CONFERENCE BULLETIN

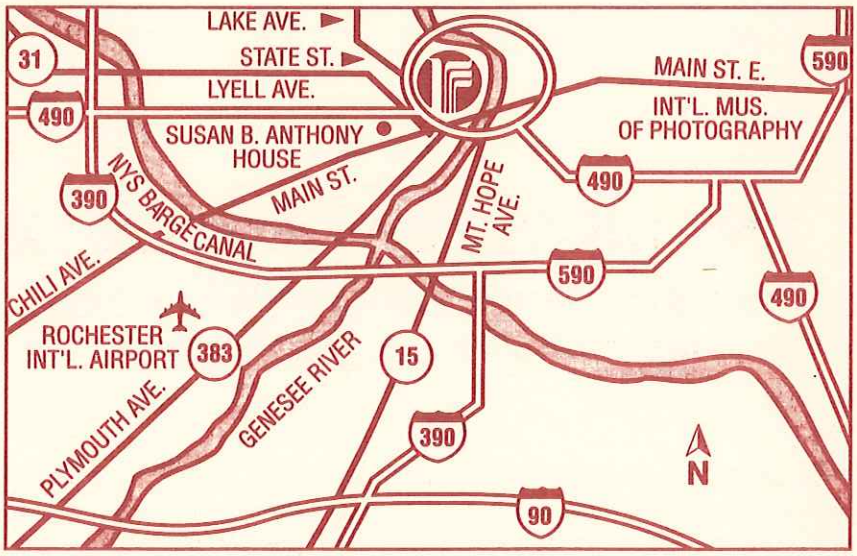
40th Annual IDFTA Conference ▪ February 22-26, 1997 ▪ Rochester, New York, USA

Conference Special | Compact News | January 1997

ROCHESTER...HERE WE COME

For The 40th Annual IDFTA Conference!

Once again, arrangements have been made for another exceptional conference. We've lined up a program chock full of information that will benefit you for the rest of your fruit-growing career! The **40th Annual IDFTA Conference** will start with an extra all-day pre-conference tour on **Saturday, February 22** and conclude **Wednesday, February 26** with a discussion on The World Apple Conference in Nagano, Japan and the IDFTA Summer Orchard Tour in Wenatchee, Washington. The Robert F. Carlson Distinguished Lecture, "Developing Disease Resistant Apple Rootstocks—Traditional Breeding and Genetic Engineering," will be presented on Monday morning by Dr. Herb Aldwinckle, professor and chairman, Cornell University, New York State Agricultural Experiment Station, Geneva.



We've scheduled an all-day tour on Tuesday to five outstanding orchards west of Rochester where you'll learn about tree growth and nutrition, irrigation/fertigation techniques, managing lower density orchards for profit and much more.

(Accommodations, Rates, Reservations, and Banquet information is continued on page 6.)

1997 IDFTA PRE-CONFERENCE TOUR

Geneva Experiment Station and Wafler Farms & Nursery

Saturday, February 22, 1997

This all-day tour is scheduled to depart from the Radisson Hotel Saturday morning at 8:00 a.m. and return to the Radisson at 5:00 p.m. The cost is $40.00 which includes transportation to both sites and lunch. To make reservations, please fill out the registration form which is enclosed with this newsletter.

The **New York State Agricultural Experiment Station** is located in Geneva, NY. This visit will focus on Planting Systems and Rootstocks presented by Dr. Terence Robinson, Dr. Robert Andersen and Steve Hoying. The following trials will be visited:

- NC-140 apple, peach and cherry rootstocks
- NC-140 apple orchard systems
- 15-year-old apple systems
- Vertical axis
- Cornell-Geneva apple rootstocks

At the **Wafler Farms and Nursery** in Wolcott, Paul Wafler, Kathy Wafler and Fritz Wafler will discuss and show us the following areas and topics:

- Commercial nursery practices to grow a high quality tree
- Tree storage techniques
- Equipment for the nursery and orchard-bin trailers, mower/sprayer combinations, self-propelled pruning tractor and tree planter
- Planting systems that make sense

1997 IDFTA CONFERENCE ORCHARD TOUR

LynOken Farms, Lamont Stillwater Farm, Lake Ridge Storage, Smith's Medina View Farm and Orchard Dale Fruit Farm

Tuesday, February 25, 1997

An all-day orchard tour is scheduled for Tuesday. The cost of the tour is $35.00 which includes transportation and lunch. The bus departs from the Radisson Hotel at 8:00 a.m. and returns at 5:00 p.m. We will be visiting five sites. To make reservations, please fill out the registration form which is enclosed with this newsletter.

At **LynOken Farms**, Lyndonville, and **Lamont Stillwater Farm**, Albion, we will view and discuss:

- On-farm and commercial nursery production and tree quality, the 'Designer Tree'
- Tree training of young and mature high density apple trees
- Irrigation/fertigation design and scheduling
- Innovation in equipment for spraying, trellising and trellis materials, mowing, herbicide application, bin sleds, irrigation/fertigation.

Presenters at sites include: Fran Dellamano, Marcia Fischer, Darrel Oakes, Jeff Oakes, Jim Oakes, Linda Oakes, Warren Stiles, Dan Thurber, Rod Farrow, Oded Kalir, Kathy Wafler and Tom Tower

At **Lake Ridge Storage**, Albion, **Smith's Medina View Farm**, Medina, and **Orchard Dale Fruit Farm**, Waterport, the following areas and topics will be seen and discussed:

- Field sampling for harvest maturity, storage regimes and packing innovations
- Mature tree management, maintaining fruit quality on large trees, rootstock choices and other methods of vigor control
- Cooperative apple planting systems trial, spindles, V's, V-Axe, light interception, trellis and tree training supplies.

Presenters at sites include: Bill Gerling, Chris Watkins, Ken Silsby, Randy Paddock, Jeff Smith, Steve Hoying, Jim Cummins, Terence Robinson, Eric Brown and Bob Brown

FEATURED SPEAKERS

Sharing a Wealth of Information and Experience

DR. LUCA CORELLI GRAPPADELLI is Associate Professor at the Dipartimento di Colture Arboree, Bologna University in Bologna, Italy. He earned a master's degree from Clemson University in South Carolina and a Ph.D. from Bologna University. He was a visiting scientist at Cornell University with Dr. Alan Lakso in 1987 and 1992. His area of research interest is tree fruit physiology, particularly photosynthesis, respiration and water use as they influence tree productivity and efficiency. He has also studied pruning, fruit thinning, fruit development, orchard design and training systems with both apple and peach. At the conference in Rochester, his topics will be **Apple Orchard Management Systems** and **The Peach Industry in Italy**.

