

Difference in the palatability of sake and wine when paired with food

The degrees of compatibility and palatability of paired liquors and foods are different from one another, which are well known on the experiential basis. However, the reason for these variations has seldom been scientifically investigated. On the other hand, cheese contains high levels of umami constituents and matches well with various alcoholic drinks. Therefore, we investigated the sensory differences of umami aftertastes in the pairings of cheese and sakes/wines.

The intensity of umami taste after eating cheese followed by drinking sake or wine was evaluated by the figures determined by a taste sensor. Consequently, the intensity of umami aftertaste from cheese was higher when paired with sake than with wine. Furthermore, this result is consistent with the human sensation that wine refreshes our palate and avoids getting tired of eating cheese, while sake makes us enjoy the umami of cheese better.

The reason for the difference mentioned above was found to be the difference between the level of organic acids of sake and that of wine. That is to say, high level of organic acids in wine reduced the umami aftertaste formed by amino acids and peptide in food. Therefore, the difference between the palatability of sake paired with food and that of wine is scientifically elucidated by these results to some extent.

This research was performed in collaboration with the Japan Sake and Shochu Makers Association.

Organic acids in alcoholic drinks affect the palatability of sake and wine paired with cheese.
--

Difference in the palatability of sake and wine when paired with food

Good example of alcoholic drink and food pairing

Cheese & Wine

- Pairing that makes us untired of eating.
- Wine refreshes the rich taste of cheese.

Cheese & Sake

- Recently popular pairing.
- Sake supports the umami of cheese.

Scientific evidence?

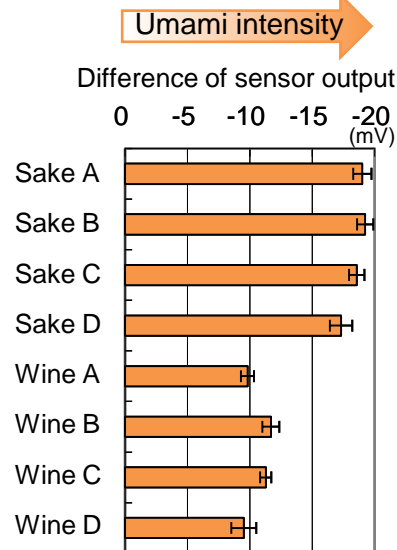
【Taste sensor analysis】

The intensity of umami aftertaste of cheese paired with sake or wine was evaluated by the figures determined by a taste sensor equipped with an artificial lipid membrane. The intensities of the umami aftertaste were lower when paired with white wine than with sake (left figure). The addition of tartaric or malic acid to sake reduced the umami aftertaste (right figure). Thus, the difference in organic acid concentration can explain such difference between sake and wine.

【Sensory evaluation】

When pairing cheese with sake, more panelists experienced less umami aftertaste with sake added with tartaric acid than with sake without tartaric acid.

Umami aftertaste of cheese paired with sake or wine

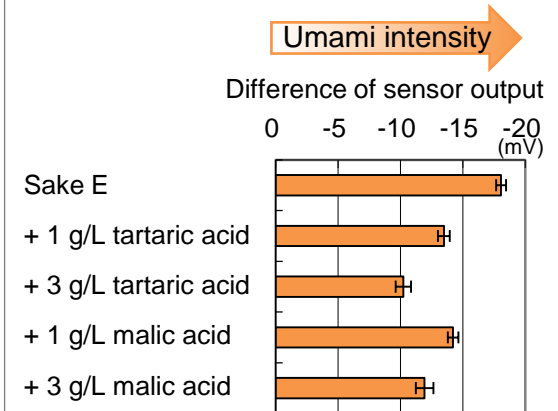


Aftertaste measurement with a taste sensor

Reference solution → Food → Alcohol → Ref. sol.

Difference of potentials (mV) \div Aftertaste

Effect of organic acids in drinks on umami aftertaste of cheese



Food & Wine

Wine contains high levels of organic acids.

↓
Umami constituents are flushed away from the tongue.

Food & Sake

Sake contains less organic acids than wine.

↓
Umami constituents remain on the tongue.