

The National Technology Roadmap for Tree Fruit

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The roadmap initiative began to form during the 2000 crop marketing season when Chinese Fuji made strong penetration into the Pacific Rim markets. Their product was delivering into the market at a price less than the freight cost for US product. The Pacific Northwest tree fruit industry was witnessing symptoms of significant economic stress. A considerable number of growers and packers were careening into bankruptcy. Land values were dropping and all costs, especially labor, were increasing while returns were declining. Trends were taking shape that even more global competition was just around the corner.

Washington producers Dave Allan and Charlie de la Chapelle began examining what Chinese Fuji might be priced delivered into western North America. Their conclusion was that US apple producers would need to reduce cost by more than 30% while making substantial gains in product quality to be competitive in the world marketplace.

The vision statement, "For the U.S. tree fruit industry to compete globally, it must reduce the cost of production of its highest quality fruit 30% by the year 2010," has met animated discussion in many corners of the tree fruit industry. The 30% number is a compromise between the realists believing the industry should take over 40% of the current costs out of the system and the other realists who are convinced that, due to the capital costs of technology, 30% is not achievable. Another group, whom I call the consumer-oriented producers, do not think the vision statement has adequate focus on quality.

Over the last couple of years, discussion often tried to identify particular systems or methods that can lead to improved efficiencies or lower cost. A premise of the technology roadmap is to replace or remove cost centers as

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quality is enhanced. For example, pruning costs will be difficult to reduce 30% in open vase or central leader planting systems. Orchard systems which do not utilize permanent lateral branches (super spindle format) may not need the kinds of pruning currently done in the larger tree formats and may even be done autonomously by machine. We may soon have a number of technological tools to assist in crop load management practices that will remove hand thinning from the production system and efficiently quantify the leaf-to-fruit ratio. In cherries, there are varieties that naturally loosen from the stem and can utilize the new "stemless" cherry harvesting technology. This genetic trait should be combined with other traits such as time of ripening, self-fertility, rain tolerance, brix and fruit firmness.

Many of these changes might come to the industry without a national program infusing significant new funds into the research and development effort. Will the technology arrive in time? Not at the current R&D funding level.

The roadmap is a process to first identify many of the possibilities of research. The next step is to seek adequate funding to accomplish the projects with greatest impact potential. The initiation and funding of projects process will

need to be quite different than done in the past. Much more coordination will be incorporated into the process to reduce duplication of effort. Private-Public partnerships will be formed to facilitate technology transfer.

The ultimate solutions to disease and pest control may be several years away. Technological changes may dramatically change how the industry monitors pest and disease populations and how an orchard is treated to control pest or disease outbreaks. Wireless communications and improved mapping software will allow more information to be graphically displayed or mapped. Small communities of areawide pest management can be easily set up and managed.

The consumption of apple and other tree fruit products has been pretty flat for the last ten years. We have been losing market share of the total food dollar. There is a clear need for more product R&D to improve the quality of what is currently grown and to introduce new items, fresh and processed. The utilization of tree fruits is a difficult research area to visualize. Marketing new products can be expensive with the results less than desired. However, not to try is a form of quitting. The global food industry is constantly changing. The tree fruit industry must increase the pace of change to keep our current market share.

In early March 2003, a national workshop will take place to examine the research opportunities and begin the prioritization process. In the 2005 federal budget cycle (one year from now), we hope to have a robust plan and appropriate funding request ready to submit to Congress. The plan will have details of who reviews projects and approves funding.

We are confident that by utilizing focused research and development initiatives the tree fruit industry will be globally competitive with a more certain future.