munity on the efficiency of processing plant material through quarantine. Questions which have arisen recently from the pome fruit community include the following:

- Why can tree fruits be processed through NRSP-5, Prosser faster than can be done in PGQO, Beltsville? Why are the virus testing protocols different in these locations, although both are granted departmental permits?
- Why have no field test results been available on pome fruits at Beltsville for the past four years? Why has the last release of pears (unconditionally) been in 1987?
- How can the U.S. fruit researchers and industry keep up with new cultivar and rootstock developments in other countries without being able to trial them under climate conditions in the U.S.? We are about 5 to 7 years behind the Europeans by some estimates.
- Can additional foreign certification programs be accepted as post-entry quarantine sources? What is the process to get them approved?

With these questions in mind the American Pomology Society has asked a panel composed of a broad range of interests regarding fruit quarantine to present their views. The panel includes representatives from APHIS, ARS, NRSP-5, an emeritus professor experienced in plant collection, and a commercial nurseryman. The objectives of this discussion were to:

- educate researchers, growers, and the public, concerning plant quarantine regulations.
- highlight specific difficulties in plant importation during the past ten years
- provide suggested steps on improvements in the quarantine system.

Recent administrative changes have occurred in the supervision of the Plant Germplasm Quarantine Office, Beltsville, Md. Also, new molecular techniques for the detection of pathogens have recently been discussed at the Fourth International Symposium of Virus Diseases which occurred in Bethesda, MD in June 1997. For some pathogens, detection time has been reduced from three-year field tests to one-day laboratory tests. The time is right for this discussion regarding changes in the plant quarantine system for the United States.

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Fruit Varieties Journal 52(4):212-214 1998

The Needs of the Fruit Industry in the U. S. for the Important Testing and Release of New Cultivars: An Industry Perspective

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Abstract

The United States fruit industry is finding that the world fruit markets are becoming more competitive on an international level. The need to stay current with the national and international market demands are quickly becoming a reality for the future existence of our fruit industry. The breeding programs around the world are competing for these consumer demands. Our ability to rapidly import, evaluate, and commercialize these varieties will have a major impact on the success of the United States fruit industry to remain in business and make available to their customers both domestic and international what they require for the 21st century. The current plant introduction systems need major overhaul to speed the entry of new genetic material into our country.

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Tree Connection is involved in the sales representation of over 25 nurseries. We also import nursery stock from Europe and work to test and promote new varieties.

From my perspective of variety introduction into the United States, there exists many problems that have made it very difficult to import new varieties. We see the following major points that have an impact on the future of the fruit industry:

- There is a big need for the importation of new varieties.
- There is a weak link in the plant introduction system
- The fruit industry would like to see quick and effective improvement in the plant introduction system which will have a big impact on their future success.

Let's start with the first point concerning the need for new varieties as related with the apple industry. Within the past 10 years massive shifts in consumer demand for new varieties has occurred. The introduction of 'Fuji' from Japan, 'Braeburn' and 'Gala' from New Zealand, and 'Granny Smith' from Australia make up a large percentage of apples consumed. Almost all 'Fuji' and 'Braeburn' strains were imported illegally. Growers would not wait for our plant introduction system. We now have thousands of acres of different 'Fuji' strains originating from undocumented apple wood sources. Whole sectors of our industry are dependent on new varieties from undocumented sources. These same problems exist with other commodities for example: Asian pears. Budwood is usually brought into the country and the nurseries are asked to propagate the trees not knowing the background of the budwood. The nurseries usually have no idea of the wood source or virus status. The nurserymen are not comfortable with the situation currently because they wait years for the varieties that growers bring in through the mail. We now see large blocks of variety trials from undocumented wood in growers orchards. Instead of being on the cutting edge of variety development the nurserymen must go to the illegal importers for variety information. In an industry risk evaluation, it would be better to speed the legal introduction systems, taking slightly more risk of pest introduction, than to suffer the risk of wholesale importation of undocumented varieties.

The importance of new varieties to our industry is big. I know this because I am personally working on varieties that:

- have superior production efficiency
- have resistance to insects and plant pathogens thereby greatly reducing the need for pesticide application
- have superior flavor and storage qualities
- rootstocks that will reduce labor, resist pathogens, and are very yield efficient.

The industry cannot afford to fall behind the world waiting several years for our plant introduction system. The growers know the importance of new varieties and rootstocks to their business and cannot afford to be left out of the market system.

Consider these points:

- Most of the best tree fruit breeding programs are now in foreign countries.
- The demand for new varieties is increasing on a world basis.
- Our industry is now dependent on export markets of newly introduced varieties to survive. What will be the next Fuji?
- The United States is very competitive on a world basis for production costs and given the chance to compete with new varieties, the United States growers will do well.
- New rootstocks and varieties will be the largest factor in the success of orchards now and in the future.
- Genetic advances are significant and offer hope for future changes.

The rate of change into new rootstocks and varieties is at an all time high. The need for rapid change in future selections will have a big impact on the fruit industry. With all this happening we have a weak link in the variety importation sys-

tem that needs correction quickly so that future goals and objectives can be met. Lets look at the importation options from the viewpoint of the nurseryman.

The most common system is the post-entry quarantine system. This system has worked great except if the variety is from one of the non-participating countries or it is not certified to meet the U.S. standards. Usually most elite new material cannot come into our country this way.

So now we have the National Research Support Program-5 (NRSP-5) which works except for two problems:

- Cost of $1,000 per clone
- It takes two years or more

Most nurserymen will not participate with this system for the above reasons unless the variety has a big economic potential that is known.

So now we are left with the Plant Germplasm Quarantine Office in Beltsville, Maryland, that many nurserymen have been unable to utilize effectively. This system is free but the chances of getting anything through in a reasonable time, if at all, is slim. Most nursery people that I contacted do not want to waste time with this system.

The fruit industry needs and deserves a better system of plant introduction. The weak link on our current systems will have the effect of:

- slowing down our industry making it less competitive to meet the future consumer demands.
- reducing possibilities to increase efficiencies of our production systems especially with respect to labor.
- The risk of importation of pests is currently greater with the large amounts of undocumented entries.
- Our researchers will waste time and efficiency while waiting for varieties crucial for their breeding or trial work.
- Our consumers will be denied the opportunity to experience exciting, superior varieties coming from breeding programs around the world.

I have visited with several leading nurserymen and asked them if they agree with the following points that will help improve the situation. Here are the ideas that the nursery industry would suggest that should be considered in the reformation of the plant introduction system.

1. The budget for the USDA to handle plant introduction be expanded. This would include money to create and test new methods for plant introductions.
2. Expand the list of post-entry quarantine releasable countries. Certify all the countries that meet our certification qualifications as soon as possible.
3. It should be a goal to release plants on a provisional basis within three months after the budwood is received if the material contains no exotic harmful viruses.
4. It should be a goal to have a full release of fruit varieties within one year if there is no requirement for heat treatments.
5. The field indexing of fruit varieties for the USDA Plant Germplasm Quarantine Office be done in Prosser, Washington, where the climate and work force are more favorable for these procedures.
6. That it be APHIS's goal to achieve zero tolerance for risk of introducing plant pests and diseases, but that this goal be more realistically balanced with the need for plant introduction and threats to industry.
7. That someone in APHIS and ARS be held accountable for the results of the actions of these groups to achieve their stated goals. If the results are not achieved, then swift action must be taken to correct the situation.
8. That a committee of scientists meet once each year to evaluate and report on the progress of APHIS and ARS to correct any deficiencies of their organizational efforts to achieve the stated goals.