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What's Up With MSG And How Does It Affect The Cockroach And Me? The Effect Of MSG On G. portentosa

The purpose of this project was to determine if monosodium glutamate (msg) contributes to obesity and affects length and respiration rates in Madagascar Hissing Cockroaches (*Gromphadorhina portentosa*). This benefits mankind by informing the public about the possible risks associated with msg. Also it could help curb the rise of obesity in America. For the procedure, the cockroaches were separated into six groups consisting of three cockroaches in each group. Monosodium glutamate solutions were made by mixing a certain amount of msg with 20 ml of water. The solutions were 10%-50% as well as a control receiving distilled water. The cockroaches were injected with 0.1 cc of each solution every two days for two weeks. The length, mass, and respiration rates were also recorded before and after msg exposure. The data shows that the msg did affect the respiration and mass of the cockroaches. The 30% solution showed the largest growth in mass and the fastest respiration rate. The average mass for the cockroaches at 30% solution was 7.5 grams. Compared to the control who's average mass was only 6.1 grams. The cockroaches' lengths were all very similar and all grew about the same average length. For respiration, the 30% group again had the highest respiration with an average of 4.028 ppm/s. Next was the 20% group with an average respiration rate of 3.521 ppm/s. The control was the lowest with an average of 2.639 ppm/s. Overall, the researcher concludes that msg contributes to obesity and higher respiration rate.