Marketing Horticultural Crops Globally: Introduction and Perspective

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The profitability of a business, or an entire industry, is affected by many factors, including product quality, production costs, personnel productivity, and marketing. Generally, key business functions relate to financial controls, production, or marketing. Many of our horticultural businesses in the past have focused on production-related issues. Interest in crop production is a key reason many business owners enter the horticulture field. Emphasis on production by our industry has probably contributed to the production-oriented nature of the U.S. university research and extension programs. Together, industry and university support programs have made great strides to improve production efficiency and the cost-competitiveness of our industry. More recently, these goals have been accomplished while dealing with increased regulatory pressures, such as run-off water quality and pest constraints.

As the economies of business, industries, and countries are affected increasingly by global events, individual businesses will have to be more competitive in the marketing area. Many of our horticultural industries have enjoyed captive audiences in the United States. Our country has a large consuming public with relatively limited imports. In recent years, we have seen increased imports of cut flowers change our floriculture industry and greater worldwide movement of apples force growers to change varieties more often. The continued growth of our horticultural industries may depend on our ability to 1) deal with increased competition from imports, and 2) development of viable export markets.

The horticulture industry in the United States is addressing both the import challenges and the export opportunity. In addition to meeting the challenge of flower and apple imports, producers have developed export markets (grapefruit) and complemented the supply of domestic fruit and vegetables with off-season imports from Central and South America. The passage of the North American Free Trade Agreement promises to open new opportunities and challenges for our industry. Production of some horticultural products will probably move from the United States, but other opportunities will be created in the shipping and distribution of imports. The market place in the United States generally rewards products with the highest quality and most-competitive price. With diminishing barriers, competition will be greater and change more frequently and rapidly. These trends do not automatically mean the demise of domestic producers. For instance, cut flower growers have been under tremendous pressure from imports, and many have had to shift to other products. In the past several years, however, there has been an evolving specialty cut flower industry in the United States. Local producers of varieties generally not available in other countries are able to supply high-quality product. For U.S. horticultural industries to compete and prosper, they will have to be cost-competitive, deliver top-quality products, and market effectively.

With the changing demands on our horticultural industries, the scientific community (university and research personnel, USDA research labs, and industrial research labs) will need to enhance our already close working relationship with industry clients. We must be willing to change. We must be willing to focus on the needs of the industry even if it is not consistent with our comfort zone. We may need to shift some of our research focus to marketing-related problems. Increased emphasis on marketing issues will not necessarily mean abandoning production-related research. For instance, global movement of products will require new methods to maintain product quality. Research and education programs that facilitate marketing efforts should greatly benefit our industry.

The United States has a strong research base to support our horticultural industries as they seek to capitalize on international opportunities. Globalization of the horticultural industry represents an opportunity for the scientific profession to demonstrate that technical expertise can be applied equally effectively to marketing and production needs. This requires a close working relationship between the industry client and the scientific professional.

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Opportunities for Optimism: Marketing U.S. Horticultural Crops Globally

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Horticulture has entered the decade of the 1990s with a different set of priorities and opportunities for its crops and knowledge. The crops grown by horticulturists, other than perhaps potatoes (Irish and sweet), are seldom the primary contributors to our protein and energy requirements. Our crops are purchased for taste, vitamins, minerals, color, fiber, form, aroma, low calorie/low fat, and tactile sensations, as well as for environmental influences of absorbing carbon dioxide, releasing oxygen, detoxifying pollutants, recycling water, insulating spaces, stabilizing terrain, shading residences, enjoyment, relaxation, aesthetics, and real-estate value enhancement.

Horticultural crops can be grown by every inhabitant of our globe. However, they are produced most favorably in only a few sites of temperature, light, elevation, soils, and water. The United States, with the great diversity of climates, can efficiently produce somewhere in our 50 states any horticultural (as well as agronomic) crop. The United States has the traditions and technical expertise of publicly funded research, teaching, and extension programs in both state and federal institutions to support expanding production and export of crops.

