



Rift Valley Fever

STEM Sims

Lesson 4: Drought and Pesticide

If the rainfall is at drought level, there should be very few mosquitos. If the pesticide is then administered at a very high level, would this kill almost all the mosquitoes and almost eliminate RVF cases? Test this theory to find out.

Doing the Science

1. Start the Rift Valley Fever Simulation by clicking on the “Sim” tab.
2. Click and drag the “Rainfall” slider so that it lines up with “Drought.”
3. Click and drag the “Pesticide” slider so that it lines up with “Max.”
4. Click on the “Sample Mosquitos” button and note which mosquitos are plentiful and which are scarce. Click “Close” when you are done.
5. Note and record in Table 1 the current population of sheep in the “Initial Population” column. (It should be 6000.)
6. Click the “Run” button. Let the simulation run until it stops when it reaches December.
7. Record the new population of sheep in the table in the column labeled “New Population.”
8. Click the “Reset” button. Click and drag the “Rainfall” and “Pesticide” sliders to the halfway position so that they line up with “Medium.”
9. Repeat steps 4-7.
10. Click the “Reset” button. Click and drag the “Rainfall” button to the “Flood” position.
11. Click and drag the “Pesticide” button to the “Min” position.
12. Repeat steps 4-7.
13. For each trial, subtract the Initial Population from the New Population, and write this number in the “Change in Population” column. Note that if there are less sheep when you finish than when you start, your answer will be negative.

Table 1

Trial	Rainfall Level	Pesticide Level	Initial Population	New Population	Change in Population
1	Drought	Max			
2	Medium	Medium			
3	Flood	Min			

Do You Understand?

1. How did the final population count compare with the final population counts of other methods used to reduce RVF?

2. Was the hypothesis in the introduction correct?