

Agronomy 526 Homework

Due: 3/1/22

1. An agronomist wants to evaluate the response of commercial corn hybrids to plant population. The goal is to identify the optimum population for the hybrids marketed in the area. Since it would be an unreasonably large experiment to include all available hybrids, ten will be randomly chosen to represent the population.

The proposed experiment uses a completely random design (CRD) with four replications. Treatments include ten hybrids (H) planted to five populations (P). All treatments are to be in factorial combination.

- a. Diagram a layout for the experiment that shows the relationships among the treatment factors.
- b. Write the linear additive model for the experiment and describe each term in the model.
- c. Using the algorithm described in your lecture notes, write the expected mean squares for the experiment.
- e. Construct an ANOVA table with “Source”, “df”, and Expected Mean Square” as column headings.
- f. Based on the expected mean squares, indicate the correct error term to use for testing the population main effect and its interaction with hybrid.