

Trends in the Cactus Food Industry

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In February 1997, I was invited to Crete for a 50th Celebration of the Mediterranean Diet.

This celebration and analysis of the Mediterranean diet was initiated by the Rockefeller Foundation, which, in 1947, examined the food habits of 12 families for 1 month. The people in this region needed fruits that had good keeping qualities without refrigeration.

The “Old Ways” group of Boston was responsible for introduction of the Mediterranean diet into the United States. Recently, Old Ways introduced food pyramids and lifestyles for the Latin American diet. In this diet, cactus is one of the vegetables that is encouraged from the perspective of providing vitamins and fiber. The latter is particularly important in reducing the risk of having colon cancer.

In addition to my presentation in Crete this year, I was invited to speak and demonstrate various culinary techniques in Santiago, Chile. The objective in Chile was to acquaint more people with the variety of foods that could be prepared with cactus. I was fortunate to be featured in a full-page article in *El Mercurio*, their largest daily newspaper. Such an article would not have been possible without my contacts in the PACD, specifically, Carmen and Isabella Saenz.

In my opinion, the number one use for the fruits will be for puree and for use in sorbets, desserts, and drinks. For these, the red color of the beverage is very important. Grape juice and apple juice can be folded in to enhance the flavor. Cactus-fruit juice has a huge potential as a colorant, if nothing else.

The seeds of the cactus fruit also have enormous potential. D'Arrigo Bros. produce a “bird-seed blend” of cactus seeds that have some pulp on them. I prefer to cook with the seeds that have this pulp attached. I have stopped extracting oil from the seeds because I did not have a hydraulic press or a technique for solvent extraction. Nevertheless, I believe the cactus-seed oil is of very high value, perhaps similar to avocado-seed oil.

With regard to nopalitos, I helped establish a new Texas-based HEB grocery store in Monterrey, Mexico. This store, which was located in an upscale area of Monterrey, had one lady cleaning spines from nopalitos all day long, and there was a line of people waiting to buy the nopalitos. In contrast, we have a very long way to go in the United States to overcome the cultural barrier of eating nopalitos.

When I am interviewed by TV hosts, I offer them the 1308 spineless nopalito to eat. To help make eating nopalitos more familiar, I have prepared french-fried nopalitos and pickles from nopalitos. I find the potential use of the mucilage in the nopalitos very interesting. If you macerate the nopalitos and let them sit for an hour, the mucilage will rise to the top. This mucilage can be whipped like egg whites to be used as a binding agent for fresh sage, garlic in roast pork loins, or in fish. The mucilage helps to hold in the flavors. We can enhance the dish without oils or other fats. I have also used nopalitos in lean sausage to create the mouth feel

without adding fat. Fat-free sausage is very important in today's low-fat consumer-conscious food industry.

The gums from cactus may have considerable utility in industrial food applications. In this case, the gums might be substituted for guar gum and xanthan gums used as thickeners in soups, salsas, and other applications.

Cochineal dyes have a role as a colorant in the food industry because they are a natural red dye that is not subject to the same restrictions as the synthetic dyes.

Dyes could also be obtained from the fruits. It is interesting that in the summer, desert tortoises have red stains on their faces from eating wild tunas.

This last summer I met with Jorge Enrique Luna from Zacatecas, Mexico, to evaluate the possibility of using wild tunas in food products. I received three canned samples of wild fruits of tapona, cardoon and ????. Wild fruits may have a marketing advantage as these fruits have more of an "organic" connotation. These three products were quite different in viscosity and color.

In my opinion, there is also great potential for production of pitayas as a fresh fruit. The pitayas have beautiful large fruit with small seeds that can be eaten without any problem. In some cases, you can get a crop of pitayas in as little as three months after planting. However it is important to note that there are many very different kinds of pitayas belonging to different genera and you may be served radically different kinds of fruit when asking for a pitaya. One type of pitaya in Mexico bursts soon after it is picked. Other types of pitayas are red or yellow with large "flappers." A USDA study in Colombia found that pitayas could surpass sales of papayas within 10 years. From a chef's perspective, it is critically important to know the cost and availability. If the chef buys it for \$2 each, he must sell it for \$6. A puree from pitayas could be very exciting and promising.

Although cactus has a very substantial positive association in Japan for many applications, nopalitos are not generally eaten in the United States. I believe the latter perspective can be changed very rapidly if I have an opportunity to show North Americans how to cook rice with nopalitos.

This last year, I was included on a PBS cooking show for 25-million viewers. In February 1998, I will be taping for a show for 50 million viewers. Thus, it is important to get our cactus products ready so I can help promote them on nationwide PBS television. I am also assembling a library of magazines that deal with cactus recipes that will also be helpful in promoting our industry.

As a chef, I have found this annual PACD conference very useful in providing the technical background on pH, acidity, and other food characters, which allows me to communicate more effectively with commercial buyers. Of the new breakthroughs on the market, I think the food puree produced by D'Arrigo Bros. is most exciting because it makes cactus fruit without any chemical additives available year round. This has been a huge investment by D'Arrigo Bros., but I am sure it will pay off with great new products.

The efforts that we in the PACD have put forth are producing worthwhile, exciting, and rewarding results.

