

Mushrooms may contain alcoholism 'cure'

Although about a half dozen types of mushroom in Michigan are known to be deadly, there may be many others which have toxic properties and perhaps some which contain natural medicines.

One mushroom substance is being investigated for possible use in helping alcoholics overcome their addiction.

According to University of Michigan pharmacy researcher, George M. Hatfield, Ph.D., too little is known about the biochemical makeup of Michigan

fungi and the powerful substances they contain.

He explained that although botanists have identified, described and classified many mushrooms and estimated some 2,500 different kinds as growing in the state's woodlands, most have never been analyzed for their biochemical properties.

This leaves a vast area of scientific ignorance which has potential for either harm or benefit to man, he added.

Dr. Hatfield, who recently joined the U-M as associate professor in the College of Pharmacy, is a pharmacognosist, concerned with the discovery and analysis of such druglike substances found in nature.

Among these are the mushroom toxins found in some plants of the Amanita genus which recently killed two elderly Michigan residents after the fungi were picked and eaten by mistake.

"This type, the Amanita Vireosa, Verma and Bisporangia group acts by attacking the liver, hindering very rapidly to a vital cell substance RNA polymerase, and causing a series of domino-like reactions which kill large numbers of liver cells," Dr. Hatfield said.

"We suspect, but cannot prove yet that the toxin is very rapidly neutralized and excreted from the body, but

not before it can do its damage." Symptoms may not show up for many hours or even days after the mushrooms have been eaten.

"If this bit of ancient biochemical activity can be confirmed through animal studies, it may be that the experimental 'antidote' now being tried for liver toxins may be useless and other means of helping victims should be sought," Dr. Hatfield said.

He noted that there are many basic questions about natural toxins which are unanswered, such as precisely

where in the body do they go? how big a dose is dangerous or fatal in humans? and when or by what means does the toxin leave the body? Perhaps because of their delayed action, the liver toxins of the amanita "Destroying Angel" variety seem to claim the most victims.

"By the time you become sick, it may already be too late, if massive liver damage has occurred. Generally speaking," Dr. Hatfield said, "The prognosis is better if one is ill immediately after eating the fungi, since other toxic substances found in the mushrooms that act quickly are rarely fatal."

Another problem with the poisonous amanita variety is that it looks good to eat, he said. Other poisonous types, whose toxins attack the central nervous system or cause severe intestinal upset, generally look less appetizing, and are less frequently ingested.

A fourth type of mushroom toxin common in Michigan makes the person who eats it ill, only if alcohol also has been ingested. Dr. Hatfield has been investigating the properties of this toxin—a cyclopropane derivative of glutamic acid—under a three-year grant from The National Institute on

Alcohol Abuse and Alcoholism as a possible alternative drug to Antabuse to which some persons become allergic.

Antabuse has been successfully prescribed for alcoholics as a sort of chemical will power to prevent impulse drinking. It causes severe vomiting and other unpleasant symptoms if only a minute amount of alcohol is drunk. Because of other side effects, not all alcoholics can take this drug and the glutamic acid derivative is being studied as a second choice, Dr. Hatfield said.

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'Price discrimination essential'

Discrimination is a good thing, if you're talking about price, says a Michigan State University marketing authority.

"Price discrimination is an essential lubricant for keeping the wheels of a competitive system turning, says Dr. Eli P. Cox, professor of marketing, in "MSU Business Topics," a quarterly published by the Graduate School of Business Administration.

Cox suggests, however, that price discrimination may be falling into a "condemnation-by-label category," because the word discrimination connotes bias and unfairness, although the word once was synonymous with good taste.

PRICE DISCRIMINATION probably is practiced in some form by every institution which sells goods or services and explains the two types of price discrimination.

Economic price discrimination exists when the vendor receives a different net return (stated price per unit less cost of selling and delivering) per unit in sales to different buyers.

Pragmatic price discrimination exists when a vendor sells to two or more buyers at different prices with differences based primarily on relative demand elasticities rather than on precise differences in costs of sales and delivery.

According to Cox, price discrimination may be the most common and pervasive element of the marketing mix as economic enterprises strive for institutional advantage. Tempering with it is dangerous, he says, and should not be done on a wholesale scale or on the basis of categorical thinking.

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