

They gotta have it

Researchers studying the physiological mechanisms behind taste and smell in fish have netted an unanticipated catch: a simple compound that gives catfish an uncontrollable urge to bite.

The scientists say anglers might apply the substance — whimsically named “Gotta Bite” — to lures to make gamefish all but leap into the boat. They also predict that fish farmers could use the appetite-stimulating chemical to grow bigger fish in less time.

Gotta Bite’s discoverers — physiologist John Caprio of Louisiana State University in Baton Rouge, and Slovenian animal behaviorist Tine Valentincic — were examining how catfish sense amino acids when they stumbled upon their serendipitous finding. In the December *CHEMICAL SENSES*, they report that catfish taste but do not smell Gotta Bite, which is a blend of several amino acids, the building blocks that combine to form proteins.

In 1977, Caprio discovered that catfish, unlike most fish, do not taste the same amino acids they smell, or smell the same amino acids they taste (SN: 5/21/77, p.332).

Taste researchers study catfish because these animals have an exquisite sense of taste. “Catfish are basically swimming tongues,” says Caprio, “so they are ideal models for our research.”

But even though catfish usually respond heartily to good tastes, Caprio says he and Valentincic were shocked by the fish’s initial response to Gotta Bite. At low concentrations of the substance, the fish began a series of rapid turns, as if searching for the source of the yummy flavor. As the concentration of Gotta Bite increased, the fish flew into a feeding frenzy — champing at the water, gobbling up and spitting out small rocks, and snapping at the glass walls of the aquarium.

Louisiana State University has applied for patents for using Gotta Bite to coat fishing lures and as a diet supplement for farmed fish. Caprio cautions that he and Valentincic have not yet tested the substance outside the laboratory. However, he says, “if it works in the field half as good as it works in the lab, it’s going to be something.”

And you thought you hated mornings

Many people start each day with a steaming mug of coffee to sweep away the last cobwebs of sleep. But coffee just doesn’t pack a big enough punch for the male members of a remote Amazonian tribe called the Achuar Jivaro, report two ethnobotanists from Washington University in St. Louis.

Walter H. Lewis and Memory Elvin-Lewis found that Achuar Jivaro tribesmen — who live in the Amazonian regions of Peru and Ecuador — each morning quaff an herbal tea that contains the caffeine equivalent of five cups of coffee. But even more interestingly, the two researchers discovered that the men routinely vomit up most of the tea in order to avoid caffeine-overdose symptoms such as headache, profuse sweating and a bad case of the jitters.

The daily vomiting, or emesis, “is simply part of [an Achuar Jivaro] macho ritual, passed down through the ages,” says Lewis. “The tea is so pleasing that they overindulge, vomit to rid themselves of the excess caffeine, then go about their business,” he says.

The Achuar Jivaro make their jolting beverage from the leaves of a South American holly, *Ilex guayusa*, which contains the highest percentage of caffeine by dry weight of any plant in the world, Lewis says.

Through biochemical studies, the Washington University team determined that the holly does not contain any naturally occurring emetic, which would have explained the tribesmen’s vomiting.

Ulcer drugs make a drink more potent

For some ulcer sufferers, a sip of the grape or the grain may pack a surprisingly strong punch. Clinical studies suggest that two commonly prescribed ulcer medications can significantly increase alcohol’s intoxicating effects.

In 1989, researchers led by Charles S. Lieber of the Mount Sinai School of Medicine in New York City found that people taking the ulcer drug cimetidine (Tagamet) may become intoxicated even if they drink only small amounts of liquor. Now, the same team reports that another commonly prescribed ulcer drug, ranitidine (Zantac), also boosts the effects of liquor.

In the Jan. 1 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, Lieber and his colleagues describe a study in which they gave 20 healthy men breakfast followed by a glass of orange juice spiked with an alcohol dose equivalent to 1½ glasses of wine or beer. To establish a baseline, the researchers measured blood-alcohol concentrations after the volunteers consumed the drink. Then, for the next week, they gave eight men 300 milligrams per day of ranitidine, six men 1,000 milligrams per day of cimetidine and six men 40 milligrams per day of famotidine (Pepcid), another ulcer medication.

At the end of the week, the researchers again gave the volunteers an orange juice spiked with alcohol. Ranitidine and cimetidine treatment boosted the group’s mean peak blood-alcohol concentration by 34 and 92 percent, respectively, compared with baseline. Famotidine had no significant effect on blood-alcohol concentration.

The researchers can’t completely explain the alcohol-enhancing ability of the two drugs. Lieber notes, however, that both cimetidine and ranitidine belong to a class of drugs that inhibit gastric alcohol dehydrogenase, an enzyme that metabolizes alcohol. When the enzyme activity is slowed, more alcohol reaches the bloodstream, he suggests. Thus, people who drink while taking these drugs may run a risk of impaired functioning, which could make driving a car and other attention-oriented tasks hazardous, Lieber says.

Asbestos linked to colon polyps

A new study indicates that people exposed to significant amounts of asbestos may face an increased risk of colon polyps, small, grape-shaped growths that can become malignant.

Although epidemiologists have linked the mineral asbestos to the development of colon cancer in the past, this is the first time scientists have shown an association between asbestos and colon polyps. The finding suggests that asbestos may act very early to trigger the wart-like polyps, says epidemiologist Alfred I. Neugut of Columbia University’s School of Public Health.

He and his colleagues identified patients who had undergone colonoscopy at two New York City medical centers between April 1986 and March 1988. After reviewing medical charts, the researchers discovered 51 men with colon cancer, 153 men with colon polyps and 195 who showed no sign of colon cancer or polyps. They asked the men a series of questions, including questions about their exposure to asbestos, the fibrous mineral widely used as an insulating and fireproofing material.

A statistical analysis revealed that men who reported heavy exposure to asbestos had a greater risk of colon cancer or polyps than did men who reported little or no asbestos exposure. The team describes its results in the Dec. 18 *JOURNAL OF THE NATIONAL CANCER INSTITUTE*.

Neugut cautions that these findings remain very preliminary. The researchers identified only 12 men with significant asbestos exposure — a group too small to yield definitive results, he says. A larger study would help strengthen the evidence linking asbestos to colon polyps, he notes.