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## On The COVER

### Why Is the FDA Picking On Cherries?

(Author's name withheld due to the controversial nature of this article.)



George Washington cut down one tree. Bureaucrats in Washington, DC, are trying to pull up the whole orchard. On October 17, 2005, letters went out from the Food and Drug Administration warning cherry purveyors that they had better quit telling people that cherries have health benefits or dire things are going to happen. The lucky recipients were warned that it's illegal to say things like, "*The same chemicals that give tart cherries their color may relieve pain better than aspirin and ibuprofen.*" testimonials such as "*I no longer take any drugs!*" had better cease or else.

Although most of the 29 letters were aimed at Michigan cherry growers, some were fired off to growers of other berries in other states. What prompted the berry attack is still at large. Inquiries to the office of Judith Putz, compliance officer for the FDA's Detroit district office, didn't yield answers beyond that the FDA had become aware that people were "making claims." The action is not unprecedented, however. Back in 2001, somebody at Food and Drug got bugged about a different berry-the cranberry.

At that time, a letter was fired off to the king of cranberries, Ocean Spray, telling the company that, despite recommendations of the Surgeon General and the National Research Council, it had better quit repeating the story that eating foods high in plant nutrients may protect against some types of cancer and strokes. The alleged criminal acts had occurred on Ocean Spray's website. Normally, the FDA has no authority over websites, but the company had put its website address on its products, and the agency does have authority over labels. On the theory that the website was now part of the label, the agency moved to censor what Ocean Spray was saying. In response, the company moved its health and anti-aging data to the Cranberry Institute's site, thus separating product from information. Today, however, the site contains a lot of scientific data about how the proanthocyanidins in cranberries prevent bacteria from sticking to the urinary tract.

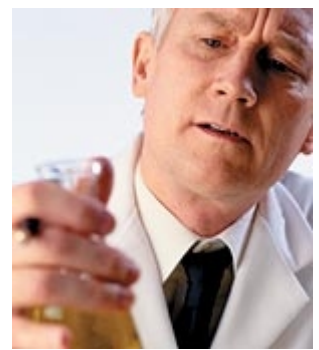
Unlike the cranberry situation, however, the recent attack on cherries is aimed at statements made on websites not linked to labels. Since the FDA has no authority to dictate website content-which is regulated by the Federal Trade Commission-I asked the agency by what authority it was threatening to seize property and stop people from selling cherry products. The agency responded that websites are part of the legal definition of "label." A reading of the legal definition, however, reveals that a label is, well, a label-something stuck to a product or its package. The definition also allows Food and Drug to regulate things that come with the product, such as a package insert. But no mention is made of websites.\*

#### THE LEGAL DEFINITION OF LABEL

\* The definition of label and labeling (21CFR1.3): (a) *Labeling* includes all written, printed, or graphic matter accompanying an article at any time while such article is in interstate commerce or held for sale after shipment or delivery in interstate commerce. (b) *Label* means any display of written, printed, or graphic matter on the immediate container of any article, or any such matter affixed to any consumer commodity or affixed to or appearing upon a package containing any consumer commodity. Source: Code of Federal Regulations, Title 21, Section 1.3.

#### WHAT THE SUPREME COURT SAYS

Not surprisingly, some in the cherry industry are talking about their First Amendment rights. "Tart is smart," according to King Orchards, and it's not rolling over. Neither, apparently, is the Supreme Court. In sharply worded opinions, the Court has repeatedly rebuked the FDA's "highly paternalistic approach" to keeping information from people for their own good. When the FDA tried to keep compounding pharmacies from advertising, the Court warned the agency that whether a person wants alternative choices is not the government's decision to make. The searing verdict: *Bans against truthful, nonmisleading commercial speech . . . usually rest solely on the offensive assumption that the public will respond "irrationally" to the truth. The First Amendment directs us to be especially skeptical of regulations that seek to keep people in the dark for what the government perceives to be their own good.*<sup>1</sup> The Court further admonished the agency to quit trying to protect favored markets by suppressing information. According to these and other Court opinions, the FDA appears to have more bureaucratic bark than legal bite.



