



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Emma C. Williams	Project Number J1937
Project Title Does Treating Soil with Vinegar to Kill Vinca minor Decrease the Future Growth of Native Plants?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Does treating soil with vinegar to kill Vinca minor decrease the future growth of native plants? I predict that the seeds planted in vinegar treated soil will have little or no difference in weight compared to plants grown in untreated soil.</p> <p>Methods/Materials Flats of Vinca minor (V. minor) were separated into four equal sections also a flat of plain soil was divided into two equal sections. Each section of V. minor and soil was labeled. Everyday for six days I sprayed the sections, "vinegar (vinca)", "vinegar and pull (vinca)", and "vinegar (soil)". After 6 days of vinegar spraying I pulled the V. minor from the sections, "pull (vinca)" and "vinegar and pull (vinca)". I planted equal amounts of a mixture of native seeds in these areas: "vinegar (soil)", "no vinegar (soil)", "pull (vinca)", and "vinegar and pull (vinca)". For 14 days I watered the seedlings and move them inside on cold nights. After the 14 days I pulled the seedlings out of the soil, including roots. I weighed the seedlings on a scale.</p> <p>Results The seedlings from the soil that had V. minor and had been pulled weighed 37.44 grams(g), the seedlings that were planted in soil where the vinegar sprayed V. minor was weighed 47.61g. The seedlings from the soil that had been sprayed with vinegar weighed 110.24g, the seedlings that were grown in plain soil weighed 115.91g.</p> <p>Conclusions/Discussion My hypothesis was incorrect for seeds grown in untreated potting soil. Plants weighed 5.67 grams more than the plants grown in potting soil that had been treated with vinegar. My hypothesis was correct for the soil where V. minor had previously been planted, the seedlings that were in the soil of vinegar treated V. minor weighed 10.17 more grams than the native seedlings that were planted in soil where V. minor had simply been pulled. My explanation for the difference is that the V. minor robbed the soil of nutrients, or left something in the soil that impeded the sprouting of the native seeds. Since the vinegar sprayed V. minor was dieing it could not rob the soil of as many nutrients. For last year's science fair I found an effective and natural way to kill the invasive species V. minor using vinegar. The herbicides used commonly on this pest are harmful to the environment and the people who used them, and can limit future plant growth. I found a natural alternative that does not limit native seed germination.</p>	
Summary Statement My project is about killing invasive Vinca minor and the restoration of native plants.	
Help Received My mother bought supplies and edited my abstract to fit this form. My father and sister helped move plants and take pictures. The staff members at Native Revivals Nursery (Aptos, CA) gave advice on the selection of native plant seeds.	