Relative risks of Aloe drink to other food/drinks

September, 2011
Humans consume daily...

...some of the foods which are known to contain trace amounts of natural occurring proteins and/or components which have the potential (in large doses) to be allergens, toxins or carcinogens.

Apricots
Apples
Tea
Cocoa
Coffee
Cherries
Black Pepper
Mushrooms
Etc.

THE "POTENTIAL OR RISK" IS RELATIVE....AND IT IS ‘THE AMOUNT CONSUMED’ THAT MATTERS...
Many plants that humans consume have naturally occurring trace amounts of potential toxic and/or carcinogenic components

"99.9 percent of the toxic chemicals we're exposed to are completely natural"

"You consume about 50 toxic chemicals whenever you eat a plant."

"Standard animal cancer tests done with high doses are practically useless for predicting a chemical's risk to humans."

— Bruce Ames, Ph.D. and Lois Swirsky Gold, Ph.D. University of California, Berkeley

*From the article "SCIENTIST AT WORK: Bruce N. Ames; Strong Views on Origins of Cancer"
By JANE E. BRODY
Published: Tuesday, July 5, 1994
Whole plant toxicity example: Apple seeds = Trace amt. of Cyanide

Apple seeds contain cyanogenic acids*. Your body can detoxify small quantities of cyanide compounds. If you accidentally eat a cherry pit in a pie or swallow an apple seed or two, you'll be fine. Actually, if you swallow several seeds whole, you would absorb a minimal amount of the toxic compounds. Chewing the seeds makes them much more hazardous to your health. Children and pets are much more likely to suffer poisoning from eating the seeds than adults.

If you grind the 'whole apple' in the apple juice manufacturing process, you may have seed parts in the end product. The apple seeds are known to contain trace amounts of naturally occurring Cyanide!! (But again it's the amount.. Or "dose" that makes a difference!)

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*Many cyanides are highly toxic. The cyanide anion is an inhibitor of the enzyme cytochrome c oxidize (also known as aa3) in the fourth complex of the electron transport chain (found in the membrane of the mitochondria of eukaryotic cells). It attaches to the iron within this protein. The binding of cyanide to this cytochrome prevents transport of electrons from cytochrome c oxidase to oxygen. As a result, the electron transport chain is disrupted, meaning that the cell can no longer aerobically produce ATP for energy. Tissues that mainly depend on aerobic respiration, such as the central nervous system and the heart, are particularly affected. (http://en.wikipedia.org/wiki/Cyanide#Toxicity)

2http://www.fao.org/Docrep/005/Y2515e/y2515e15.htm#TopOfPage
Like “whole” unprocessed apple juice, “whole leaf” Aloe Vera juice contains trace amounts of a naturally occurring compounds which are known to produce a laxative effect, or in much larger amounts a toxic effects. (In whole leaf Aloe Vera it is the anthraquinones which are have a laxative and a anti-bacterial, anti-viral, and analgesic effect).

However, in the juice/beverage processing reduces the level of Anthraquinones to almost non-existing levels.

AGAIN...IT IS THE AMOUNT CONSUMED THAT MATTERS....
Toxicity example: Commercial Apple Juice - Arsenic

Arsenic in apple juice: How much is too much?
By Tom Marshall, Times Staff Writer
In Print: Sunday, March 14, 2010

Every school day across the Tampa Bay area and America, kids leave home with apple juice in their lunch boxes. Their toddler siblings drink it from sippy cups.

The labels look kid-friendly: Motts, Apple & Eve Organics, Tree Top.

But what's inside those boxes may not be completely benign.

Independent testing commissioned by the St. Petersburg Times has found levels of arsenic that have caught the attention of scientists and parents.

More than a quarter of the 18 samples tested by the Times contained between 25 and 35 parts per billion of arsenic — amounts that surpass the Food and Drug Administration’s "level of concern" for heavy metals in juices.¹

Even though the arsenic level in commercial apple juice exceeds the "level of concern". FDA says there is no reason to worry.

Anthraquinone levels in commercial Aloe Vera juices in the market are many times lower than the known toxic level! ➔ Commercial Aloe Vera Juice in US market is less toxic than the commercial apple juice!

Federal officials said they have found no reason for parents to worry.

"We don't have any evidence at this point to say that we feel there's a risk issue that you need to be mindful of," said P. Michael Bolger, the Food and Drug Administration’s chief of chemical hazards assessment.

The national firms whose juices were tested stood by the quality of their products, and said they look to the government for advice on contaminants like arsenic.

¹ Follow the link for the whole article:
http://www.tampabay.com/news/health/article1079395.ece
(click on the slide show mode (🔗) to make sure that the link works properly)
Like naturally occurring toxic components, there are trace amounts of natural carcinogenic components in many other plants humans consume everyday.