## GOVERNMENT STUDIES



Incredible as it seems, part of the information on cherries that the FDA wants to censor was funded by a different governmental agency. The US Department of Agriculture (USDA) gave the cherry industry a \$141,210 grant to investigate the health benefits of cherries so the industry could increase its sales. Tom Dorr, special assistant to the Secretary of the USDA, had high hopes when he handed over the funds that were used to explore the nutritional and nutraceutical aspects of the berry, enthusing that cherry growers "know how to best develop new markets for the cherry industry."

The FDA does not want the cherry industry to tell people that recent studies show that cherries contain substances that are potentially 10 times stronger than aspirin or ibuprofen for relieving pain. It does not want the public to know that substances in cherries may kill cancer cells and prevent cancer. It makes no difference whether these statements are true. What's important is that the public not be told that a natural substance (cherries) has been shown to work as well as or better than an unnatural one (ibuprofen). Only drugs, according to the FDA's legal doctrine, can prevent, treat, mitigate, or cure disease. If something does those things, it's a drug. And if it's a drug, it has to be tested for its ability to do those things. In this double-speak world, no natural substance can do anything significant against disease—that is, unless it undergoes testing as a drug. Attempts at slaying this many-headed monster of convoluted truths have only made it grow new heads.

For example, when backed into a corner over whether the public can be told of scientific studies showing the benefits of folic acid, fiber, omega-3 fatty acids, and antioxidants, the agency grew four new heads, each looking into the validity of the data for each of the four products. Should people selling cherry concentrate want to say something like, "Cherries may protect your brain from Alzheimer's disease," the agency will grow another new head to determine whether it's legal to say that.

Allowing "claims," as the agency calls them, is a tortuous process. First, somebody at the agency pulls all the scientific studies. (We don't know who, since my request to Barbara Schneeman, director of the Office of Nutritional Products, Labeling and Dietary Supplements at the Center for Food Safety and Applied Nutrition, went unanswered.) Then each study is rated according to criteria created by the agency (good study, bad study, etc.). Then all of the data are taken together and given an FDA "grade" (A, B, C, etc.). How "good" the studies are determines whether or not the public is allowed to hear things such as cherries may help prevent type II diabetes.<sup>2-4</sup> Only data from large, controlled studies with findings that are "not likely to be changed by new and evolving science" will receive the FDA's highest "A" rating and be unleashed on the public.<sup>5,6</sup> It's hard to resist saying that most drugs would fail this test, since evolving "post-marketing surveillance" is exactly what the Food and Drug Administration relies on to pull killer drugs off the market. Without updated data, the FDA couldn't act to protect the public.

It might be quicker and cheaper for the cherry industry to file "new drug applications" than to deal with a new monster head every time someone in industry wants to inform the public about a potential health benefit. Although Food and Drug told me that it "supports giving consumers as much information as possible to make the best dietary choices," its "warning letters" to the cherry industry make clear it wants the opposite

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### THE TRUTH ABOUT CHERRIES

Let's slice through the cobbler and look at some cherry science. First, the USDA-funded studies determined that:

- cherries have a low glycemic index;
- cherries are fat-free, sodium-free, and high in vitamins C, B6, E, and folic acid;
- cherries rate high on the ORAC antioxidant scale (128 units per gram).

The sellers of cherry products would also like people to know that cherries can relieve arthritis pain and may be good for blood sugar. Are these statements true?



In 2004, researchers from Johns Hopkins Hospital reported that phytochemicals in tart cherries suppress pain caused by inflammation about as well as the drug Indocin® (indomethacin).<sup>7</sup> Indocin® is a powerful nonsteroidal anti-inflammatory drug (NSAID) that can cause many side effects. The Hopkins report on tart cherries confirms reports from other countries showing that the same substance that makes cherries red makes inflammation *subside*.<sup>8-13</sup> That substance is called *anthocyanins*. Anthocyanins are related to proanthocyanidins found in grapes and other berries, but they're not the same thing. Anthocyanins are the red pigment in berries. They also make blueberries *purple* and blue corn *blue*. Anthocyanins (and there are many) compare favorably to ibuprofen and naproxen for pain relief.<sup>12,13</sup> Except for the Johns Hopkins study, which was done on rodents, most studies show the effects of anthocyanins in cells, not clinical effects in people. Do they work in humans as well as they do in rats?

