

Development of a Flow-Type Taste Sensor

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The purpose of this study is to develop a taste sensor for real-time control of food quality. The main requirement for the taste sensor used for real-time quality control in food production is that it can measure a small amount of the sample, which is extracted automatically. It is considered that a flow-type sensor is more effective than a conventional taste sensor, which is composed of several kinds of lipid/polymer membranes for transforming the information of taste substances into electrical signals. The measurement system was built by combining solenoid valves, a peristaltic pump, some connectors and a computer. Some measurement conditions such as stabilization time and the amount of samples were examined. The flow-type sensing system showed responses to taste substances in a similar way to the conventional batch-type sensing system; i.e., discrimination of taste was successful. Consequently, the ethanol concentration was measured with less than 0.5% error for several brands of sake with different ethanol concentrations. These results suggest that the flow-type taste sensing system is useful for automatic quality control in the fermentation process.

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