

Stop the Change of Glutamic Acid

In recent years, preservatives have had a strong image of being bad for our bodies. However, some think preservatives coming from nature would be accepted by people easily. The purpose of this study was to make preservatives that are more natural and better than existing ones. The deamination of glutamic acid is a reaction that can be used to monitor food spoiling. Ammonia is generated by it, which changes pH in solution. Therefore, we tested various preservatives on tofu with glutamic acid to see which had slow reaction rates. We prepared sodium benzoate and potassium sorbate as existing preservatives for comparison with Japanese pepper, cinnamon, chili pepper and salt in various combinations. They were put in a petri dish with tofu, water and glutamic acid, and the pH was measured by a pH sensor every day for 3 days. Salt and Japanese pepper, as well as salt and cinnamon, showed more effectiveness than existing preservatives, having a pH change no more than 0.05 for both. In the future, the effectiveness of these natural preservatives for practical foods needs to be tested. Peppers tend to have strong spiciness, and salt can alter food flavor significantly. As such, the impact these preservatives have on food flavor must be looked into.