

# Poison hidden on the grocery store shelves

By Arthur O. Tucker

With increased globalization of our food sources, problems have arisen. My area of expertise has been in herbs and spices, so items in this area have come across my desk over the past 40 years, but they seem to be increasing in frequency lately.

## Garden Tales

One of the liveliest discussions lately has been on the adulteration of European and American pine nuts with inedible pine nuts from China. About 20 species of pines yield edi-

ble pine nuts. The Italian stone pine (*Pinus pinea*) produces the edible pine nuts relished in Italian dishes like pesto and pine-nut cookies (*pinoli*).

In the Southwest U.S., the pinon pine (*Pinus edulis*) is probably the one with the most press coverage and use. There are edible pines in Asia, but the Chinese are substituting seeds of the inedible Chinese white pine (*Pinus armandii*) along with the edible species sold in the U.S.

The seeds of the Chinese white pine cause what has been called

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“pine mouth,” in which everything tastes metallic (dysgeusia or metallogueusia) for several days to weeks, but not everyone is affected equally. While not lethal, the FAO (Food and Agriculture Organization) has called the Chinese white pine nuts “unfit for human consumption.” The seeds of the Chinese white pine are somewhat smaller than the normally edible species on the market.

Fruits of Chinese star anise are a necessary component in the mixture called Chinese five spice and are also used in the manufacture of Tamiflu. The edible Chinese star anise (*Illicium verum*) causes no problems, but lately fruits of the poisonous Japanese star anise (*I. religiosum*) have been substituted. Generally these two species are difficult to distinguish by shape alone, but the fruits of Japanese star anise are somewhat smaller and more shrunken.

Food ingredients in the U.S. are regulated by the FDA (Food & Drug Administration) in what has been coined as GRAS (Generally Recog-

nized As Safe) in Chapter 21 of the Code of Federal Regulations (CFR). Items not GRAS can be sold but do not have federal assurance of safety (and legal protection).

I frequently see red or pink peppercorns offered for sale, often in admixture with white and black peppers. The pink or red peppercorns, neither of which are GRAS, are primarily from the Brazilian pepper tree (*Schinus terebinthifolia*), but the fruits of the Peruvian or California pepper tree (*S. molle*) are also harvested as Baies Rose de Bourbon. Both species are in the poison ivy family (*Anacardiaceae*), and both species are documented to cause contact dermatitis and asthma-like attacks (with as little as one peppercorn) in susceptible individuals. This can be accompanied by shortness of breath, chest pains, sore throat, hoarseness, upset stomach, and diarrhea.

California bay (*Umbellularia californica*) is frequently encountered in both the dry and fresh bays offered for sale, often mislabeled as the edible Greek bay (*Laurus nobilis*). California bay has a documented neurotoxin, umbellulone, and can cause convulsive sneezing (up to 15-30

minutes) in some people. Thus, California bay will never achieve GRAS status because of this.

Criticizing sassafras is like criticizing mom and apple pie in the U.S., but the root bark of sassafras (*Sassafras albidum*) has safrole, which has been documented to be a pre-hepatocarcinogen in dogs and humans. That is to say, the safrole in sassafras can be metabolized to chemicals that cause liver cancer.

Not only is sassafras not GRAS, but the FDA has issued repeated warnings against consuming sassafras. LorAnn (a proprietor of candy flavorings) sells an imitation sassafras that is safrole-free. Filé powder, from the leaves of sassafras, however, apparently contain no safrole and thus appear safe to use in your gumbo. Hoja santa/acuyo/makulan, large leaves of a pepper (*Piper auritum*) used in Meso-American cooking, also contain safrole and is not GRAS.

Epazote (*Dysphania ambrosioides*) supposedly reduces flatulence in bean dishes and is sometimes used in Meso-American cooking. Epazote is not GRAS and is documented to be poisonous. Epazote

is the same as wormseed, a documented anthelmintic (purgative to intestinal worms and amoebae), but the level of lethality for the worms is just at the cusp for lethality for the human host, and thus wormseed oil has disappeared from the drug store shelves.

Undoubtedly, more cases of questionable foods and adulterations will arise in the future. This gives fuel to the calls for the small, family farms of yesteryear and consumption of local produce. DDA (Delaware Department of Agriculture) publishes a list of farmers' markets:

<http://dda.delaware.gov/market-ing/FarmersMarkets.shtml>

Also check out the Delaware Agritourism Association:

<http://delawareagritourism.org/>

On the campus of Delaware State University, the Claude E. Phillips Herbarium is Delaware's center for research, education, and outreach about plant identifications, locations, and uses. Call 302-857-6452 (Dr. Susan Yost) to arrange a tour of the Herbarium, and call 302-857-6408 (Dr. Arthur Tucker) for more information about this article.

Submitted photo  
Dried leaves of the potentially poisonous California bay, left, are lance-shaped and generally a dark green. Dried leaves of the edible Greek bay, right, are usually egg-shaped with a thick leaf margin that is often undulate (wavy), and the color is often faded to a pale green or greenish tan.