MICHAEL WEBER is horticulturist and technical advisor for the cooperative Marktgemeinschaft Bodenseeobst in Friedrichshafen in the Bodensee region of southern Germany. In addition to his university education in Germany, he has had practical training in tree fruit production in France, Switzerland, South Tyrol, Italy, and New Zealand. As advisor to grower members of the cooperative, he 1) provides information on training methods for intensive orchards of apple, cherry and plum, 2) coordinates the selection and distribution of nursery trees, 3) evaluates new cultivars and 4) evaluates soil mineral analysis and provides fertilizer recommendations. He has been active in the evaluation of new dwarfing rootstocks and intensive management systems for sweet cherry. At the Rochester conference, his topics will be **Intensive Apple Orchard Management Systems in the Bodensee Region** and **Intensive Cherry Production Systems Using Dwarfing Rootstocks**.

GUY LIGONNIERE is the second generation owner/ manager of the Davodeau Ligonniere Nursery located in Angers, in the Loire Valley of France. The nursery produces tree fruit rootstocks and finished trees. In addition to the nursery, he also oversees the company's extensive apple and pear orchards. As an orchardist, he has been active in the development of new training techniques for high density apple and pear orchards. As a nurseryman, he has been interested in matching nursery tree quality with the requirements of high density orchards. He is continually evaluating new dwarfing rootstocks and new apple and pear varieties. At the Rochester conference, he will speak about **New Apple Cultivars**.

ROBERT F. CARLSON DISTINGUISHED LECTURE

To be Presented by Dr. Herb Aldwinckle

Dr. Aldwinckle is professor and chairman of the Department of Plant Pathology, Cornell University, New York State Agricultural Experiment Station, Geneva. His presentation will describe the development of new disease-resistant apple rootstocks through both traditional plant breeding and new genetic engineering approaches. He, along with his plant breeding colleague, Dr. Jim Cummins, has developed through plant breeding techniques the new Cornell-Geneva apple rootstocks G.65, G.11 and G.30 with resistance to collar rot and fire blight. Dr. Aldwinckle will also describe genetic engineering research in which he and his colleagues have incorporated fire blight resistant genes in susceptible apple rootstocks.

ROCHESTER...HERE WE COME

(continued from page 1)

ACCOMMODATIONS

The conference will be headquartered at the Radisson Hotel at Rochester Plaza located in the heart of downtown Rochester, New York. This hotel offers an environment perfectly tailored to inspire creative thinking and enhance productivity. Spacious rooms feature handsome furnishings, well-lit work areas and in-room movies.

Begin each day with a steaming cup of coffee and the newspaper delivered to your door along with a morning wake-up call. Maintain your workout routine in the fully equipped fitness center. Then, satisfy your hunger in your choice of dining establishments. The Riverview Cafe features Contemporary American cuisine overlooking the Genesee River, or our State Street Bar offers a casual atmosphere for lighter fare and cocktails.

The convenient downtown location, within walking distance of many corporate headquarters, including Kodak and Xerox, as well as the Rochester Riverside Convention Center, offers easy access to all that the city of Rochester has to offer. Shopping, entertainment and cultural attractions are all easily accessible from the hotel.

The hotel is five minutes from the Amtrak Station, and just ten minutes from the Greater Rochester International Airport with easy access via I-490.

RATES & RESERVATIONS

Rooms have been reserved for the IDFTA, but your prompt response in making reservations will be necessary to ensure that you have a room. All reservations should be received by February 1, 1997. Any reservations received after that date will be accepted on a space available basis and may be subject to regular hotel rates.

Special convention rates have been arranged and are as follows:

- Single $75.00
- Double $75.00

Room reservations are to be made directly with the Radisson Hotel at Rochester Plaza using the enclosed registration card or by calling 1-800-243-7760.

BANQUET

The annual conference banquet will be held on Tuesday evening, February 25 in the Grand Ballroom. Social hour starts at 6:30 p.m. and dinner will be served at 7:30 p.m. The cost of the banquet is $35.00 per person, which includes tax and gratuity. Please make reservations by filling out the registration form enclosed with this newsletter.

DINNER

Soup Du Jour

Tossed Seasonal Greens with Assorted Dressings

Roast Sliced Striploin

Breast of Chicken Marsala

Oven Roasted Potatoes

Seasonal Vegetables

Warm Rolls and Butter

Coffee/Tea/Decaf

NY Style Cheesecake with Strawberry Sauce

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COMPACT NEWS

A Periodic Newsletter of the International Dwarf Fruit Tree Association

No. 2 March 1997

A COMPARISON OF TREES PRODUCED IN-SITE AND NURSERY TREES FOR HIGH DENSITY APPLE PLANTINGS

George Geldart, Farm Management Specialist, B.C. Ministry of Agriculture, Fisheries and Food, Vernon, British Columbia, and
Mike Sanders, Tree Fruit Specialist, B.C. Ministry of Agriculture, Fisheries and Food, Kelowna, British Columbia

(reprinted with permission from *Tree Fruit Leader* 5(2):5-7; November 1996)

Interest in the use of in-site[1] planting using bench-graft or sleeping eye[2] trees for high density plantings has increased significantly in the past couple of years. The initial low cost of these trees in comparison with traditional nursery trees makes them attractive from the perspective of lower cash outlay in the planting year. However, the question often arises: "Are these trees really cheaper and will they lead to economic success?"

Growers hear many different views and thoughts on which system is best or what kind of trees should be planted in a replant orchard. Often the supply of trees of the variety/rootstock combination is not available in the numbers required or the cash to pay the current price for nursery trees is not available. So, planting bench graft or sleeping eye trees in-site to save money in the planting year looks like a good option to some growers. Is this the best thing to do? What are the risks associated with going this route with a high density planting? What happens when some of the buds or grafts do not take, some of the trees do not grow well or some trees do not survive?

To address these questions, we conducted analyses of the growth and productivity of a number of in-site projects throughout the Okanagan and Similkameen districts in British Columbia and developed a cost and returns analysis. The results and impact of some of the key sensitivity variables are presented in this article.

SUMMARY OF ASSUMPTIONS

Our analysis is based on a 10-year planning horizon and reflects current research indicating that super spindle plantings have a shorter life span because of reduced apple color and size as the trees age. The major assumptions in terms of tree costs, system costs, yield levels, timing and prices are summarized in Table 1. A contribution margin approach is used here as the basis for comparison to ensure that only those costs and revenues directly associated with the plantings are included. This keeps the high variability in fixed costs from one orchard to another external to our analysis. We also address the impact of replant assistance grants available to B.C. growers in the sensitivity analysis.

[1] 'In-site' refers to new trees developed in place in the orchard row.

