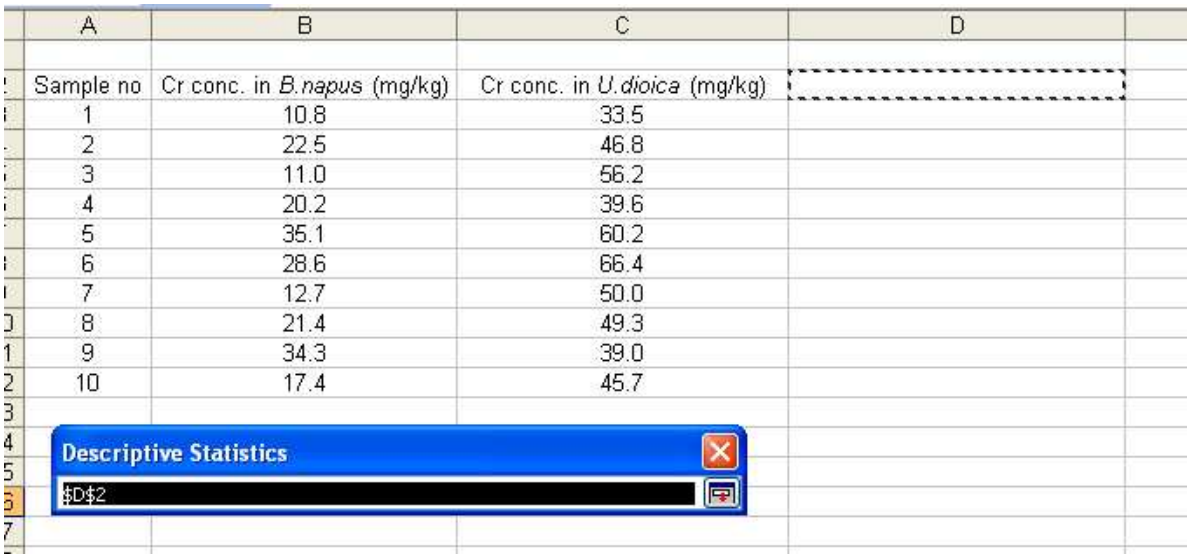

Figure 3. Defining Output Range. In this case selecting one cell is enough.

- now check Summary statistics. Your Descriptive Statistics window should look like this:

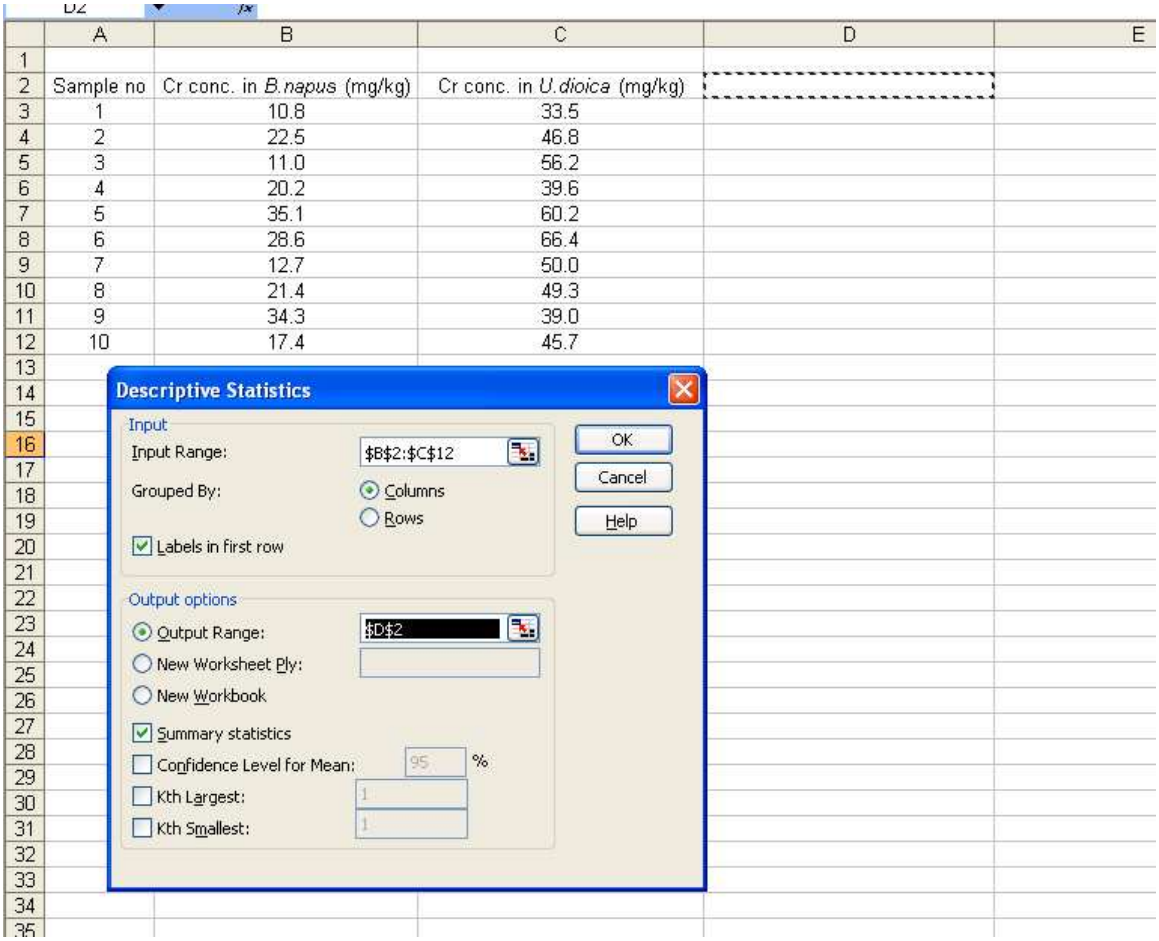

Figure 4. Descriptive Statistics window.

- now OK.

You will have the results beginning from the cells of your Output Range.

	D	E	F	G	H
	Cr conc. in *B.napus* (mg/kg)		Cr conc. in *U.dioica* (mg/kg)		
	Mean	21.4	Mean	48.67	
	Standard Error	2.829998037	Standard Error	3.204824488	
	Median	20.8	Median	48.05	
	Mode	#N/A	Mode	#N/A	
	Standard Deviation	8.94923957	Standard Deviation	10.13454488	
	Sample Variance	80.08888889	Sample Variance	102.709	
	Kurtosis	-1.075492683	Kurtosis	-0.444115325	
	Skewness	0.397735524	Skewness	0.315119822	
	Range	24.3	Range	32.9	
	Minimum	10.8	Minimum	33.5	
	Maximum	35.1	Maximum	66.4	
	Sum	214	Sum	486.7	
	Count	10	Count	10	

Figure 5. Output of the data analyzed.

Now you are done ☺ .

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