

The timeless, complementary taste of oysters and champagne—explained

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Matching prices aren't the only reason oysters and champagne pair so well. According to a study published by the University of Copenhagen today, an uncanny umami synergy makes the combination of yeast-

brewed bubbly and fresh molluscs a match made in heaven for some. Ironically, the new knowledge could help us consume more vegetables in the future.

Oysters and champagne are considered a perfect pairing. Now, researchers from the University of Copenhagen's Department of Food Science have found flavors in a range of champagnes and variety of Danish oysters that for the first time provide the [scientific explanation](#) for why these two foods complement one another so well.

"The answer is to be found in the so-called umami [taste](#), which along with sweet and salty, is one of the five basic flavors detectable to human taste buds. Many people associate umami with the flavor of meat. But now, we have discovered that it is also found in both oysters and champagne," states Professor Ole G. Mouritsen from the Department of Food Science at UCPH.

In champagne, dead yeast cells contribute greatly to an umami flavor (glutamate). And as for oysters, the umami emerges from the mollusc's muscles (nucleotides).

"Food and drink pair well when they spark an umami synergy from combinations of glutamate and certain nucleotides. Champagne and oysters create a notably synergistic effect that greatly enhances the taste of the champagne. Furthermore, champagne contributes to the overall impression with, for example, its acidity and bubbles. That explains the harmony of these two foods," explains Ph.D. student Charlotte Vinther Schmidt, the study's lead author.

Could get people to consume more vegetables

Besides the more luxurious example of oysters and champagne, the professor also points to ham and cheese, eggs and bacon and tomato and

meat as gastronomic companions with umami synergy.

The professor believes that this synergy and taste is important to us humans for food choices. According to him, we are evolutionarily encoded to crave umami, as it is a sign of protein-rich [food](#) that is important to our bodies.

The encoding may be responsible for us being less enthusiastic about eating umami-less vegetables.

"Understanding the umami principle is particularly important because it can help get us to eat more vegetables. By being cognizant of umami synergy, one can make any vegetable tasty. And, it is my firm belief that if we want more people to eat more vegetables, we need to deal with the fact that greens lack umami," says Ole G. Mouritsen.

Local oysters and old champagne

For the ultimate combination of New Year's Eve oysters and champagne, Professor Mouritsen suggests native Danish Limfjord oysters and an older vintage champagne.

"One gets the most bang for the buck and best taste experience by tracking down flat Limfjord oysters and an unfortunately slightly more expensive bottle of older champagne. Older vintage champagnes have more dead yeast cells, which provide more umami. And Limfjord oysters contain large quantities of the substances that give umami synergy. Still, one shouldn't hesitate from purchasing the invasive Pacific oysters that are harvested in the same area as our native Limfjord species. They too can share an umami synergy with champagne, as the study shows," says Mouritsen

The research was published in *Scientific Reports* and conducted by

Charlotte Vinther Schmidt, Karsten Olsen and Ole G. Mouritsen of the University of Copenhagen's Department of Food Science.

Facts

- In the study, the researchers examined a variety of champagnes, along with both Limfjord oysters and Pacific oysters. The study marks the first time that a scientific explanation has been provided for why oysters and [champagne](#) pair so well.
- It is the combination of the amino acid glutamic acid and nucleotides from the breakdown of muscles from fish, molluscs and shellfish, for example, that greatly enhance umami taste.
- The [umami taste](#) is derived from the concurrent binding of the salt (glutamate) of a free amino acid ([glutamic acid](#)) along with nucleotides to the [umami](#) receptor found in the taste buds of our tongues and in the oral cavity.

More information: Charlotte Vinther Schmidt et al, Umami synergy as the scientific principle behind taste-pairing champagne and oysters, *Scientific Reports* (2020). [DOI: 10.1038/s41598-020-77107-w](https://doi.org/10.1038/s41598-020-77107-w)

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