



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Gary J. Lent	Project Number J1917
Project Title The Sowbug's Dilemma: Shelter, Shade, or Swamp?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Sowbugs (<i>Oniscus asellus</i>) are known to seek (1) hiding places, (2) darkness, and (3) dampness. I wondered what a sowbug would do if forced to choose between two things it likes. Sowbugs breathe through gills, so I hypothesized that their favorite would be dampness. Hiding places (providing protection from predators) seemed a likely second choice, leaving darkness in last place.</p> <p>Methods/Materials I built a 3-room structure (Entry Room, Room 1, and Room 2), using three 90 mm Petri dishes interconnected by doorways. Rooms 1 and 2 each contained a different benefit: a hiding place, darkness, or dampness. (In control runs, the rooms could contain matching benefits or no benefit.) Twenty sowbugs started in the Entry Room. At twenty 1-minute intervals, I counted sowbugs in each room. I compared percentages of sowbugs that migrated to Rooms 1 and 2, to determine which of the benefits the sowbugs preferred.</p> <p>Results Dampness was the sowbugs' least-favored choice, with only 35.0% choosing dampness over darkness or hiding places. Darkness (58.4%) and hiding places (56.6%) were almost equally preferred. (The percents add up to more than 100% because I only compared two benefits at any time.)</p> <p>Conclusions/Discussion My results contradicted my hypothesis, since I had predicted that dampness would be the most popular. That was surprising, because sowbugs need moist gills to breathe. After my main experiments, I developed improved versions of a hiding place and dampness, and tested to verify that the sowbugs do prefer the new versions. Then I did a few test runs with these improved benefits, getting similar overall results to those with the original benefits. More testing with the new benefits might give different results in the long run. Understanding sowbugs' relative preferences could help us modify their environment to control their population in ways useful to agriculture and recycling.</p>	
Summary Statement When sowbugs are forced to choose among hiding places, darkness, and dampness, more of them choose hiding places and darkness than choose dampness, a preference that might be useful in controlling sowbug populations.	
Help Received This project was my idea, based on my interest in sowbugs and Internet research showing what attracts them. My father helped me design my experiment, find supplies, and watch the timer while I counted sowbugs. My mother helped me paste up the poster.	