Opportunities for optimism extend beyond our excellence in the traditional horticultural crop production. U.S. horticulturists also have the privilege of having the largest, most-diverse, best-funded, wide-ranging research and extension program for agriculture in the world. It is publicly funded, and is free on request, to all our citizens. Never in all of recorded time has such an apparatus existed to deliver the discoveries and technologies of horticultural excellence to any nation.

Tough times began to appear in this apparatus in the mid-1980s, when our views of agricultural science, our responsibilities to the environment, and our planning for future generations changed drastically. The costs of science for science's sake, without an immediate objective and payoff, could no longer be funded in a nation with declining revenues in relation to the escalat-

USDA/ARS, Florist and Nursery Crops Review, Beltsville, Md.

ing costs of labor, supplies, and equipment. Also, the consumer became acutely sensitive and critical of horticultural products in which their only obvious characteristics were that they were blemish-free and available (at a price) year-round. In the 1990s, all products have to be environmentally sensitive and active forces restoring our ecosystems.

Horticultural research institutions also changed with the availability of scientists who were trained to manipulate genes to create new kinds of plants impossible to achieve with traditional breeding/production methods. The scientists were able to make rapid progress based on the legacy of the past generations of horticultural scientists. The biotechnically trained scientists applied the new science techniques to crops that had undergone relatively little genetic improvement from traditional scientific approaches. They also were rewarded with use and utility patents, which allowed them to share in the financial rewards realized from their scientific skills. Our scientists, for the first time, became involved in the entrepreneurial side of agri-business. Profitmaking from their intellectual properties and inventions also meant that, for the first time, publication in a referred journal for tenure and yearly bonuses were questioned as a priority behind licensing of their findings for restricted uses. There is no way to project into the future what these shifts in scientific policy for publicly funded research in horticulture ultimately will mean. Yet, the new, never-before-considered ingredients can foster export of our crops to all areas of the world.

The potentials to export horticultural crops will require a totally new mind set for our research scientists, producing industries, and marketing organizations. The type of cooperative development that has brought success to the export of Dutch iris bulbs from the northwest and acclimatized tropical foliage plants from Florida should serve as a model for all horticultural crops. Missing in many of our horticultural industries are partnerships among our scientists, producers, and marketers. We must marshal our human resources to create total team approaches where every player buys into common goals and problem-solving processes. It also will mean the integration of a diverse workforce and innovative incentives to attract and retain key employees. Horticultural industries must adopt standards for quality to constantly seek ways to improve them and to adjust/track the performance of the horticultural products as they meet the demands of a highly varied international market. We shall need to strengthen our relationships with the consumer through the pursuit of innovation, needs-based selling systems, and target-based marketing programs. Reliance on database technologies for monitoring inventories, customers, the economy, or market shifts must be established nationally for export programs to be successful. We shall need creative financing practices to support market expansion and investment strategies to maximize earnings and improve net worth. We need to learn how to deal with many different kinds of currency. Contingency financial planning to survive during inevitable cash flow situations will become part of our routine. The merger of facilities, people, and processes to achieve increased output, timely and consistent delivery, and increased cost efficiency will be the desired goals for our total quality management (TQM) program for the export of horticultural crops and products. Horticulturists also will have to seek product identity with trademarked names and logos, information sheets, and promotional activities. As it now stands, the patent and variety protection extended to recently introduced cultivars does not have automatic reciprocity in other countries around the world. Control and reimbursement of intellectual properties around the world is a critical issue regulating international movement of horticultural crops. The other issue is the risk assessment of introduction of exotic diseases and insects into the environment. All of these aspects must be decided and maintained through international diplomacy. Agricultural products, even in the conditions of today, are contributors to the national balance of payments. Horticultural crops also can play even a greater role in contributing to international trade.

Research horticulturists, by tradition, always have separated themselves from the marketing process for their products. This must change; otherwise, the new plant products and processes could be considered whimsy or fashion-driven. This symposium addresses specific approaches for specific crops. I relate herein my activities for the National Chair for Florist and Nursery Crops Review. Working on the National Program Staff of the Agricultural Research Service, USDA, I was asked to put together a research, marketing, and export plan for florist and nursery agriculture (F&NA). The proposed format is to be followed for the national assessment of other crops.

