

EXST7015

Daily Design 3

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

The effect of sulfur additions on Bermudagrass yield and nutrient levels of harvested forage was examined in a field study. The study was done in 2006 and 2007 on a Staser silt loam about 30 miles north of Nashville. Four Bermudagrass fields were used in the study. Each field was divided in two plots. All plots received additions of P, K and N according to soil test recommendations. Sulfur was applied at a rate of 22.4 kg S/ha to one plot in each field and at 44.8 kg S/ha to the other. Forage was harvested in 91 cm swaths through each plot at a height of 10.2 cm. The swaths were of equal length in each plot and the total harvest of bermudagrass was recorded.



Representative samples were also obtained for dry matter and nutrient analysis.

For our purposes of interest is the total harvest (kg) of Bermudagrass in the 91 cm equal length swath through each plot. The two levels of sulfur addition are to be compared for this variable.

Statistical analysis revealed there was no significant yield response to S applications ($P < 0.05$). There were no significant effects of S on nutritional quality measurements of NDF, ADF, P, K, Ca, Mg, Mn, Zn, S or TDN with the exception of copper (Cu), which showed a highly significant ($P < 0.01$) decrease in levels as S rate increased.

Answer choices:	(A) plot	(B) sulfur addition	(C) additions of P, K and N
	(D) fields	(E) total harvest	(F) cows

Name _____ Quiz Number _____ Date _____ / _____ / 2012

Circle the appropriate letter for each question below.

- 1) What is the experimental unit for this experiment? A B C D E F G
- 2) What is the sampling unit for this experiment? A B C D E F G
- 3) What is the dependent variable for this experiment? A B C D E F G
- 4) What is the treatment variable for this experiment? A B C D E F G
- 5) If the design is RBD, what are the blocks? A B C D E F G NA
- 6) Does it seem more likely that the treatments are fixed or random? (A) fixed (B) random
- 7) What is the treatment arrangement for this experiment? (A) single factor (B) factorial (C) nested
- 8) What is the experimental design for this experiment? (A) CRD (B) RBD (C) LSD (D) Split-plot (E) Repeated measures
- 9) The degrees of freedom for testing treatment are _____ .
- 10) The degrees of freedom for the error used for testing treatments are _____ .