

Ellery Goeltzenleuchter

Junior Division Microbiology

Caution Spice At Work

Preservatives aren't just man-made chemical substances. So I decided to test the preservative quality of certain spices. The spices I chose are two examples of spices that seem to be the most promising from research. These are: cinnamon, containing cinnamic aldehyde and eugenol, and sage, containing thymol. I hypothesized that cinnamon and sage may prevent and/or stop bacterial and to a lesser extent, fungal spoilage. I decided to test the essential oil and powdered forms of each spice on rotting mashed strawberries. In part one of my testing, I tested inhibition; in the second test I measured the ability of the spices to kill microbes. For each test I measured the level of microbes on days 0, 2, 4, and 7 of the experiment. My conclusion is that Cinnamon Oil works the best as an inhibitor and a killer in this test. Also gram for gram the essential oils work better as preservatives than the powders, and that the bacteria and mold live in opposing cycles in the strawberries.