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## Interview: Dr. Martin Welt

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# 'Nothing but hypocrisy is delaying the benefits of food irradiation'

*Dr. Martin A. Welt, president of Radiation Technology, Inc., in Rockaway, New Jersey, has been the most active U.S. advocate of food irradiation commercialization since the late 1960s. Welt operates three plants in the United States to irradiate food for export, including strawberries, grapes, poultry, and fish. He also processes the irradiated food used by NASA to feed the astronauts. It was Radiation Technology's petition to the Food and Drug Administration that led to the FDA regulation last July permitting irradiation of spices.*

*Welt and a handful of other U.S. companies with irradiation facilities are ready to expand as soon as the proposed FDA regulation permitting 100 kilorads of irradiation becomes law. In early March, Radiation Technology successfully tested the irradiation of grapefruit for insect disinfection.*

*Welt was interviewed in his Rockaway plant by Marjorie Mazel Hecht, managing editor of Fusion magazine.*

**Hecht:** You've been one of the most active people in the country promoting food irradiation since at least 1968. Now that the Food and Drug Administration (FDA) is about to change its regulations, how do you see the expansion of the industry?

**Dr. Welt:** Obviously, I expect the industry to expand rapidly. We of course got approval from the FDA last year to irradiate spices, onion powder, and garlic powder. And when you see our plant, you'll see a huge shipment of dehydrated onion. . . . We have been doing a great deal of spices and onion powder, which is just an indication of what's to come.

I think the importance of the FDA notice of rulemaking, which we've waited three years for—and I have no idea why it took so long—will basically open the door now to irradiation of fruits and vegetables, for fumigation purposes as an alternative to toxic fumigants.

I gave a talk at Long Island University Business School about two weeks ago at a special seminar on new trends in food processing. I stated there that it is perhaps unfortunate that a technology as widely researched as this technology—more so than any other method of food preservation—should enter the mainstream of commercialization basically through the back door, *only* because there have been problems with

EDB [the pesticide ethylene dibromide, used as a fumigant for citrus fruits] or energy costs. It's unfortunate that this technology could not get into the mainstream on its own technical and economic merits, which it deserves to do.

**Hecht:** It's been 30 years now, hasn't it?

**Dr. Welt:** Actually, I just gave an interview to a Springfield, Illinois paper, and I pointed out to the reporter that it's 41 years—two score and one year ago.

**Hecht:** It's an incredible story, of a deliberate delay of a technology that could immediately increase the world food supply.

**Dr. Welt:** I can no longer even keep my cool; I believe it's a terrible scandal. There is no technical reason, there is no make-believe reason, there is just gross hypocrisy. On the one hand, one will talk about labeling requirements for irradiated food after one concedes it's safe and efficacious and wholesome. But then officials will stall things further with an open controversy: "Shall we label?" We say, if you put a label on foods which says "This is processed with radiation," many people will think the food is radioactive, which it is not. Therefore you're mislabeling food, which is a violation of government law.

And by the same token, with food that contains known residues of ethylene dibromide or other carcinogenic or toxic materials, nobody says anything about labeling it: "This grapefruit may be dangerous to your health." I've written recently to the commissioner of the Food and Drug Administration. I said, Why is it—just explain to me, I'm a scientist, so I can understand—that I can irradiate an absorbable [surgical] suture that's totally absorbed in your body, at a dosage level that's 30 times higher than the proposed FDA dosage limit for food? What difference is there in that absorbable suture, which is a biological material totally absorbed in your body, than if you eat that biological suture? . . . Or why can I irradiate a drug product, which is basically a natural laxative coming from organic materials . . . at 15 times higher than the FDA's approval for food? It's going into my system, I'm metabolizing it, I'm doing the same thing I'd do with it if I bought it in a bottle and I said, "This is a health food," or

something. . . .

I was invited to give a talk in Japan in December. I wondered why they would invite the president of a small U.S. company. I knew that they would not invite me there to embarrass me—it's not their style. They wouldn't invite me there to embarrass them—again, it's not their style. Therefore, they must have invited me there *only* to have me say what they knew in advance that I would say, because I've been speaking the same way at conferences around the world, and my colleagues in Japan know exactly how I express myself. . . .

