



**CALIFORNIA SCIENCE & ENGINEERING FAIR
2019 PROJECT SUMMARY**

Name(s) Ashley Schletewitz	Project Number S1525
Project Title Evaluation of Equisetum hyemale Extract as an Alternative Chemical for the Control of Penicillium italicum on Citrus	
<p style="text-align: center;">Abstract</p> <p>Objectives The objective of this study is to evaluate if Equisetum hyemale can inhibit the growth rate of Penicillium italicum on citrus fruit.</p> <p>Methods Bleach all oranges and containers in 10% bleach solution. Place 4 oranges in each of the 12 containers, splitting them up by Equisetum hyemale concentration. Puncture each orange in the center, spray concentrations of Equisetum hyemale and inoculate with Penicillium italicum. Observe and record growth of Penicillium italicum every 2 days. Continue over the course of 16 days. Record results in data book *Cultured fruit was disposed of by professor</p> <p>Results The oranges containing 130.4 mg/ml of Equisetum hyemale extract was the most effective at inhibiting the growth of penicillium italicum.</p> <p>Conclusions Equisetum hyemale does decrease the growth rate of Penicillium italicum, because the results showed that the 130.4mg/ml of Equisetum hyemale decreased the growth the most, but the 195.6 mg/ml seemed to increase the growth. This shows that there may be a point when the fungus becomes immune to the Equisetum hyemale, and starts to feed off the Equisetum hyemale causing it to grow more rapidly.</p>	
Summary Statement I discovered a natural organic solution to a destructive citrus fungus that could potentially save the agriculture industry millions yearly.	
Help Received Dr. Themis J. Michailides supervised me during project testing.	