The cherry industry gets letters saying things like, "I have been using the cherry concentrate for my extremely debilitating fibromyalgia pain for about three weeks and have noticed a significant difference." Is it true? Is it false? Who should be the judge? The FDA says it, the agency, should be the judge of the validity of such statements—that it will decide what's healthy and what's not healthy, not the consumer. I asked the Food and Drug Administration if it could tell us about any adverse reactions being reported for cherry products. I was instructed to file a request for that information under the Freedom of Information Act.

### CHERRIES AND MELATONIN

In 2001, a leading researcher reported that tart cherries contain relatively high levels of melatonin, a natural factor previously associated with sleep but now known to be a factor in immunity and much more.<sup>14-17</sup> A recent study shows how important melatonin is to health. For the first time ever, researchers report that people who have heart attacks have very low levels of melatonin. At the same time, they have very high levels of oxidized low-density lipoprotein (LDL) when measured at night.<sup>18</sup>



Eating cherries increases levels of melatonin. Researchers in Spain, China, and other countries have documented that melatonin suppresses cyclooxygenase-2 (COX-2), which plays a role in conditions such as Alzheimer's disease where it does damage, yet augments COX-2 in situations where it's needed, such as healing stomach ulcers.<sup>19-22</sup> In other words, melatonin is a "smart" compound in cherries.

### FAST-ACTING PHYTOCHEMICALS IN CHERRIES

Anthocyanins in cabernet sauvignon grapes reach the brain within minutes of ingestion.<sup>23</sup> Anthocyanins are powerful antioxidants. Could this be why people in Bordeaux, France, who drink three to four glasses of wine a day can reduce their risk of Alzheimer's disease by 70%?<sup>24</sup> Yes, says another study—flavonoids slash the risk of dementia by half (cherry anthocyanins are a type of flavonoid).<sup>25</sup>

And by accident, another potential benefit has been discovered. While looking for something in seeds that might *cause*

Parkinson's disease, researchers in New Jersey instead found that eating plums may prevent it-reducing risk by 76%.<sup>26</sup> Is it the anthocyanins again?



USDA researchers at Tufts University confirm that anthocyanins cross the blood-brain barrier. They fed them to aging rodents and were able to track exactly which part of the brain the anthocyanins ended up in.<sup>27</sup> Further, they showed that animals that were given anthocyanins in their diet could get out of water faster and better than those that were not given anthocyanins.<sup>27</sup> When the animals were tricked by the exit ramp being moved, anthocyanins reduced confusion and slowness. It's believed that anthocyanins *actually made the brain work better*. This government-sponsored research documents that factors in cherries go far beyond simply protecting against free radicals.

Anthocyanins protect against free radicals related to proteins as well as those related to lipids.<sup>28</sup> This means that cherries can protect heart muscle, skin, arteries, the fluid in joints, and more. It's "noteworthy" that although tomatoes are also red, their color comes from a different source. Their pigment is lycopene, a type of carotenoid. Lycopene blocks fat-related free radicals such as those that damage LDL.<sup>29</sup>

## UNHEALTHY POLITICS

The FDA has a legitimate interest in protecting the public from dangerous drugs and adulterated food. On any given day, it might decide, for example, that the danger of developing life-threatening liver failure from use of an attention-deficit/hyperactivity disorder drug called Cylert® outweighs the benefits (as it recently did). Or it might get a mislabeled anticoagulant monitoring unit called VeriCal® Calibrator Set off the shelves, as it also recently did. The mistakes and potential disasters are many-antibiotics put into the wrong capsules, asthma inhalants containing nothing but air-these and more have been intercepted by the agency.

