EXST7015 : Daily Design Question 05

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

In one part of this large study the investigator raised 64 pigs in the following arrangement. The design described is modified from the original, but is consistent with the table below. There were 32 pens available that were randomly assigned piglets of one of the two sexes and one of the two dietary treatments of 0 or 200 ppb CrP added to standard corn-soybean meal diets. There were eight replications of the two pigs per pen for each combination of sex and diet.

At the end of the experiment the final weight was subtracted from the initial weight and a mean obtained for each of the 64 pigs in the 32 pens. The mean daily weight gain per pen is the variable of interest.

Table 4. Least squares means of chromium picolinate x sex effects on growth performance in pigs.

Variable	Chromium picolinate, ppb					
	0		200			
	Sex		Sex			
	Barrows	Gilts	Barrows	Gilts	SEM	P-Value
Final wt, kgb	111.8	103.9	110.6	102.9	1.0	.90
Daily gain, g/day	895.5	810.4	884.0	802.0	11.4	.90
Feed intake, g/day	2749.7	2460.6	2748.1	2421.8	33.5	.59
Gain/Feed	.33	.33	.32	.33	.004	.48

a. Pen means (n = 64).
b. Represents the final average pen weight measured at the farm.
Note: Barrows are male swine and Gilts are female swine.

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 pen   (b) a pig   (c) sex   (d) daily weight gain   (e) diet**

What is the sampling unit for this experiment?

> **(a) a pen   (b) a pig   (c) sex   (d) daily weight gain   (e) diet**

What is the dependent variable for this experiment?

> **(a) a pen   (b) a pig   (c) sex   (d) daily weight gain   (e) diet**

If the design is RBD, what are the blocks?

> **(a) a pen   (b) a pig   (c) sex   (d) daily weight gain   (e) diet**

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

> **Enter the correct value here: _____**