[2] A 'sleeping eye' tree is a rootstock with a scion variety bud which is dug from the nursery before growth occurs (therefore 'sleeping') from the scion bud (also called a dormant bud tree).

SUMMARY OF FINDINGS

Differences in a number of financial and economic measurements for various risk factors associated with in-site plantings in comparison to the base calculations for the nursery tree planting are summarized in Table 2.

The per acre net present value (NPV) was calculated, using the basic assumptions listed in Table 1 as an indicator of the economics for these two alternatives. The nursery tree planting showed a 10-year NPV of $16,475 and the sleeping eye option $17,478.

From a financial perspective, the base assumptions of these super spindle plantings using nursery and in-site trees shows the nursery tree planting has a greater cash draw or deficit than the in-site planting. Cash costs in the planting year are $23,912 for the nursery tree option and $12,492 for the sleeping eye option, with accumulated maximum cash deficits in years 2 and 3 for the two options being $27,269 and $17,527, respectively. By year 6 the two options have accumulated cash balances within $1,500 of each other, after which both systems accumulate comparable cash balances. The accumulated cash balance looks at the acre in isolation of the rest of the orchard and shows how the annual shortfalls are paid back from the revenue generated from the planting, including an operating interest charge on negative annual balances.

Allowing for some margin of error in assumptions, the data for NPV and 10-year cash balance basically represent little if any difference between the two options. So, how does one make a decision from such close calculations? To address this, it is useful to look at the sensitivity of some of the key variables or risk factors that growers face in adopting the in-site technology.

The key to successful in-site plantings is getting a high percent catch (scion bud and tree survival) and good scion growth that results in early yields and revenues. In our survey of sleeping eye plantings, the average height of trees after 2 years in the orchard was 4.7 feet (141.0 cm). This is approximately 70% of the height of a nursery tree in the year of planting. With tree height directly proportional to yield potential, these survey findings reflect a significant production risk factor for the in-site trees.

The result of such slow growth is a reduction in the expected yields in the first 4-5 years of the planting and a significant reduction in income. Using the cost model, we can look at how a reduction in early yield impacts the profit potential and the cash requirements of the plantings and try to determine if the savings in tree costs for in-site planted trees offset their production risk.

To illustrate this, we looked at changes in the percent catch of the trees and the level of growth. In our survey of plantings, it was observed that 50% of the trees planted had poor growth resulting in production setback in the first 3 years. In the analysis, we used a 1-year delay in production as the basis to calculate the effect of poor growth.

As would be expected, the cash balances for 6- and 10-year periods decline for the in-site planting with a reduction in percent catch and poor growth (Table 2). For example, with a 1-year delay in production (maintaining a 99% catch), the 6-year cash balance for the in-site option drops from $871 to a deficit of $13,260 and places it well behind the nursery tree option with a 6-year deficit of $777.

Although there is some catching up in the differences in cash balances by year 10, these figures show just how large an impact this risk factor has on the anticipated financial benefits of the less expensive trees. The effect on the 10-year NPV economic indicator was similar.

The other factor that comes into consideration in these plantings is the replant grant. A replant grant to encourage replacement of older orchards with modern high density plantings was available to orchardists to offset the high cost of replanting. Summarized values for financial and economic indicators for the planting options which include the replant grants are given in Table 2. In all cases, the inclusion of the grants improves the NPV and cash balances. Even with the grants, the risk of production delays with in-site plantings can result in up to 2 years longer to reach break-even. Production delays with in-site trees also show ending cash balances less than the nursery tree option. It is important, therefore, to make decisions exclusive of the grants.

From this information it is clear that the risks associated with in-site sleeping eye and bench graft trees have a significant effect on the financial success of the planting. **If the sleeping eye trees do not perform in the first 2 years (due to either poor survival or growth), there is no economic or financial benefit over nursery trees, and there can be significant losses.**

CONCLUSIONS

The major conclusion, based on our initial assumptions, is that the two options are basically a trade-off in terms of their economic potential. However, our survey of in-site plantings revealed considerable performance variability, with many plantings showing poor growth and low catch percentages.

As a result, we feel there are significant horticultural risk factors which play a major role on the profitability of in-site plantings that growers must address before making a decision. The most significant of these risk variables in terms of economic and financial considerations are growth and percent catch. Although in-site trees may require less initial investment, they may not always result in the best choice in terms of overall profitability. Unless the planting has a good catch and satisfactory growth, the orchard is placed at considerable financial risk in terms of not only having to carry the project for a longer period of time but may even be a drain on overall farm profit. **Good horticultural skills, particularly nurseryman skills, are essential if in-site plantings are to be successful.**

It is critical that growers assess the horticulture risks associated with the sleeping eye and bench graft trees in relation to those with nursery trees before committing to any planting. The specifics of site, management, training system, rootstock and variety all need to be considered. There are indeed some situations where it may be appropriate to use in-site planting technologies, but there are also some inherent risks which can negatively affect profitability. Visit with horticultural advisors and other growers about their experiences with these technologies before making a decision.

TABLE 1

BASIC ASSUMPTIONS USED IN THE COMPARISON OF IN-SITE PLANTING VERSUS THE PLANTING OF TRADITIONAL NURSERY TREES FOR A HIGH DENSITY SUPER SPINDLE ORCHARD.

	In-site planting	Nursery tree planting
Density (2' x 9.82')	2,219 t/ac	2,219 t/ac
Planting year costs[1]	$12,492/acre	$23,912/acre
Tree cost[1]	$1.85	$7.00
% catch	99%	99%
Variety	Gala	Gala
Pack-out %	90%	90%
Price ($/lb.)		
Yr. 2	.50	.50
Yr. 3	.45	.45
Yr. 4	.40	.40
Yr. 5+	.35	.35
Yield levels (# apples/tree)		
Yr. 1	0	0
Yr. 2	1	17
Yr. 3	15	25
Yr. 4	30	35
Yr. 5	35	40
Yr. 6+	40	40

[1]All costs are in Canadian dollars.

TABLE 2
COMPARISON OF ECONOMIC FACTORS FOR IN-SITE AND TRADITIONAL NURSERY TREES AS WELL AS FOR SLEEPING EYE TREES WHERE SCION BUD SURVIVAL (CATCH) WAS LOW AND WHERE YIELD WAS DELAYED ONE YEAR. WITH AND WITHOUT A REPLANT GRANT ARE ALSO COMPARED.

