



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

<p>Name(s) Nathan H. Kandus</p>	<p>Project Number 22780</p>
<p>Project Title Koch's Postulate: Orange Ya' Glad We Have Penicillin?</p>	
<p>Objectives/Goals The purpose of my science project was to see if different fruit grew the mould of penicillin different, using the method designed by Robert Koch. The reason I did this was because I was interested to see if a disease was carried by different hosts, if it would mutatae or adapt to better fit the environment.</p> <p>Methods/Materials Materials:6 oranges, 3 lemons,3 limes, 1 vile of penicillin, pitri dishes, agar, toothpicks, cotton swab bags, twist ties</p> <p>Procedures: 1.Make a wound on two of the oranges 2.Using a cotton swab, infect those two oranges with the penicillin mould from the vile. This will be called series 1 3.Wait four days and record observations of infected fruit 4.With a cotton swab, apply some of the mould from the oranges on a pitri dish 5.Wait two days and observe the pitri dish 6.Repeat step two using the mould from the pitri dish with two oranges, two lemons and two limes. This will be called series 2 7.Wait two days and observe infected fruit 8.Using the fruit you infected two days ago, repeat step four 9.Two days later, observe pitri dish, and compare two first pitri dish</p> <p>Results I found that when penicillin grew on different fruits, the colonies looked about the same, but the amount of mould was the main thing that varied. I found that when you grew mould on oranges, it grew more mould than limes, and the limes grew more than the lemons. I also experimented of sprayed fruit. The lemons colonies shot up higher than any other fruit. Limes grew the second most, and the oranges grew the least.</p> <p>Conclusions/Discussion The fruits all grew the mould differently. This told me that the chemical composition must be different all of these fruits, and that is why the penicillin grew differently. Almost all of the sprayed fruit did not grow mould well. However, the lemon grew the mould better when it was sprayed. The explanation I could think of for this was that the pesticides reacted with the lemon </p>	<p align="center">Abstract</p>
<p>Summary Statement The effects of different environments on a pathogen.</p>	
<p>Help Received Mr, Pembleton, for helping me get the penicillin.</p>	