

Bugsville Worksheet

Assessing the variation in spot number

1. In the space below, sketch—don't copy in detail—the histogram showing the distribution of spot number in your starting Left Field population. Record the average number of spots: _____

Estimating the heritability of spot count

2. Record your data on parents and offspring for the matings you set up in the table below. When you feel you have an accurate estimate of the heritability of spot count, sketch—don't reproduce in detail—your scatterplot in the space at right. Record your estimate for the heritability of spot count: _____

Family number	Parent 1	Parent 2	Midparent	Offspring 1	Offspring 2	Midoffspring
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

Set up a selection experiment and calculate the selection differential

3. In the space below, sketch your histogram showing the distribution of spot counts among your selected parents. Record the average number of spots among your selected parents: _____

Calculate and record the selection differential for your selection experiment:

Predict the response to selection

4. Multiply your estimate of the heritability of spot count by the selection differential to predict the response to selection for your experiment:

Run your selection experiment and compare your predicted response to the actual response

5. Run your simulation for 200 days. In the space below, sketch your histogram showing the distribution of spot counts among the offspring of your selected parents (this is your current Right Field population). Record the average number of spots among the offspring of the selected parents : _____

Calculate and record the actual response to selection for your experiment:

6. How accurate was your prediction? If it was not accurate, try to figure out why.

Write a brief discussion, as might appear at the end of a lab report