But cherries? Given their potential benefits and lack of toxicity, it's reasonable to ask why the agency is spending enormous public resources threatening Michigan's cherry growers. The recent explosion of FDA-approved killer drugs suggests that the agency's overzealous approach to cherry products might be better directed at pharmaceutical manufacturers whose products are one of the leading causes of death in America. Adverse drug reactions cause more than 100,000 fatalities each year and send a million and a half people to the hospital annually.<sup>30</sup> Those are the documented cases; the actual number of people who become sick, hospitalized, or die from drugs is unknown.<sup>31</sup> Resources might be better spent requiring that drug manufacturers warn people that statin drugs deplete coenzyme Q10, which can cause deadly complications-something the agency recently refused to do.



At the same time the agency sent warning letters to people selling cherry products, it was poised to approve another new, potentially dangerous drug called Pargluva™. That approval has been suspended because concerned researchers at the Cleveland Clinic reevaluated the manufacturer's data and found that it increased the risk of dying 300%, and the *Journal of the American Medical Association* had the fortitude to publish those findings.<sup>32,33</sup>

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## References

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1. Thompson v. Western States Medical Center (01-344) 535 US. 357:2002.
2. Lindstrom J, Tuomilehto J. The diabetes risk score: a practical tool to predict type 2 diabetes risk. *Diabetes Care*. 2003 Mar;26(3):725-31.
3. Hanamura T, Hagiwara T, Kawagishi H. Structural and functional characterization of polyphenols isolated from acerola (*Malpighia emarginata* DC.) fruit. *Biosci Biotechnol Biochem*. 2005 Feb;69(2):280-6.
4. Montonen J, Jarvinen R, Heliövaara M, et al. Food consumption and the incidence of type II diabetes mellitus. *Eur J Clin Nutr*. 2005 Mar;59(3):441-8.
5. Available at: [www.cfsan.fda.gov/~dms/hclmgui4.html](http://www.cfsan.fda.gov/~dms/hclmgui4.html). Accessed December 5, 2005.
6. Available at: [www.cfsan.fda.gov/~dms/lab-qhc.html](http://www.cfsan.fda.gov/~dms/lab-qhc.html). Accessed December 5, 2005.
7. Tall JM, Seeram NP, Zhao C, et al. Tart cherry anthocyanins suppress inflammation-induced pain behavior in rat. *Behav Brain Res*. 2004 Aug 12;153(1):181-8.