**Naturally occurring carcinogens**

- Though research has been more focused on pesticide residues in food there are numerous naturally occurring carcinogens in food plants. For example, **tannins** occur widely in plant foods and we ingest them daily in **tea, coffee, and cocoa**. Experiments on animals have shown that **tannic acid causes liver tumors in animals**, and may be linked to esophageal cancer in humans.

- **Cycad plants**, an important food sources in tropical regions, contain cycasin and related azoxyglycosides which when tested on rats have shown to cause liver and kidney tumors.

- **Safrole**, which is a liver carcinogen in rats, is found in **sassafras tea, cinammin, cocoa (trace), nutmeg, and other herbs and spices.**

- Tests on mice have proved **black pepper to be carcinogenic**.

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Trace amounts of NATURALLY OCCURRING MUTAGENS and CARCINOGENS FOUND in many other FOODS and BEVERAGES

- Acetaldehyde (apples, bread, coffee, tomatoes)—mutagen and potent recent carcinogen
- Acrylamide (bread, rolls)—rodent and human neurotoxin; rodent carcinogen
- Aflatoxin (nuts)—mutagen and potent rodent carcinogen; also a human carcinogen
- Allyl isothiocyanate (arugula, broccoli, mustard)—mutagen and rodent carcinogen
- Aniline (carrots)—rodent carcinogen
- Benzaldehyde (apples, coffee, tomatoes)—rodent carcinogen
- Benzene (butter, coffee, roast beef)—rodent carcinogen
- Benzo(a)pyrene (bread, coffee, pumpkin pie, rolls, tea)—mutagen and rodent carcinogen
- Benzofuran (coffee)—rodent carcinogen
- Benzyl acetate (jasmine tea)—rodent carcinogen
- Caffeic acid (apples, carrots, celery, cherry tomatoes, coffee, grapes, lettuce, mangos, pears, potatoes)—rodent carcinogen
- Catechol (coffee)—rodent carcinogen
- Coumarin (cinnamon in pies)—rodent carcinogen
- 1,2,5,6-dibenz(a)anthracene (coffee)—rodent carcinogen
- Estragole (apples, basil)—rodent carcinogen
- Ethyl alcohol (bread, red wine, rolls)—rodent and human carcinogen
- Ethyl acrylate (pineapple)—rodent carcinogen
- Ethyl benzoate (coffee)—rodent carcinogen
- Ethyl carbamate (bread, rolls, red wine)—mutagen and rodent carcinogen
- Furan and furan derivatives (bread, onions, celery, mushrooms, sweet potatoes, rolls, cranberry sauce, coffee)—many are mutagens
- Furfural (bread, coffee, nuts, rolls, sweet potatoes)—furan derivative and rodent carcinogen
- Heterocyclic amines (roast beef, turkey)—mutagens and rodent carcinogens
- Hydrazines (mushrooms)—mutagens and rodent carcinogens
- Hydrogen peroxide (coffee, tomatoes)—mutagen and rodent carcinogen
- Hydroquinone (coffee)—rodent carcinogen
- d-limonene (black pepper, mangos)—rodent carcinogen
- 4-methylcatechol (coffee)—rodent carcinogen
- Methyl eugenol (basil, cinnamon and nutmeg in apple and pumpkin pies)—rodent carcinogen
- Psoralens (celery, parsley)—mutagens; rodent and human carcinogens
- Quercetin glycosides (apples, onions, tea, tomatoes)—mutagens and rodent carcinogens
- Safrole (nutmeg in apple and pumpkin pies, black pepper)—rodent carcinogen

*http://www.acsh.org/publications/pubID.103/pub_detail.asp
Paracelsus the father of toxicology says...

"It is the dose that makes the poison"

....With modern scientific measuring tools of today we can find toxins in anything we measure. The questions is simply the amount...

• One of the most common examples of how we learn to balance toxins, is in the use of Botulinum Toxin (BOTOX) which is one of the most powerful neurotoxins known, and yet it is widely used for anti-wrinkle cosmetic and to treat migraine headaches.
Conclusion

- Many plants consumed daily contain trace amounts of natural toxic components.
- Just because science can now measure down to the parts-per-million to find potential toxins in anything...or that we can force feed animals enough to find a compound has a toxic effect on them, does not mean that the air we humans breathe, or the water we drink, or the food we consume will have a toxic effect on us.
- Aloe Vera Juice products in the US market contain traces of Anthraquinones which are known to have an active effect (i.e. a natural laxative) and in large amounts are considered toxic. However, the amount of Anthraquinones in those products are many times below the known toxic level.
- The only proven active effect on humans of anthraquinones shown to date is its laxative effect.

BRIEFLY....IT WOULD BE UNFAIR TO SAY THAT THE COMMERCIAL ALOE VERA JUICE PRODUCTS IN US MARKET ARE ANY MORE TOXIC THAN APPLE JUICE.