HOS 4932/HOS 6932 Weed Management for Organic and Sustainable Cropping Systems

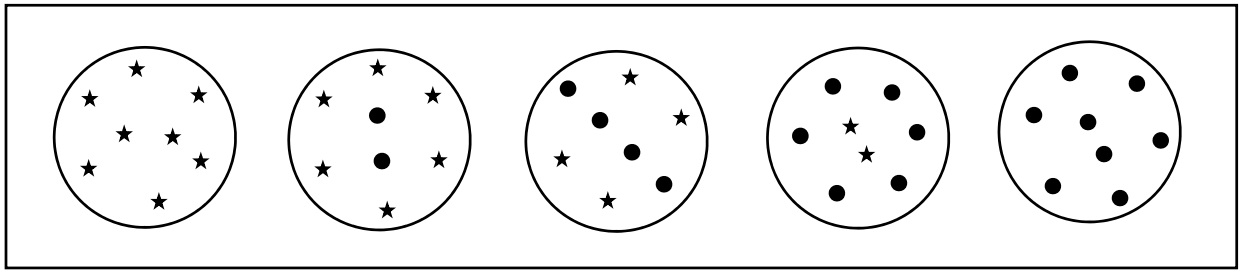
Greenhouse Laboratory Exercise

Table 1. Laboratory groups for set up and data collection

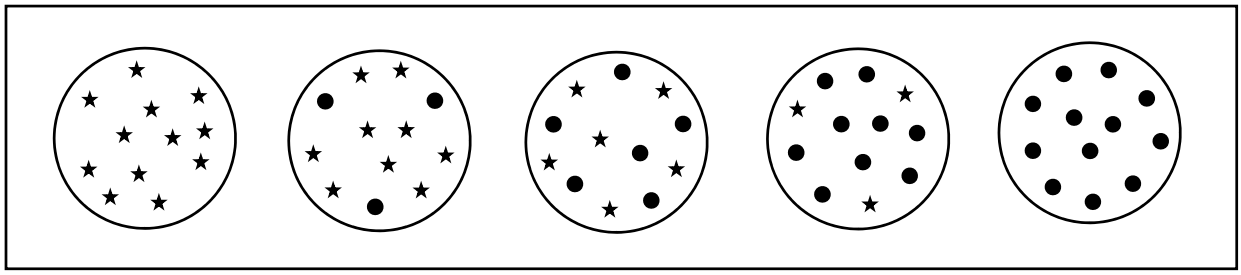
Group 1	Group 2	Group 3
Eli Chase	Elizabeth Barrido	Kristin Balko
Sophia Gibaldi	Alexis Espinosa	Rachel Crawley
Daniel Jewett	Lane Harris	Melanie Grimmett
Rebecca Rabinowitz	Gabrielle Nease	Alec McCloud
----	Daniel Zaman	Hannah Westergaard
Yao Mu	John Bonkowski	Abdulhakeem Baitsaid

1. Each group is assigned 15 pots.
2. Fill the pots with soil and water to moisten the soil through the pots.
3. Plant *Crotalaria juncea* and *Crotalaria ochroleuca* seeds approximately 2-cm deep according to the designs outlined below.

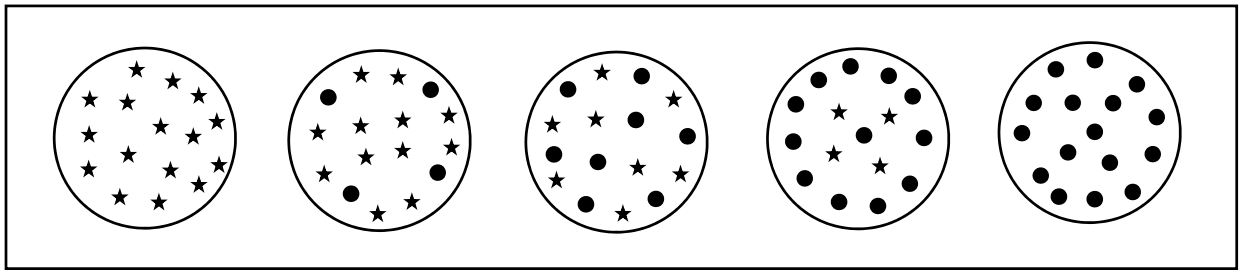
Group 1



Group 2



Group 3



4. Repeat so that you have 3 replications of each of the 5 treatments.
5. Label and randomize the pots as indicated in Table 2.

Table 2. Arrangement of pots of each group in a completely randomized design

Group 1	T5	T2	T4	T1	T1
	T3	T4	T4	T3	T2
	T5	T2	T3	T1	T5

Group 2	T1	T1	T2	T2	T5
	T3	T5	T5	T2	T4
	T4	T1	T4	T3	T3

Group 3	T4	T5	T3	T2	T1
	T4	T2	T3	T4	T1
	T5	T2	T1	T3	T5

6. Check in 3 to 5 days to ensure you have emergence. Use scissors to trim extra plants at soil level.
7. Measure the heights of 2 plants of each species per pot at 2, 4, and 6 weeks after planting.
8. Harvest each species per pot at soil level at 6 weeks after planting. Place each species in separate paper bag and place in a forced air drying oven until dry.
9. Weigh the dried shoots to obtain shoot dry biomass.
10. Calculate plant height and shoot biomass means for each treatment. Each student should obtain the raw data from each experiment.
11. Each student should individually determine the relative yield and the relative yield total for each species based on shoot dry biomass.
12. Graph the data and interpret the results and complete a report with the following format.
    - Title – Provide an appropriate title that is relevant to the exercise
    - Introduction – Should provide a problem statement, background information from the scientific literature on previous related work, and objective/s of the study.
    - Materials and Methods – Procedure written in paragraph style.
    - Results and Discussion – Figures with appropriate labeling and captions. Presentation of the key findings in paragraph form. Interpret and discuss the results in relation to the objective/s and previous research mentioned in the introduction. Conclusions.