

Mushrooms in the Fifth Dimension

by David C. Work

When contemplating an ingredient in a dish or on a menu, I consider its place in the balance of flavors, textures, aromas, colors. Different species of mushrooms and their gastronomic impacts can be categorized into groups: light flavors, dark flavors and specialized mushrooms whose attributes are unique or so outstanding that they come through the flavor profile less as balancing factors and more as highlighted statements, ornamentations, sexy overtones, or as an element of surprise.

I am obviously in love with fungi in their endless variety and individualistic subtleties, but this month the culinary attribute I will concentrate on is a ubiquitous yet ambiguously understood facet of the mycophagic experience. In particular, this ramble will orbit around the concept of *umami*; and according to the experts, the mushroom is the king of *umami*.

But, what is *Umami*?

Umami is the complex and subtle taste sensation described loosely as the qualities of deliciousness, heartiness, richness, robustness, brothiness, meatiness, savoriness, or a “fullness of the mouth.” *Umami* is quite multidimensional, and those foods imbued with *umami* taste rich, deep, and satisfying.

It may be easier to recognize *umami* by its absence. Foods that lack *umami* are shallow-tasting, one-dimensional, blah and unsatisfying. David Kasabian, co-author of *The Fifth Taste: Cooking with Umami*, claims that what *umami* does for food is “heightens the impact of flavor and other ingredients—both salty and

sweet—softens sour, masks bitter, extends finish, improves palatability, contributes to mouth feel, triggers salivations, creates a sense of well-being, and may even be an aphrodisiac.” Kasabian also says that the chief synergizer of *umami* is the mushroom.

Mushrooms and the Multiplier Effect/Synergy

We’ve known for centuries that mushrooms can add to the sensory appeal of food by broadening, marrying, and balancing the flavors of different ingredients, but only recently, as research brings greater clarity to the mechanics of *umami*, have we come to understand why mushrooms are so savory and luscious.

Scientifically speaking, foods taste *umami* when they contain a variety of free amino acids and ribonucleotides, mainly glutamate (the most commonly occurring amino acid in living things and a basic component of proteins which accounts for some 40% of plant protein and 15% to 20% of animal proteins), inosinate (found in fish, mushrooms and other foods) and guanylate, (mainly found in plants). Mushrooms contain significant levels of these compounds and place quite high on the *umami* scale.

An intensification of *umami* is achieved when ingredients rich in free glutamates are combined with ingredients abundant in various free nucleotides. The resulting *umami* sensation can be up to *nine times stronger* than the ingredients experienced individually.

A good example of such a combination is scallops— high in glutamates— paired with