	Nursery tree (base)	Sleeping eye tree		
		base	70% catch	1-yr. delay
Max. cash deficit—no grant	-27,269	-17,527	-19,435	-20,944
Max. cash deficit—grant	-21,942	-12,200	-14,108	-15,617
6-year cash balance—no grant	-777	871	-5,334	-13,260
6-year cash balance—grant	8,152	9,077	2,896	-5,675
10-year cash balance—no grant	32,928	34,630	27,655	17,665
10-year cash balance—grant	41,923	42,836	36,338	26,494
Years to break even—no grant	7	6	7	8
Years to break even—grant	6	5	6	7
10-yr. net present value—no grant	16,475	17,478	13,496	8,191
10-yr. net present value—grant	21,948	22,522	18,540	12,841

1997 IDFTA RESEARCH PROJECT FUNDING

Project Leader	Project Title	Funding approved for 1997
Lang, Gregory A.	Sweet cherry canopy architecture, Giessen rootstocks, and intensive cropping management	$3,750
Marini, Richard and NC-140 coordinators	NC-140 committee data summarization	$10,000
Myers, Stephen C., Curt R. Rom and John R. Clark	Vegetative propagation of new peach rootstocks	$2,000
Reighard, Gregory L.	Evaluation of interstems in stone fruit orchard systems	$3,000
Reighard, Greg Alan Erb, Frank Morrison, Dave Ferree and Michele Warmund	Low temperature tolerance of Redhaven peach on 18 different rootstocks at sites in Kansas, Ohio, South Carolina and Missouri	$4,000
Robinson, Terence, James Cummins and Stephen Hoying	Commercial orchard and NC-140 evaluation of the new Cornell-Geneva rootstocks	$5,000
	Total	**$27,750**

1997 IDFTA AWARDS

The Outstanding Grower Award was presented to **Guy Ligonniere**, a second generation owner/manager of Davodeau-Ligonniere Nursery located in Angers in the Loire Valley of France. For over 50 years, the nurseries and orchards of Davodeau-Ligonniere have been innovative in the introduction and evaluation of varieties, rootstocks and high quality nursery trees. Guy Ligonniere conducts orchard trials and demonstration plantings as a service to fruit growers on over 25 acres to compare orchard training systems, tree quality, rootstocks and varieties. In addition, he manages large-scale commercial apple and pear orchards and packing facilities. At both the orchards and nurseries near Angers, Guy Ligonniere has been a gracious host to visitors from around the world. He has generously shared his expertise and enthusiasm for fruit varieties and for fruit growing. By speaking at several IDFTA conferences, Guy Ligonniere has supported the educational mission of IDFTA.

The Outstanding Researcher Award was presented to **Dr. James N. Cummins**, Emeritus Professor of Pomology at Cornell University. Dr. Cummins was recognized for his outstanding accomplishments in the area of breeding and genetics of disease-resistant apple rootstocks. Dr. Cummins received his Ph.D. in 1964 from Southern Illinois University and joined the faculty of Cornell University at the New York State Agricultural Experiment Station in Geneva in 1967. The recent releases of new apple clonal rootstocks are among the major achievements of Dr. Cummins' 30-year career. A new rootstock series (G. for Geneva and CG. for Cornell-Geneva) has been developed with resistance to fire blight, crown rot and to woolly apple aphid. The selection and evaluation of disease-resistant apple rootstocks was conducted in cooperation with Cornell University plant pathologist, Dr. Herb Aldwinckle. The new rootstocks, ranging in tree size from dwarfing to vigorous, offer the possibility of growing apple trees in environments with a high risk of tree death from collar rot and fire blight. Dr. Cummins' significant contributions to the apple industry will continue as his newly released rootstocks become commercially planted.

The Extension Award for outstanding service to the tree fruit industry was awarded to **Dr. Terence L. Robinson**, Cornell University, New York State Agricultural Experiment Station, Geneva, New York. Dr. Robinson received his Ph.D. in 1984 from Washington State University and the same year began his career at the New York State Agricultural Experiment Station. His academic appointment includes both research and extension activities. His research is in the area of apple canopy development and crop management strategies, including studies of tree form and rootstocks that improve yield, fruit quality and profitability. In his research on orchard systems and rootstocks, he has worked closely with his Cornell University colleagues, Dr. Jim Cummins, Dr. Alan Lakso and Steve Hoying. Dr. Robinson has enthusiastically extended the information from his research trials to the fruit industry of New York and other North American fruit districts. In doing so, he has helped growers integrate information on variety, rootstock, spacing, training systems, cultural practices and pest control into economically viable production systems. He has been a regular speaker at IDFTA conferences and has always been willing to share his expertise with fruit growers.

Congratulations!

IDFTA BOARD OF DIRECTORS

At the 1997 Rochester conference, Darrel Oakes, Lyndonville, New York, completed his two-year term as IDFTA President. He has served in a leadership role with distinction for nine years on the Board of Directors. Dennis Courtier, Lake City, Minnesota, completed two years as Vice President and was elected to serve a two-year term as IDFTA President. Dr. Steve Blizzard was elected Vice President. Three outstanding fruit growers, Jake Van Westen, Naramata, British Columbia; Harold Thome, Covert, Michigan; and Darrel Oakes, Lyndonville, New York, leave the Board of Directors after many years of dedicated service. Newly elected for three years on the Board of Directors are Jamie Kidston, Vernon, British Columbia; Wallace Heuser, Lawrence, Michigan; and Eric Brown, Waterport, New York. A complete list of Board members is included here. Suggestions, questions, or concerns about IDFTA activities can be directed to any IDFTA Board member. Input from the membership is important to IDFTA and is very much appreciated.

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UPDATE: WORLD APPLE CONFERENCE

October 28-31, 1997 ▪ Nagano, Japan

The World Apple Conference in Nagano, Japan, is being organized by the Young Fruit Farmers' Association of Nagano Prefecture. Nagano is a major apple growing region in central Japan. The city, surrounded by the Japanese Alps, is the host city for the 1998 Winter Olympic games. A part of the three and a half day conference, the Fuji Session sponsored by IDFTA, will feature speakers from around the world discussing the challenges of growing and handling Fuji apples. The conference is being held during the harvest season for Fuji in Japan, one to two weeks later than the harvest season in most northern US states.

The goals of the conference are a) to study apple production practices in commercial orchards in Nagano Prefecture; b) to view research on intensive orchard systems, thinning and crop load adjustment, new apple varieties, and spur and nonspur strains of Fuji at the Nagano Fruit Tree Experiment Station; and c) to see new fruit handling and packing facilities, including nondestructive infrared detection of soluble solids content. Production practices that will be demonstrated in commercial orchards to enhance fruit color will be bagging, the turning of fruit, removal of spur and bourse shoot leaves, and the use of reflective ground covers. Displays will feature over 50 strains of Fuji, including early season, red color and spur-type strains.

