Chapter 8 Experiments with several factors (factorial designs)

Additional self-test questions

Q8.1 A new food supplement has been produced to enhance growth in farmed fish. You are tasked with identifying whether this supplement is more effective commercially in sea trout or rainbow trout. How would you go about this?

Q8.2 Can you imagine a circumstance where a split-plot design would be useful in zoology?

Q8.3 What do people mean by a fully crossed design?

Q8.4 Explain the concept of an interaction between a factor and a covariate by way of an example.

Q8.5 We predict that a given dietary regime will lead to greater weight loss in women than men. We randomly allocate individuals to one factor, 'diet', with two levels, dietary regime or control group experiencing no change, and for each individual note their sex (another factor 'sex' with two levels). In our statistical analysis we find that the interaction between these two factors is significant; does that provide evidence in support of the original prediction?

Q8.6 In the experiment of the last question, can we be sure that the effect we find is due to sex or might it be due to some factor that is linked to sex?

Q8.7 Explain the attractions and drawbacks of split-plot designs in your own words.

Q8.8 Explain the attractions and drawbacks of Latin square designs for three-factor studies in your own words.

Q8.9 Discuss what we mean by data recorded on an ordinal scale.

OXFORD Higher Education

Oxford University Press