I wrote my paper around four topics. I concluded that any one of these reasons was reason enough to warrant immediate commercialization of food irradiation. First and foremost is the area of food safety: There is no method of food preservation today that will so strongly affect matters concerning food safety—elimination of salmonella, elimination of other food-borne pathogens, elimination of trichina or other parasites. Therefore, reason enough for commercialization of food irradiation is food safety, public health. Second is reduction of spoilage. [New Jersey] Senator Bradley stated—and I used to think it was rather naive of him—that to solve the energy crisis, we needed to conserve energy. Let me say, by the way, that I was one of the first persons in the United States to license a nuclear reactor. That submarine over there [pointing to a photograph on the wall] is the *Nautilus*; I did the licensing on that nuclear submarine. So one doesn't have to tell me about nuclear power; I'm a very strong advocate of this, and I think the U.S. program has been virtually destroyed by thoughtless do-gooders.

But Senator Bradley was absolutely correct, and I can extend his theme on conservation into food: If you want to produce new food, the best and cheapest way to do so is to conserve the food you've already produced. Radiation preservation of food goes a long way toward extending the shelf life of food and reducing spoilage. This is important: it adds distribution to U.S. growers; it allows us to take food from areas of plenty to distribute in areas of need.

Third, energy: 16.5% of the energy consumption in the United States goes into food processing. This is one of the largest chunks of energy use in the United States, second only to automobiles. Well, if we can make an inroad into that energy consumption, we'd do a hell of a lot toward reducing our dependence on foreign oil. I have done my own studies—others have corroborated them—showing that the cost of radiation sterilization of food is something like one-sixth the cost of canning, one-fourth the cost of freezing. This includes the whole cycle—the whole process from production by the farmer, transportation, to distribution to the consumer. Again, that's reason enough to want to have food irradiation. . . . It's a rather large saving of energy.

The fourth reason is one of environmental impact. This area of technology does more to improve the ecology by avoiding the necessity to use EDB and phosphenes.

If you take all these advantages and you weigh them with the fact that, number one, the food cannot become radioactive, and two, the chemicals that are induced or changed in the food under radiation have been shown to be no different from the chemicals found in other processed foods or even from those occurring naturally in foods—that there are no such things as unique radiolytic products—then we're dealing with a technology that offers such degrees of safety to the consumer and advantage to the producers and distributors that it's just beyond belief that we are still playing around like a bunch of fools. We're trying to incur the good graces of the government that now gives us a 0.1 megarad approval, and we're supposed to say how pleased we are when we know that the hypocrisy is all-prevailing.

I was a member of the U.S. delegation to The Hague [at a 1982 international meeting on food irradiation]. I wrote the motion that led to the international standards for food irradiation, which is more than 10 times higher than the level [proposed by the FDA] here. I wrote that motion that was read into the meeting in the secretariat by the deputy director of the FDA Bureau of Foods. Now he obviously approved that; he read it, so he was condoning it. He does represent the FDA. . . . So some of our ranking officials have approved a dosage 10 times higher than what we're supposed to be very happy with getting here in the United States.

I'm hoping that Margaret Heckler, secretary of the Department of Health and Human Services, who's been an outspoken supporter of this technology, will help us regain world leadership by going from a 100-kilorad level to an unlimited 5-megarad level—or whatever it might be for sterile foods—and jump ahead of the world. If you want to look at overall safety of food, you might as well go to a sterile food product. If you go to a pasteurized product, the government always has questions—"if you reduce spoilage organisms in the food, is it possible that the food will look good and smell good but toxins will be liberated, and it's very dangerous." Well, we have done studies in this area; they have been published with the FDA as part of our petition on poultry, and it was shown that poultry purposely inoculated with *Clostridium botulina* type E, then irradiated to three-tenths of a megarad, then wrapped in Saran Wrap so it was anaerobic, and stored at 30° Centigrade, putrefied before any toxin was detected. So we know that the process is good, and we also note that the Canadians have approved the irradiation of poultry at seven-tenths of a megarad, which is more than twice—

**Hecht:** When did they do that?

**Dr. Welt:** Some time last year. The Canadians have also moved to remove the stigma of food irradiation being an additive; they now consider it a process. The Canadians have also announced that they plan to irradiate all 2 billion pounds of poultry raised in Canada annually.

So these are my comments about food irradiation.