8. Hou DX, Yanagita T, Uto T, Masuzaki S, Fujii M. Anthocyanidins inhibit cyclooxygenase-2 expression in LPS-evoked macrophages: structure-activity relationship and molecular mechanisms involved. *Biochem Pharmacol*. 2005 Aug 1;70(3):417-25.
9. Ueda H, Yamazaki C, Yamazaki M. A hydroxyl group of flavonoids affects oral anti-inflammatory activity and inhibition of systemic tumor necrosis factor-alpha production. *Biosci Biotechnol Biochem*. 2004 Jan;68(1):119-25.
10. Rossi A, Serraino I, Dugo P, et al. Protective effects of anthocyanins from blackberry in a rat model of acute lung inflammation. *Free Radic Res*. 2003 Aug;37(8):891-900.
11. Wang H, Nair MG, Strasburg GM, et al. Antioxidant and antiinflammatory activities of anthocyanins and their aglycon, cyanidin, from tart cherries. *J Nat Prod*. 1999 Feb;62(2):294-6.
12. Seeram NP, Momin RA, Nair MG, Bourquin LD. Cyclooxygenase inhibitory and antioxidant cyanidin glycosides in cherries and berries. *Phytomedicine*. 2001 Sep;8(5):362-9.
13. Seeram NP, Zhang Y, Nair MG. Inhibition of proliferation of human cancer cells and cyclooxygenase enzymes by anthocyanidins and catechins. *Nutr Cancer*. 2003;46(1):101-6.
14. Burkhardt S, Tan DX, Manchester LC, Hardeland R, Reiter RJ. Detection and quantification of the antioxidant melatonin in Montmorency and Balaton tart cherries (*Prunus cerasus*). *J Agric Food Chem*. 2001 Oct;49(10):4898-902.
15. Wu YH, Swaab DF. The human pineal gland and melatonin in aging and Alzheimer's disease. *J Pineal Res*. 2005 Apr;38(3):145-52.
16. Carrillo-Vico A, Guerrero JM, Lardone PJ, Reiter RJ. A review of the multiple actions of melatonin on the immune system. *Endocrine*. 2005 Jul;27(2):189-200.
17. Baydas G, Reiter RJ, Akbulut M, Tuzcu M, Tamer S. Melatonin inhibits neural apoptosis induced by homocysteine in hippocampus of rats via inhibition of cytochrome c translocation and caspase-3 activation and by regulating pro- and anti-apoptotic protein levels. *Neuroscience*. 2005;135(3):879-86.
18. Dominguez-Rodriguez A, breu-Gonzalez P, Garcia-Gonzalez M, et al. Elevated levels of oxidized low-density lipoprotein and impaired nocturnal synthesis of melatonin in patients with myocardial infarction. *Atherosclerosis*. 2005 May;180(1):101-5.
19. Hattori A, Migitaka H, Iigo M, et al. Identification of melatonin in plants and its effects on plasma melatonin levels and binding to melatonin receptors in vertebrates. *Biochem Mol Biol Int*. 1995 Mar;35(3):627-34.
20. Mayo JC, Sainz RM, Tan DX, et al. Anti-inflammatory actions of melatonin and its metabolites, N1-acetyl-N2-formyl-5-methoxykynuramine (AFMK) and N1-acetyl-5-methoxykynuramine (AMK), in macrophages. *J Neuroimmunol*. 2005 Aug;165(1-2):139-49.
21. Konturek SJ, Konturek PC, Brzozowski T. Prostaglandins and ulcer healing. *J Physiol Pharmacol*. 2005 Sep;56 Suppl 55-31.
22. Dong WG, Mei Q, Yu JP, et al. Effects of melatonin on the expression of iNOS and COX-2 in rat models of colitis. *World J Gastroenterol*. 2003 Jun;9(6):1307-11.
23. Passamonti S, Vrhovsek U, Vanzo A, Mattivi F. Fast access of some grape pigments to the brain. *J Agric Food Chem*. 2005 Sep 7;53(18):7029-34.
24. Letenneur L. Risk of dementia and alcohol and wine consumption: a review of recent results. *Biol Res*. 2004;37(2):189-93.
25. Commenges D, Scotet V, Renaud S, et al. Intake of flavonoids and risk of dementia. *Eur J Epidemiol*. 2000 Apr;16(4):357-63.
26. Golbe LI, Farrell TM, Davis PH. Case-control study of early life dietary factors in Parkinson's disease. *Arch Neurol*. 1988 Dec;45(12):1350-3.
27. Andres-Lacueva C, Shukitt-Hale B, Galli RL, et al. Anthocyanins in aged blueberry-fed rats are found centrally and may enhance memory. *Nutr Neurosci*. 2005 Apr;8(2):111-20.
28. Viljanen K, Kylli P, Hubbermann EM, Schwarz K, Heinonen M. Anthocyanin antioxidant activity and partition behavior in

wey protein emulsion. *J Agric Food Chem.* 2005 Mar 23;53(6):2022-7.

29. Visioli F, Riso P, Grande S, Galli C, Porrini M. Protective activity of tomato products on in vivo markers of lipid oxidation. *Eur J Nutr.* 2003 Aug;42(4):201-6.

30. Lazarou J, Pomeranz BH, Corey PN. Incidence of adverse drug reactions in hospitalized patients: a meta-analysis of prospective studies. *JAMA.* 1998 Apr 15;279(15):1200-5.

31. Gruchalla R. Understanding drug allergies. *J Allergy Clin Immunol.* 2000 Jun;105(6 Pt 2):S637-44.

32. Stein R, Kaufman M. New diabetes drug poses major risks, panel says: review finds FDA overlooked data on life-threatening cardiovascular effects of Pargluva. *The Washington Post.* 2005 Oct 21;A02.

33. Nissen SE, Wolski K, Topol EJ. Effect of muraglitazar on death and major adverse cardiovascular events in patients with type 2 diabetes mellitus. *JAMA.* 2005 Nov 23;294(20):2581-6.

34. Available at: <http://medicine.plosjournals.org/perlserv/?request=get-document&doi=10.1371/journal.pmed.0020241>. Accessed December 5, 2005

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