



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Emily C. Wong	Project Number J1641
Project Title What Are the Effects of Soil Sterilization on Pea Plant Growth?	
Abstract Objectives/Goals This study examined the question of which type of soil pea plants grew better in- sterile, sterile with nitrogen fertilizers, or untreated soil. Methods/Materials A total of 24 pea plant seeds were planted, eight in sterile soil, eight in sterile soil treated with nitrogen fertilizer, and the remaining eight in an unsterilized soil control. Plants were observed over a 20-day period. Seedling germination rate and height were measured daily. Results Results showed that the plants grown in sterile soil with nitrogen fertilizers added were less healthy and stayed considerably smaller than those planted in sterile soil. The peas planted in untreated soil showed the poorest growth, with the least germination and very weak and diseased development. The results suggest that sterilizing the soil benefits pea plant growth, but that adding fertilizer may not always be beneficial for plant growth. Conclusions/Discussion This study showed that soil treatments can make a significant difference in pea plant growth. Specifically, pea plants grew best in sterilized soil, and worst in untreated compost. This may be because sterilizing the soil gets rid of harmful soil organisms that can affect the growth of the pea plant. Adding nitrogen fertilizer to sterilized soil did not improve growth; in fact, the pea plants did worse in fertilized sterile soil than in sterile soil alone.	
Summary Statement Which type of soil will benefit pea plant growth- sterilized soil, sterilized soil with nitrogen fertilizer or untreated soil?	
Help Received Father helped print pictures	