

MS Excel – Regression and Correlation Analysis

Example:

Find out whether a correlation between body weight and egg weight exists in layers. In a sample of 10 layers following body weights (in kg) were measured:

2.2, 1.8, 2.1, 1.7, 2.4, 2.0, 2.0, 1.9, 2.3, 1.9

In these layers following egg weights (in g) were measured (average value from 10 eggs):


41, 36, 40, 36, 42, 39, 40, 37, 41, 38.

Calculate basic statistical parameters (AVG, SD) in each sample, calculate correlation coefficient and figure a chart of linear regression (with trendline equation) of the relation between these sample data.

1. Type data into the table:

	A	B	C
	Layer No.	Body Weight [kg]	Egg Weight [g]
1			
2	1	2.2	41
3	2	1.8	36
4	3	2.1	40
5	4	1.7	36
6	5	2.4	42
7	6	2	39
8	7	2	40
9	8	1.9	37
10	9	2.3	41
11	10	1.9	38
12	AVG	2.03	39
13	SD	0.22136	2.16025
14	Correlation Coef.	0.95266	

2. B12:B13 and C12:C13 cells: Calculate basic statistical parameters (AVG, SD)
3. Calculation of a **correlation coefficient**: B14 cell: **Insert Function(fx) – Statistical – CORREL** (in Array1 mark B2:B11 cells, in Array2 mark C2:C11 cells)
(it's good to merge B14 and C14 cells to display the result in a better way – *correl.coef. belongs to both columns – describes power of their relation*)

4. **Chart:** Mark B2:C11 cells, then menu **Insert – Scatter – Scatter with only Markers**.
5. Through  in the corner of the marked chart: add **Chart Title**, **Axis Titles** (retype appropriate text – beware of which data are on which axis!). It is possible to change **colour, type and size of points** (with right button of the mouse on some point – menu **Format Data Series**).
6. Right button (mouse) on some point in chart figured: menu **Add Trendline – Type: linear**, tick **Display equation on chart**. It is possible to change **Line Color, Type and Width** (with right button of the mouse on the trendline – menu **Format Trendline**).