Registration fee to attend the conference will be approximately $650. This includes three nights' accommodations (Oct. 28, 29 and 30), all breakfasts, lunches and two dinners, transportation during the conference to orchards, packing houses, and research stations, and conference registration. Not included is round trip airfare to Japan, the cost of transportation from Tokyo to Nagano and Matsumoto to Tokyo and the first and last night's accommodation in Japan. A home-stay option will be available for one evening.

UPDATE: THE IDFTA WORLD APPLE CONFERENCE STUDY TOUR TO JAPAN

IDFTA has organized a 14-day (October 26-November 8) tree fruit study tour to Japan that will include registration and participation in the World Apple Conference (October 28-31) in Nagano, as well as visits to commercial orchards, research stations, and a fruit auction in the Morioka and Aomori fruit districts in northern Japan. Weekend sightseeing in Kyoto and Tokyo will be included. The fall colors of Japan's deciduous forests are at their spectacular peak in early November. The cost of the study tour, including round trip air transportation to Japan, all transportation and accommodations (12 nights) in Japan and all costs for the World Apple Conference, will be $3895 per person (double occupancy). The supplement for a single room is $400. Individual arrangements can also be made for an extended stay in Japan or elsewhere.

Upon request an abbreviated 7-day (October 26-November 1) IDFTA World Apple Conference tour can be arranged that will include round trip airfare to Japan, transportation from Tokyo to the conference site and return to Tokyo, full participation in the World Apple Conference, all accommodation (5 nights) and most meals. The cost will be $2500 per person (double occupancy). The supplement for a single room will be $150.

The tour leader is Dr. Bruce Barritt, IDFTA Education Director and pomologist at Washington State University, whose research emphasis is orchard systems, rootstocks and apple breeding. In October 1996, Dr. Barritt visited the sites that will be included in the study tour and helped with the planning and organization for the World Apple Conference in Nagano. The tour coordinator is Bob Curtis of Curtis-C Travel of Wenatchee, WA. Bob also visited the tour sites in October 1996. This will be the eighth tree fruit study tour Bob and Bruce have led to important fruit growing regions around the world.

Please request an application form and complete itinerary from Bob Curtis of Curtis-C Travel, P. O. Box 7188, East Wenatchee, WA 98802, phone (800) 562-2580; FAX (509) 884-5651, or Dr. Bruce Barritt, IDFTA Education Director, 1100 N. Western Avenue, Wenatchee, WA 98801, phone (509) 663-8181, ext. 233; FAX (509) 662-8714; e-mail etaplz@wsu.edu.

IDFTA CALENDAR

June 22-24, 1997
IDFTA Summer Tour, Fitchburg, Massachusetts

July 20-22, 1997
IDFTA Summer Tour, Wenatchee, Washington

October 26-November 8, 1997
World Apple and IDFTA Conference Study Tour to Japan

February 22-25, 1998
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February 2000
IDFTA Southern Hemisphere Conference, Hawkes Bay, New Zealand

February 2000
43rd Annual IDFTA Conference, California

International Dwarf Fruit Tree Association
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COMPACT NEWS

A Periodic Newsletter of the International Dwarf Fruit Tree Association

No. 3 May 1997

WASHINGTON SUMMER TOUR HIGHLIGHTS

July 20-22, 1997
Featuring the Wenatchee, Lake Chelan and northern Columbia Basin districts

This year's summer tour kicks off with a welcoming reception Sunday evening to introduce everyone to the northcentral Washington tree fruit industry. All-day orchard tours are scheduled for Monday and Tuesday.

Arrangements have been made with the WestCoast Wenatchee Center Hotel, 201 North Wenatchee Avenue, Wenatchee. You'll be only steps away from the business and shopping districts, and only a short drive away from Leavenworth's Bavarian Village, Mission Ridge ski area and Lake Chelan.

A limited number of rooms have been reserved at the hotel, which is adjacent to the Wenatchee Center, the site of the Sunday evening reception and bus departure area. Please call the WestCoast Wenatchee Center Hotel to make reservations.

1-800-426-0670 or 509-662-1234

Mention that you are with the IDFTA Summer Tour to receive the following rates:

Single	**$69**	**Triple**	**$79**
Double	**$69**	**Quad**	**$89**

SUNDAY, JULY 20

7:00 p.m. Welcoming reception and short introduction to the northcentral Washington tree fruit industry.

MONDAY, JULY 21

7:30 a.m. Depart by bus from Wenatchee Center parking area for travel south to the Quincy/Babcock Ridge area of the Columbia Basin. Lunch is included.

Morning stops include:

1. Nursery production and tree quality. Central Washington Nursery Improvement Institute will host a demonstration and discussion of nursery production of high-quality fruit trees, propagation and feathering techniques. Four of the major tree fruit nurseries in the area will be participating.
2. Valley View Orchards. Jim and Sandy Fleming will tour us through **a)** a block of 4th & 5th leaf Fuji (BC2) on B.9, M.9 EMLA and M.26 with a double row V system, 5' x 18', 1,240 trees/acre; and **b)** a new block of 2nd & 3rd leaf Cameo/M.9 RN29, 1,240-1,500 trees/acre. Jim will describe the Geographical Positioning System (GPS) fertilization program used both before and after planting.
3. Morgan Orchards. Warren Morgan will show us five blocks: **a)** 11th leaf Royal Gala/M.26 in single rows at 7' x 15.5'; **b)** 8th leaf Imperial Gala/M.26 at 6' x 14.5'; **c)** 9th leaf Red Delicious/M.7A at 6' x 14.5'; **d)** 7th leaf Fuji/M.26 at 4' x 14', comparing nursery tree quality; and **e)** Fuji on Mark or M.26, comparing trees grown in place or transplanted. ➤

SEE PAGE 7 FOR TIME-SENSITIVE REGISTRATION FORM

Return to Wenatchee area for afternoon stops:

4. Stemilt Growers Packinghouse. Observe packing of apples and cherries. This modern packinghouse packs about 5.2 million boxes of apples and pears and about 1.3 million boxes of sweet cherries every year.
5. Stemilt Hill sweet cherry production area. Elevations of 1,800 to 3,000 feet provide late season production of sweet cherries in this region, as well as in the neighboring Wenatchee Heights. Cherry harvest should be in progress. At the Stevenson Orchard we will see trees pruned in the "steep leader" system, leading to production levels double the area industry standard. Standard and newer cherry varieties including Bing, Lambert, Rainier, Lapins, and Sweetheart should be seen prior to harvest.