Florist and nursery agriculture

- Florist and nursery agriculture (F&NA): The florist and nursery industries are composed of eight primary segments: florists, nursery operators, arborists, landscape architects, ground maintenance specialists, garden designers, turf producers and managers, and garden center operators.
- Farmer cash receipts of F&NA in 1990 were estimated at $8.145 billion, according to USDA's Economic Research Service (ERS).
- F&NA accounts for 10% of farm crops cash receipts—ranking ahead of such major plant crops as wheat or cotton.
- F&NA produce thousands of cultivated plants on ≈450,000 acres, on locations throughout the United States.
- F&NA employ about 43,000 persons year-round and nearly 102,000 during peak seasons. At the retail and landscape maintenance level, more than 500,000 persons are employed.
- At the retail level, F&NA added an estimated $45 billion in consumer expenditures. This does not begin to cover the sales of "hard goods," related items, and services.

Capacity for growth

- Annual growth rate for the F&NA is the fastest in agriculture at 10% or higher, and it is projected to be in double digits throughout the 1990s.
- The critical roles of F&NA of providing plants to modify, detoxify, and ameliorate urban and rural environments are expanding greatly the marketing potential of landscape plants in the United States.
- The potential for U.S. farmers to produce and market F&NA with the principles of sustainable agriculture will expand greatly the profitability of the family farm, and greatly accelerate the wellness of our farm communities.
- The emerging opportunities to export elite plants of F&NA to world markets have only been tapped with a few crops. Our industries must have capacity and new research to expand production and marketing of stress-resistant, energy-efficient cultivars.

Facts associated with F&NA

- F&NA receives no direct federal subsidies, production, marketing incentives, or export enhancements from the U.S. government.
- F&NA is the number one hobby of U.S. citizens. Plants and planting activities promote emotional and physical well-being. It is one of a few activities that all people, regardless of circumstances, can experience and achieve desired results—even with limited resources.
- F&NA is one of the few segments of American agriculture that can be practiced in all 50 states and 83,000 communities, thus providing year-round employment, cash flow, environmental containment, and constantly changing displays and havens for wildlife.

ARS created a National Chair for florist and nursery crops to review and assess the needs for research. As a part of the review process, the administrator of ARS requested a thorough survey of the ongoing research projects in state, federal, and private/nonprofit organizations. Because the traditional CRIS retrieval system does not capture all of the research programs due to the arbitrary coding procedure, it is essential to go directly to research scientists to record and analyze the ongoing programs. Also, recent retirements, reduction, or elimination of programs because of diminishing funding, and the realignment of groups into plant science departments have changed radically the number, location, and scope of research programs.

The changes in the federal (USDA) and state programs are so rapid that baselines must be

established as soon as possible to build national research programs through convocations at Beltsville, Md., and at other locations around the United States. Thus, it is urgent that we locate all of the research scientists as soon as possible to analyze their current programs, invite them to regional convocations, and to serve on panels on their research specialities to propose solutions and approaches to solve the critical research needs.

The USDA created the National Chair for Florist and Nursery Crops Review to:

- Review: Staff, funding, facilities, and research priorities for federal and state programs.
- Assess: Current research priorities and initiatives proposed by professional societies and user groups.
- Evaluate: Current funding of research by the private sector.
- Analyze: Projected needs and regulations for the international trade of florist and nursery crops.
- Analyze: What is the size/economic force of the florist and nursery (landscape, arborist, and environmentally oriented) industries?
- Develop: What are the potentials to use Capacity Building Grants or other cooperative programs with 1890 institutions to expand research, marketing, and training programs for florist and nursery crops?
- Assist: Identify opportunities for cooperative research agreements with the private sector.
- Represent: Work with cooperating professional groups and user organizations to present the achievements of ARS' research and to aid in technology transfer?

In order to assure the progressive and orderly development of a national research, marketing, and export plan, there is a need to assess and develop strategies to address the opportunities and constraints for this sector of agriculture.

Steps

1) Form coalition of 60 trade and professional organizations relating to F&NA to review proposals and develop an implementation plan.

2) Create a Directory of Research Scientists working in F&NA [published by *Grower Talks* (Apr. 1994)].

3) Analyze research projects in the CRIS systems.

