



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> Noah P. Elhardt	<b>Project Number</b> <b>S1605</b>
<b>Project Title</b> <b>Plant Tissue Culture of <i>Dionaea muscipula</i>: Testing Alternative Media Supportive Materials</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Plant tissue culture is a method of plant propagation in which plant tissue growth is controlled in a sterile, nutrient-rich environment. Traditionally, the nutrient media used in tissue culture have been supported by agar, which prevents the plantlets from drowning in the medium. The purpose of my experiment was to test whether other media supportive materials - cotton, perlite, peat moss, peat moss/perlite 50/50, and vermiculite - would lead to increased germination and growth of venus fly trap (<i>Dionaea muscipula</i>) seeds in tissue culture.</p> <p><b>Methods/Materials</b> 10 cultures were prepared with each of the media supportive materials mentioned above, as well as 10 cultures using agar as a control. All 60 cultures contained identical amounts of identical nutrient media. Each culture received three venus fly trap seeds for a total of 30 seeds per test group, and the cultures were subsequently placed under grow lights. After a period of 130 days, the germination rate for each test group was determined, and all plantlets were measured. Growth was evaluated by calculating the averages of the longest root and leaf of the plantlets in each test group, and of the total number of mature leaves per plantlet in each test group.</p> <p><b>Results</b> My results showed that peat moss, peat/perlite, and cotton showed significantly better germination and growth than the agar control group, while vermiculite and perlite did not.</p> <p><b>Conclusions/Discussion</b> The results indicate that my hypothesis was partly correct, in that three of the five alternative substances tested resulted in higher production. These results could be relevant to commercial plant tissue culture, where low cost and high production are important.</p>	
<b>Summary Statement</b> I tested five media supportive materials and compared them to the traditionally used agar in terms of germination and growth of <i>Dionaea muscipula</i> in tissue culture.	
<b>Help Received</b> Parents helped proofread and edit abstract, report; Brother served as extra pair of hands while placing seeds in cultures.	