TUESDAY, JULY 22

8:00 a.m. Depart by bus from Wenatchee Center parking area for travel north along the Columbia River to the Chelan-Manson area. Lunch is included. In the afternoon, travel will be south on the opposite side of the river with visits in the Orondo area. The orchard stops include:

1. Bear Mountain Ranch. Jerry Scofield has been aggressively replanting and will show us Fuji and Gingergold on M.9 and M.26, on low V trellis at high densities. Early production has been impressive. Tree quality and management at planting will be compared.
2. Marker Orchard. At one of Lake Chelan's best views we will see the results of replanting with adjustments in cultural practices. A 6th leaf Fuji/Mark (probably bagged) block with a 3-wire vertical axe trellis, 6' x 14', with low vigor was interplanted with Fuji/M.9, now in the 2nd leaf, bringing the orchard to 3' x 14'. A 4th leaf Fuji/M.26 3-wire vertical axe trellis was similarly interplanted with Fuji/M.9 last season. Also at this stop will be Gingergold on a V trellis at 1,500 or 3,000 trees/acre, 10-year-old Red Delicious grafted over to Braeburn last year, and Braeburn/M.7 at 5' x 14' in the 3rd leaf on a 3-wire vertical axe trellis.
3. Hubbard Orchard. This orchard has some good examples of replant success and some failures. Blocks include 2nd leaf Gala/M.9 at 3' x 14' and 2.5' x 14', Golden Delicious/M.7 at 5' x 14' in the 5th leaf, 7th leaf Gala/M.7 and 3rd leaf Gala/Ottawa 3.
4. Wee Hoot Orchard. Doyle, Thyra and Tye Fleming will show us high density 4th leaf Cameo/M.9 on a low V system at 3,600 trees/acre, Fuji/M.9 on a low V system in the 5th leaf at 6,000 trees/acre, and Gingergold/M.9 at 1,000 trees/acre.
5. Grady Auvil Orondo Orchard. We will see a highly productive 5th leaf Fuji/M.26 on a double row, tall V system.
6. Tom Auvil Orchard. Tom will show us Braeburn/M.26 at 1,500 to 4,000 trees/acre and Fuji/M.26, 1,500 trees/acre in the 3rd leaf, both on a low V trellis.

POINTS OF INTEREST IN WENATCHEE

WASHINGTON APPLE COMMISSION VISITOR CENTER offers an in-depth look at the state's largest agricultural industry. Enjoy industry displays and watch their video about the apple industry. Also sample a variety of Washington's world-famous apples. The souvenir shop provides a place to shop for apple-related mementos ranging from sweatshirts to jewelry.

LEAVENWORTH'S BAVARIAN VILLAGE, enchantingly designed to look like a village in Bavaria, Germany, offers over 100 unique stores and services. They boast many fine restaurants which serve authentic German food, including confectioneries and bakeries.

LIBERTY ORCHARDS, APLETS & COTLETS CANDY KITCHEN provides the tastiest tour in Washington—an experience that will delight the whole family. Watch them as they make delicious candies, and visit their charming, old-world kitchen and country store. Taste the scrumptious, fruity free samples within minutes after they're made.

NORTHCENTRAL WASHINGTON MUSEUM offers many exhibits, programs, concerts, and activities for its visitors to enjoy. Learn about the early history of Wenatchee.

SOME THOUGHTS ON APPLE PLANTING DENSITIES

Mike Sanders, Tree Fruit Specialist, B.C. Ministry of Agriculture, Fisheries and Food,
Kelowna, British Columbia
(reprinted with permission from *Tree Fruit Leader* 5(2):1, 2, 11, 12; November 1996)

Following the selection of variety, the burning question for most growers who are renovating is—what system and tree density should I plant? This is a very important economic question and can play a major role in the survival of the orchard.

At the present time there is considerable debate among B.C. apple growers over the optimum tree density. There are advocates of super spindle densities with 1,500 or more trees per acre and at the same time others are reluctant to plant even 600 trees per acre. My opinion is that the most profitable choice will be somewhere between these extremes and will be based on market conditions, economics of production at the current time, the site and grower capability. I want to stress that this is my view at the current time; however, things change and orchard designs must change with the times.

The economic factor having the greatest impact on the success of your new planting will be the price received for your fruit over the life of the orchard. This will be dependent on management, system, climate, the variety chosen and the fruit size and quality. The important issue, therefore, is **what system and density provides the greatest opportunity for optimal fruit size and highest fruit quality over the life of the planting?**

To simplify the issue, let us look at three fundamentals of density and the impact of density on fruit quality. First, early production is necessary if a planting is to reach maximum economic potential. I believe that over the past 10 or so years this point has been pretty well accepted by our industry. Second, early production is directly related to planting density. For any rootstock and variety combination (of equivalent tree quality), early production will increase as planting density increases. This fundamental has been proven many times throughout the world.

Third, **as density increases, effective life span of plantings decreases.** My definition of an effective life span is the length of time a planting can produce the levels of yield, fruit size and color necessary to provide profits. This third fundamental is harder to substantiate than the first two but indeed it is true. Several studies have documented fruit size and color reductions at increasing densities for specific systems. Other factors are also involved but the timing of these reductions is mostly dependent on the tree density and can occur as early as the third year.

It is not difficult to see why so many growers are in a dilemma over what density to plant. On the one hand, density must be high enough to provide sufficient early production. On the other hand, density cannot be so high that fruit size and color reductions occur before the planting has paid for itself and made a profit. **If both early production and longevity of the planting are required, a compromise is in order.**

How long should the effective life of the planting be? Great question, but not easy to answer as there are many factors to consider. My opinion is that the planting should have an effective life span of about 15 years, plus or minus a year or two. If orchards are renovated more frequently than that, I think the cost of renovating becomes prohibitive regardless of the price received. These costs include tearing down the support system, pulling out trees, digging up irrigation systems, preparing the soil, fumigating, buying and planting trees, erecting a new support system, installing a new irrigation system, etc., etc., etc. A 15-year life span works out to an annual renovation rate of 7.5%. If the effective life span is shorter than this, not enough of the orchard will be in full production so the orchard will be difficult to sustain. If the renovation rate is less than 7.5%, there is a good possibility the orchard runs the risk of becoming obsolete because of outdated varieties and strains.

My suggestions for training system and density are based on the 15-year effective life span. For training system, I suggest a tall (8'-10') and narrow vertical axis/slender spindle style training system. This is not ➤

unlike many super spindle trees, only slightly bigger. For me, rootstock is not an option as I remain a firm believer in the dwarfing rootstocks (M.9, B.9, O.3).

My suggestions for density are based on variety and site. My choice for varieties such as Fuji is 700 to 900 trees per acre. Fuji is a difficult variety to grow and I think it does best when trained long, rather than being constantly cut back. For compact growing varieties such as Braeburn, densities in the rage of 900 to 1,400 trees per acre seem most suitable. For other varieties, somewhere in the range of 800 to 1,200 trees per acre should provide suitable early production levels and provide a life span in the vicinity of 15 years.

