**One-way analysis of variance**

One-way analysis of variance looks to see how much of the variation in grouped data comes from differences between the groups, and how much is just random observational error. There can be any number of groups, that may be of different sizes (each group with at least two observations).

A typical application of one-way analysis of variance would be to investigate whether three different types of growing conditions make any difference to the yield of an agricultural crop, and if so, how great those differences are. The observations would be the yields of many different experimental plots, grouped according to the growing condition that applied to them.