The Effect of Food Preservatives on the Growth of Microorganisms

Claire Smith

Greenwich Central School, NY USA

Many households throw out food right away as they see mold growing. On average 150,000 tons of food gets thrown out every day in the U.S alone due to microorganisms growth. But what if there was a way to prevent it so we don't waste so much food. Previous studies have shown what are good food preservatives and what aren't. It's proved that salt is a good food preservative. The reason for that is because it limits the amount of water in food (NICB). The objective of this study is to determine whether or not salt actually works as a food preservation method. My hypothesis is that if 2.5 grams of salt is added into 50 mL of broth, then it will grow the least amount of microorganisms compared to the 0g, 1.25g, 5.0g, 10.0g of salt added. This was researched by having 5 different mason jars each with 50 mL of broth. Within each jar was different amounts of salt: 0g,1.25g, 2.5g, 5.0g, and 10.0g. Then 10 mL of each broth trial was placed into individual petri dishes that were swiped with K-12 E Coli. Each petri dish was placed in an incubator. My data showed that overall the salt did not do well preventing microorganism. The 10.0 grams of salt added provide the most consistent data while the 1.25 provided the best results. On the other hand the constant showed some of the worst results.

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