

EXST7015 : Daily Design Question 02

Carefully read the description of the experiment below. Be prepared to answer the questions that follow the design description as a class quiz.

A researcher in aquaculture wants to examine the possibility of substituting oil-seed vegetable meal for a fraction (75%) of the fish meal usually present in Tilapia feed. The alternative oil-seed meals were derived from seeds of the following: soybean, sunflower, peanut, roselle, cottonseed, Benneseed (Sesame seed) and winged bean (Macadamia nut). Fish meal was used as a control.

The experiment consisted of establishing two replicate tanks for each of the 8 diets (16 tanks in all). Each tank contained 20 Tilapia that were fed to apparent satiation twice daily (09.00 h, 16.00 h) for 70 days. The investigator measured a number of variables, but we are interested only in the total weight gain of the 20 fish in each tank over the 70 days. This will be our variable of interest.

Diet	WG2(%)	Duncan's Groupings
Menhaden fish meal	303.7	a
Soybean meal	282.7	a
Sunflower meal	274.1	b
Peanut meal	213.6	c
Roselle seed meal	217.3	c
Benneseed meal	250.6	b
Cottonseed meal	223.5	c
Winged bean meal	279.0	ab

Questions:

What is the treatment arrangement for this experiment?

- (a) single factor (b) factorial (c) nested

What is the experimental design for this experiment?

- (a) CRD (b) RBD (c) LSD (e) Split-plot (d) Repeated Measures

Does it seem to you that the treatments are fixed or random?

- (a) fixed (b) random

What is the experimental unit for this experiment?

- (a) a fish (b) tank (c) weight gain (d) oil-seed meals (e) fish meal

What is the sampling unit for this experiment?

- (a) a fish (b) tank (c) weight gain (d) oil-seed meals (e) fish meal

What is the dependent variable for this experiment?

- (a) a fish (b) tank (c) weight gain (d) oil-seed meals (e) fish meal

If the design is RBD, what are the blocks?

- (a) a fish (b) tank (c) weight gain (d) oil-seed meals (e) fish meal

How many degrees of freedom are available for testing the treatments?

Enter the correct value here: _____