# Excel Practical 1: basics of calculation and graphics with Excel

## Part 1: summarizing data

Tasks:

1. Load in the data file data\_sets.xlsx provided to you as part of the course material
2. For each data set in turn:
   1. Identify which are the variables and which are the observations
   2. Use the COUNT function to get the sample size
   3. Have a think about what the parameters could be for the questions of interest (see class 1 slides 3 to 5), think about what statistics we might use to estimate these parameters (you don’t have to answer these questions of interest, just think about how the data might help answer them)
   4. Use the AVERAGE, MEDIAN, and QUARTILE.INC functions to get the mean, median, and quartiles (note for this function use 1 or 3 to get the first and third quartiles) of the variables
   5. Create a copy of the data and try playing around with some of the values to make them more extreme. Note the effect on the mean, median and quartiles
   6. Use the MAX, MIN, STDEV.S, and QUARTILE.INC functions to get the range, standard deviations, and interquartile range of the variables
   7. Repeat step e above but this time look at the effect on the estimates from step f

## Part 2: plotting data

Leave data set 1 for the moment as we will cover histograms in practical 2

1. Start with data set 2. Create an X-Y (scatter plot) with expression on the horizontal axis and breeding value on the vertical axis. Make sure to labels the axes (you can even add a trend line by right-clicking on the points)
2. (Harder) With data set 3, see if you can create a boxplot which shows the variability between runs, replicates, or fortifications. You might have to do a little bit of playing around with the data – I couldn’t get a boxplot to work in Excel for Mac so see if you can find a way. Again make sure to use colours, grid lines, axis labels, etc, to make the plot as clear as possible.