

HOMEWORK #7

Due MON OCT 20

Background for #1-3. Large chicken farms (e.g., 10,000 birds per barn) supplement standard chicken feed but require efficiency (greater weight per unit supplement). Chickens were randomly selected and fed 1 of 6 supplements (in the same amounts). Birds were weighed before and again 6 weeks later for weight gained (grams; chickwts.txt data set on the course web site).

1. [2 pts] Test assumptions and conduct an ANOVA for the hypothesis that different chicken feeds caused different weights of chickens. Show a residuals plot of your model.
2. [2 pts] Present a graph of mean weights with 95% confidence intervals, and interpret that graph in light of the ANOVA results, with a recommendation to Farmer Jones on which feed(s) to use.
3. [1 pts] What was the power of the chicken feeds experiment?

Background for #4-6. Plants are often thought to respond to grazing by producing more fruits. But larger plants also produce more fruit. To account for plant size, clever researchers include plant size (here root dry mass) in analyses. The plant *Ipomopsis* was used in an experiment, where “grazed” plants were trimmed with scissors and compared to ungrazed plants for subsequent grams of fruit produced.

4. [2 pts] Test assumptions and analyze the ipomopsis.txt data set to evaluate the hypothesis that grazing stimulates fruit production. Show a residuals plot of your model.
5. [2 pts] Explain your results, including a graph of mean weights with 95% confidence intervals.
6. [1 pts] What was the power of the grazing experiment?