4) Kickoff event was held at the National Arboretum, Washington, D.C., 9 Apr. 1992.

5) Convocations (workshops) across the United States. Sites: California, Delaware Valley, Florida, Great Northwest, Hawaii, Illinois, Long Island, Michigan, Minnesota, North Carolina, New York, Ohio, and Oregon.

6) Proceedings of the Convocations: Regional convocations–reports; consensus proposals; responsibilities of federal, state, private, and foundation action plan in the lay terms [published by *Grower Talks* (Apr. 1994)].

7) Action: Continuous throughout the decade [published by the American Floral Endowment (Sept. 1993)].

Plants for the year 2000. Our research and marketing programs will be centered around the following activities:

- The National Chair will prepare a public report that assesses the research, marketing, and export responsibilities and opportunities for federal, state, and non-profit organizations.
- The role of government in florist and nursery agriculture as a viable source of economic development will be examined by all interested groups in public workshops and a national agenda will be proposed.
- The critical role of landscape plants in urban life in restoring our environment will be supported thoroughly with expanded research information.
- A national plan must be proposed to permit florist and nursery agriculture to produce plants with the highest consumer acceptance and performance.
- The concepts from the research entitled "Clean Air Machines" will require complex teamwork to understand the interactions of the plant with its environment.
- The potential for U.S. farmers to produce and market florist and nursery agriculture with the principles of sustainability will increase the long-term profitability of family farms.
- The emerging opportunities to increase the export of florist and nursery crops will prosper with the expanded research information.
- The report will be useful in public action to guide the course of florist and nursery agriculture in the United States for the next decade.
- Based on needs assessments, workshops held at Beltsville, Md., and regional meetings across the United States—the green industries will together develop a national research action plan. Opportunities will be provided for scientists and industry personnel to express their opinions as to the main efforts, and the substitute technical approaches.
- Activities to optimize the objectives and miscellaneous related activities. The recommendations from the workshops will be summarized and distributed in science- and lay-oriented initiatives for all to use in a coordinated way to support the expanding research, marketing, and export potentials of florist and nursery agriculture.

The plan for the Chair offers opportunities for hundreds of professionals from all segments of the expanding green industries to help set the future course of research. The plan, published in Sept. 1993 by the American Floral Endowment, charts the specific research needs for the advancement of knowledge, the teams required to deal with the complexities, and promotes cooperation among all users of the information. We do have opportunities for optimism.

Closing the Circle: Exporting Florida Grapefruit to Japan

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Christopher Columbus is generally credited (perhaps apocryphally) with bringing citrus to the New World in his search for a route to the Far East, specifically Japan. Ironically enough, citrus, which started out in Asia, has now come full circle, with massive shipments of citrus products from the United States to Japan and other parts of the Far East, some 500 years after Columbus' unplanned, but fortuitous, discovery of what would turn out to be the finest region in the world for the production of all types of citrus.

Grapefruit, Florida's largest and most successful agricultural export, is a relative newcomer to the citrus industry. Grapefruit appeared in the Caribbean, most probably as a spontaneous mutation on the pomelo. Pomelos had been brought to the Caribbean most probably in the 1640s, from Indonesia by a British sea captain. The first mention of grapefruit in the literature came in 1750 in Barbados and referred to a variety of pomelo known locally as "forbidden fruit." The first time the actual term "grapefruit" was used seems to have been in Jamaica in the early 1800s, when it was noted that the fruit tended to grow in clusters, like grapes.

In 1823, Count Odet Philippe, a relative of Louis XVI and schoolmate of Napoleon, who had spent several years imprisoned in the Caribbean by the British, emigrated to Florida and settled in the area of Tampa, bringing with him the first known grapefruit seeds to be planted in Florida.

For most of the 19th century, grapefruit languished in Florida. In the 1880, however, due to its perceived value as a healthful tonic useful for treating influenza, grapefruit began to be grown commercially and shipped to northern markets such as New York and Philadelphia, where, by 1895, it was selling for as much as $20 a box. The high price and the continuing demand for the product helped establish grapefruit as a integral part of Florida's citrus industry. Florida grows 50% of all the grapefruit in the world.

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