



CALIFORNIA STATE SCIENCE FAIR 2009 PROJECT SUMMARY

Name(s) Riley K. Adams	Project Number J2301
Project Title Experimental Methods of Eradicating Invasive Pampas Grass	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Pampas Grass, <i>Cortaderia selloana</i>, is an invasive plant originally from South America. It is causing problems along the California coast, including areas of coastal sage scrub. There are over 1,500 acres of Pampas Grass from San Diego to Santa Barbara. Pampas Grass is a difficult plant to remove. The plants are very large and have sharp leaves. The entire plant must be dug up or sprayed with an herbicide. My yard is filled with Pampas Grass. I wondered if I could find alternative ways to remove Pampas Grass that might be environmentally friendly and involve less labor. I tested four methods of eradication.</p> <p>Methods/Materials I sprayed some mature <i>selloana</i> plants with vinegar which is 5% acetic acid. I sprayed another group of <i>selloana</i> plants with Round-Up, a commonly used herbicide. The third method I tried was my own idea. I used an opaque tarp to cover the plants in order to block sunlight and inhibit photosynthesis. Finally, I tried a method I had heard used with other plants. I applied dry ice to freeze the roots and kill the Pampas Grass. I tested and photographed the 35 experimental plants for five weeks.</p> <p>Results After one week of testing, plants treated with dry ice appeared most withered. After two weeks, it appeared the plants treated with vinegar were turning brown quickest. On the third week of testing, the Round-Up seemed most effective in destroying Pampas Grass. After four weeks of testing were completed, I pull two experimental plants from each group to see how each treatment had affected the roots. I used a cable and a truck to remove the plants and recorded how difficult it was to pull each plant. I removed the rest of the experimental plants after five weeks. Plants treated with dry ice were easiest to remove, followed by Round-Up treated plants, the vinegar, and last, the tarp method.</p> <p>Conclusions/Discussion Using Round-Up or dry ice seemed to work best in eradicating the Pampas Grass in this experiment. In watershed areas where Round-Up is not allowed, an operator's license is required to spray Aqua-Master to eradicate the plants. This is an expensive process. Dry ice applications might serve as an alternative method of eradication. Vinegar or tarps might even work on smaller <i>selloana</i> plants.</p>	
Summary Statement The goal of this project was to explore a variety of methods for eradicating invasive <i>Cortaderia selloana</i> , Pampas Grass, and compare the results for suggested methods to methods which were my own ideas.	
Help Received My parents and brother helped me prepare the plants for experimentation as well as help me pull the plants out of the ground. I interviewed and had questions answered by Amy Trujillo, from the San Elijo Lagoon Conservancy regarding Pampas Grass. I received guidance with my report and identifying native	