By choosing the vertical axis/slender spindle style for all varieties, I go beyond what I really believe. My view is that the choice of training system and density should be based upon the growth and fruiting characteristics of the variety to be grown and the growers' expectations of future prices. Since we are not at that level of sophistication yet, I think the suggested approach for the densities referred to makes sense. My observations are that taller trees have generally outperformed shorter trees and are generally most suitable for our conditions.

When high density was first being tried in B.C., it was thought that we should use the most appropriate European technology as a starting point and then evolve into systems most suitable for our sunlight and growing conditions. We have made some progress toward refining orchard design for our conditions but have not yet positively identified optimum systems for specific varieties under our conditions.

We tend to forget that our market requirements for fruit size, color, condition and visual requirements are considerably higher than those required for European markets. The high quality requirement for our fruit is one of the reasons I am not generally a staunch supporter of densities higher than I referred to as there are good examples of excessive densities resulting in fruit quality problems.

I will use the European experience as they were the first to try super spindle densities. Some planted more than 5,000 trees per acre! My contacts tell me there are still some ultra high densities being planted but these are generally first timers at these densities. It is my understanding that the growers who first tried super spindle have reduced tree densities in subsequent plantings because of fruit size and vigor problems. Since super spindle was not a development from research, objective data on yield and fruit quality were not available early on. Subsequent research has documented the size problems experienced by some of the super spindle pioneers. My reading of the situation in Europe is that super spindle has been anything but a success. The common density presently being planted in the "spindle" countries is 1,200 to 1,500 trees per acre. They are also going to a somewhat taller tree. I had an interesting group from South Tyrol, Italy, visit last summer. The group consisted of 23 growers, one nurseryman and an extension agent. These were progressive growers and many had tried super spindle and all had at least studied the concept. **The only one still in favor of the concept was the nurseryman!** Fruit quality and vigor control were the main reasons for the loss in interest.

Even though most of the super spindle plantings in the Okanagan Valley are relatively young, the same color and size problems observed in Europe have been observed in some plantings, but certainly not in all plantings. Based on my observations, in spite of some excellent young plantings, it is certainly too soon to suggest that super spindle can sustain optimum cropping under our conditions.

Stating that effective orchard life span decreases as density increases should not be surprising. The lesson was learned in Europe when the move to bed plantings from single rows was made. Sure enough, there were yield increases with increasing density. However, these increases were not proportional to the increased density, showing there is something else involved in addition to density. In many cases the higher density beds maintained yield advantage for about the first 5 to 7 years. After this, **yield, fruit size and color started to decline.** These declines coincided with increased costs of pruning to contain trees to their allotted space so the economics became very unfavorable. Within about 8 years many of the plantings required removal. Most of the profits were reinvested into new plantings, leaving little, if any, money for management purposes. That is one reason I think there were so many bankruptcies. My concern is that the same result can happen with excessively high density plantings in B.C.

The best clue to determining optimum density may be provided by results of orchard light research, as yield potential is proportional to amount of light intercepted. A study of trees in their third year at Summerland Research Centre in B.C. showed that the amount of light intercepted leveled off in the range of 900 to 1,100 trees per acre.

(continued on page 7)

WORLD APPLE CONFERENCE

October 28-31, 1997 ▪ Nagano, Japan

The World Apple Conference in Nagano, Japan, is being organized by the Young Fruit Farmers' Association of Nagano Prefecture. Nagano is a major apple growing region in central Japan. The city, surrounded by the Japanese Alps, is the host city for the 1998 Winter Olympic games. A part of the three-and-a-half day conference, the Fuji Session sponsored by IDFTA, will feature speakers from around the world discussing the challenges of growing and handling Fuji apples. The conference is being held during the harvest season for Fuji in Japan, one to two weeks later than the harvest season in most northern US states.

The goals of the conference are **a)** to study apple production practices in commercial orchards in Nagano Prefecture; **b)** to view research on intensive orchard systems, thinning and crop load adjustment, new apple varieties, and spur and nonspur strains of Fuji at the Nagano Fruit Tree Experiment Station; and **c)** to see new fruit handling and packing facilities, including nondestructive infrared detection of soluble solids content. Production practices that will be demonstrated in commercial orchards to enhance fruit color will be bagging, the turning of fruit, removal of spur and bourse shoot leaves, and the use of reflective ground covers. Displays will feature over 50 strains of Fuji, including early season, red color and spur-type strains.

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THE IDFTA WORLD APPLE CONFERENCE STUDY TOUR TO JAPAN

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Upon request an abbreviated 7-day (October 26-November 1) IDFTA World Apple Conference tour can be arranged that will include round trip airfare to Japan, transportation from Tokyo to the conference site and return to Tokyo, full participation in the World Apple Conference, all accommodations (5 nights) and most meals. The cost will be $2,500 per person (double occupancy). The supplement for a single room will be $150.

The tour leader is Dr. Bruce Barritt, IDFTA Education Director and pomologist at Washington State University, whose research emphasis is orchard systems, rootstocks and apple breeding. In October 1996, Dr. Barritt visited the sites that will be included in the study tour and helped with the planning and organization for the World Apple Conference in Nagano. The tour coordinator is Bob Curtis of Curtis-C Travel of Wenatchee, WA. Bob also visited the tour sites in October 1996. This will be the eighth tree fruit study tour Bob and Bruce have led to important fruit growing regions around the world.

Please request an application form and complete itinerary from Bob Curtis of Curtis-C Travel, P. O. Box 7188, East Wenatchee, WA 98802, phone (800) 562-2580; FAX (509) 884-5651, or Dr. Bruce Barritt, IDFTA Education Director, 1100 N. Western Avenue, Wenatchee, WA 98801, phone (509) 663-8181, ext. 233; FAX (509) 662-8714; e-mail etaplz@wsu.edu.

FACTS ABOUT INTERSTEMS FOR APPLE TREES

Bas van den Ende, Shepparton, Victoria, Australia
(Reprinted from Northern Victoria Fruitgrowers' Association "Technical Bulletin," December 1996)

The renewed interest in growing apples like Pink Lady and Gala has also created a desire to grow the trees on more size-controlling rootstocks. Growers are looking for smaller trees with the advantages of early yields, easier management and improved fruit quality. Seedling, Northern Spy, M.793 and MM.111 will not give growers these advantages, except perhaps under poor soil or replant conditions.

Rootstocks like MM.106 and M.7 are semi-vigorous and trees on these stocks can be very precocious, especially in Victoria's Goulburn Valley. I see excellent examples of Pink Lady and Gala on these stocks. Then there are dwarfing rootstocks like M.26 and M.9. Trees on these rootstocks need permanent support. They cannot tolerate water stress because the root system is small and fibrous. Trees on these dwarfing rootstocks can be very precocious and produce fruit of good size if growers treat the trees properly. Unfortunately, no dwarfing rootstocks are resistant to woolly apple aphid. This pest can be a big problem in some areas. Trees with a rootstock that is tolerant to woolly apple aphid and an interstem to give the desirable characteristics to the scion (variety) can be a suitable solution. If a fruitgrower does not have a problem with woolly apple aphid, he can choose from several suitable rootstocks without an interstem. Interstems have a place and give the orchardist flexibility. Although a tree with an interstem does offer the advantage of being able to control tree size and have a root system that is resistant to woolly apple aphid, there may be disadvantages and growers should be aware of them. It has been reported from New Zealand that the introduction of the interstem can lead to some unexpected interactions between the three sets of genes (tissues), so that varieties that would normally be the same size worked on one rootstock can be a different size when worked on an interstem. In some cases, the rootstock of interstem trees has produced more root suckers than normal. It has been reported from the US that sometimes a scion on an interstem tree has not been as precocious as a scion worked directly on a dwarfing rootstock. In New Zealand some research has started with interstems. M.26 has not been included in the experiments, because it is prone to burr knots which would increase the tree variability. Recent Japanese work has found that M.26 makes a poor interstem for this very reason. It has also been reported from New Zealand that not all rootstocks readily accept bench grafted interstems. M.793 has shown great difficulty in propagation with a bench grafted interstem. MM.106 on the other hand is relatively easy to propagate this way with an interstem.

The most common interstock is M.9. Good combinations appear to be MM.111 and MM.106 with M.9 as the interstem. The length of the dwarfing interstem controls tree size. A tree with a short interstem piece is larger than a tree with a longer interstem. Collaborative Dutch and Italian work found that interstem trees on MM.106 with a 350 mm (14 inches) interstem piece of M.9 were comparable in size to trees worked directly on M.9. Thus not only can the tree size be controlled by the length of the interstem piece, but care must be taken in the nursery that this length and also thickness are kept constant, otherwise variable tree size will be the result in the orchard. The length of the interstem piece is usually between 300 and 400 mm (12 and 16 inches) and M.9 should be the preferred interstem. The Dutch are experimenting with Summerred, M.27 and P.22 as well as M.9 as interstems. In the US, nurseries use M.27, M.9, B.9, Ottawa 3, P.22 and P.2 as interstems. M.26 is not used as interstem in any of the overseas countries mentioned.

In the past, trees with interstems were more expensive than trees without interstems, because it took longer to grow trees with interstems in the nursery. Now the two grafts for an interstem tree can be made at the same time.

In summary, if you do not want to grow apple trees on a trellis, a well-anchored vigorous rootstock with a dwarfing interstem is a possible solution. Interstems offer unique advantages in that you can select the correct combination of rootstock and interstem for disease resistance, soil conditions, anchorage and early and high yields. Just be sure that you get the correct combination and uniform length of interstems at a minimal price difference between standard and interstem trees. Also remember that tree management is as important as the special customized trees you buy. If you do not know how to grow these trees, you have lost the advantages they offer you!

SOME THOUGHTS ON APPLE PLANTING DENSITIES (continued from page 4)

What do economic analyses tell us about densities? One study from South Tyrol, Italy, concluded that optimum planting density for their market and growing conditions was 1,200 to 1,500 trees per acre. A study by George Geldart in B.C. concluded that 1,200 to 1,400 trees per acre was the optimum range.

Several economic studies have shown, however, that super spindle densities can be successful if high prices and yields can be sustained annually for the life of the planting. Super spindle may even be economic with a life span of only 5 to 6 years if exceptionally high early yields and prices can be obtained. It depends on the required rate of return. Prices, however, may be difficult to sustain because of anticipated fruit size and color problems. High prices and early yields are necessary because of the very high investment cost. If you are planting a variety that you feel can maintain prices of about 45 cents (Canadian) or more per pound for 12 or so years, super spindle may very well offer the greatest opportunity. You will, however, have to accept the financial risk with its high investment costs and must ensure that the effective life span can be obtained.

You can see that my thoughts for most varieties are a bit contrary to super spindle densities. Even though I continually test new techniques and methods, I am primarily interested in economic performance rather than horticulture sport. Rather than planting excessively high densities, I think the emphasis should be on planting good quality trees and then making them grow well to quickly fill the allotted space with fruiting wood. The investment is less, there is considerably less exposure to financial risk and yet there is excellent opportunity for good profits.

IDFTA 1997 WENATCHEE SUMMER TOUR REGISTRATION FORM

Name _____ Membership Number _____

Names of Others Attending _____

_____

Address _____

_____

Daytime Phone _____ Evening Phone _____

Tour Dates	Number of People		Cost		Total Due
Monday, July 21 & Tuesday, July 22	_____	x	$100.00	=	$_____
			Late fee (if postmarked after July 11)		$_____
			Check enclosed for		$_____

All prices include transportation, meal and beverage. Registration is due and must be postmarked by June 27, 1997. Late registration is accepted until July 11 with a $25.00 fee (add to total amount enclosed). Make checks payable to "IDFTA" and mail with completed form to: IDFTA, 14 South Main Street, Middleburg, PA 17842.

IDFTA CALENDAR

June 22-24, 1997
IDFTA Summer Tour, Leominster, Massachusetts

July 20-22, 1997
IDFTA Summer Tour, Wenatchee, Washington

October 26-November 8, 1997
World Apple Conference and IDFTA Study Tour to Japan

February 22-25, 1998
41st Annual IDFTA Conference, Pasco, Washington

February 1999
42nd Annual IDFTA Conference, Hamilton, Ontario, Canada

February 2000
IDFTA Southern Hemisphere Conference, Hawkes Bay, New Zealand

February 2000
43rd Annual IDFTA Conference, California

SCHNITZ UN GNEPP

(Apples and Dumplings)

2 cups dried sweet apples
2 cups smoked ham, cubed
2 tablespoons brown sugar
2 cups sifted all-purpose flour
4 teaspoons baking powder
1/2 teaspoon salt
1 egg, beaten
2 tablespoons melted butter
1/2 cup milk (approximately)

Cover dried apples with water and soak overnight. Place apples and water in large saucepan. Add ham and cook slowly until apples are tender, adding additional water to keep level of liquid. Add brown sugar. Stir until dissolved. Sift flour with baking powder and salt. Beat eggs with butter and milk. Add all at once to dry ingredients. Beat well. Add additional milk to make a moderately stiff batter. Drop batter from wet spoon into boiling ham and apples. Cover saucepan and simmer, without lifting lid, for 20 minutes. Makes 6 to 8 servings.