

APR 16 1987

COMPACT FRUIT TREE

ROOTSTOCK BEHAVIOR

SPUR TYPES

INDUCED DWARFING

CULTURAL PRACTICES

Department of
Horticulture

MICHIGAN
STATE
UNIVERSITY

THE INTERNATIONAL DWARF FRUIT TREE ASSOCIATION

No. 3 April 1987 Prepared by Ronald L. Perry

HIGHLIGHTS - 30TH ANNUAL IDFTA CONFERENCE

We can't say enough for the hospitality shown to us by our Canadian friends. The 710 people who registered made up the second largest conference attendance in IDFTA history. Canadians made up 48% of the audience who were treated to a cast of excellent speakers.. A special thanks goes to Harold Schooley, IDFTA Board member from Simcoe, Ontario and to Joe Uyenaka, Ontario Extension specialist from Milton. Both were instrumental in helping to make it a big success. Other thank you's go out to the fruit growers who hosted 300 of us on our orchard tour. They were Al Ferri, Phil Clarkson, and Walter Bianchi. Also, we must thank Dr. Don Elfving and John Warner for the pruning demonstrations and a crew of provincial extension horticulturists and educators who served as bus tour guides. Special thanks also go out to the Ontario Apple Marketing Commission, who assisted in promoting the conference in Ontario and sponsored a conference coffee/juice break. They also provided two very hard working ladies, Eleanor Storkey and Brenda Cotterill who for two days helped with registration.

We also owe a very gracious thank-you to Mr. Walter Bianchi who contributed \$1,000 to help pay for our lunch bill for the orchard tour.

Last, but not least, cheers must go out to Tom and Carol Chudleigh, who organized an exciting tour of Toronto, dinner at the CN Tower, and Tom for his eloquent Masters of Ceremonies performance at our annual banquet.

We had many glowing compliments regarding the quality of all our speakers. Dr. Oberhofer, Lana, Italy, and Mr. Koike, Nagano, Japan were sincerely appreciated by all for sharing information with us. Their manuscripts along with the many others will make Volume 20 proceedings a valuable asset to all of our **1987 paid members**. I want to single out our remaining speakers who did such a splendid job, coming from all parts of the North American continent and I want to emphasize **at their own expense**.

The annual banquet was enjoyed by the 410 people in attendance and especially by our 1987 IDFTA Distinguished Service Awardees. Awards and congratulations were given to the following: Mr. Peter Van Oostrum, long time member of IDFTA and high density orchard proponent from Centerville, Kings County, Nova Scotia; Mr. Richard Bachman, past IDFTA president, board member, and fruit grower from Carroll, Ohio; Bob Edwards, past IDFTA board member and fruit grower from Poplar Grove, Illinois; and Dr. Roy Simons, who will be retiring this year after a long research and teaching career at the University of Illinois, Urbana, Illinois. Dr. Simons has

been an active member and secretary of the Rootstock Research Committee.

Jean Pierre Prive', graduate student in the Department of Horticultural Sciences, University of Guelph, Ontario highlighted the horticulture industries in Canada's provinces in an entertaining slide program

Also at the banquet contributions to the Rootstock Research Fund were presented by the Indiana Horticultural Society, Minnesota Apple Growers Association, and the New Jersey Horticultural Society. We thank the Washington Tree Fruit Research Commission for helping to defray Mr. Koike's travel in the amount of \$1000.

The Rootstock Research Committee

The Rootstock Research Committee agreed to fund \$31,250 for 29 research projects originating in 16 states and 1 Canadian province. The list of the approved projects will be included in the soon to be published proceedings. We thank the committee for giving of their time and efforts in reviewing 49 project proposals. Special thanks go to Chairperson Elwin Hardy and secretary Dr. Roy Simons for a job well done.

Membership

As of March 1, 1987 we have had a total of 979 members paid for 1986-87. Approximately 25% of you have not paid 87 dues as of yet, and you will receive a reminder in May. We are starting to see increases in membership which is encouraging. In fact, we gained some 30-40 members as a result of the Toronto meeting. **Remember, only 1987 paid members will receive Vol. 20 Conference Proceedings**. I have enclosed in this newsletter a distribution map for North American members. In addition, our foreign (other than North American countries) membership break down is as follows:

ARG	1	D.GER.	1	JAP	19	PR	1
AUS	10	R.GER.	4	KOR	1	S.AFR	4
BEL	2	GR	1	MEX	4	S.AMER	1
CHIL	5	HUN	1	MOR	1	SP	2
DEN	1	IND	1	NZ	6	SW	1
ECU	2	INDO	1	NW	1	UR	6
ENG	7	ISR	4	CHI	2	W.AUS	2
FR	10	ITA	10	PHI	1		

The 31st Annual Conference

We are in the preparation stages for the 1988 conference which will be held **Feb. 28-Mar. 2, 1988** at the **Hershey Lodge & Convention Center**, Hershey, PA. Dr. Rob. Crassweller, Penn. State University, Fruit Extension Specialist, will be assisting us in local arrangements.

OFFICERS & BOARD OF DIRECTORS

A new slate of officers was installed at the last business meeting. Officers for the next 2 year term are:

***Evan Milburn, President**

1495 Appleton Rd
Elkton, MD. 21921
(301)398-1768

***Jack Pearson, Vice-President**

Rochester, NY

Outgoing Officers and Board Members

We want to thank the following directors for their invaluable leadership and devotion to IDFTA. These dedicated individuals, as well as all board members, work as volunteers and thus receive no monetary remuneration for travel to meetings and other expenditures.

*Don May, Pres. 1985-1987, Board of Directors 12 years

Groton, Massachusetts

*Gene Stembridge, Board of Directors 12 years

Whitestone, Georgia

*Kenneth McDonald, Board of Directors 17 years

Martinsburg, West Virginia

A heartfelt thank-you must go to Don May whose leadership and understanding was invaluable during the Executive Secretary transition.

New Board of Directors

#Walter Krause, P.O. Box 32, Reedley, CA. 93654

#Tim Mercier, Box 425, Blue Ridge, GA. 30513

#Dennis Courtier, Rt. 4, Box 18, Lake City, MN. 55041

In this and upcoming newsletters I will include an informational sketch on each of the officers and board members.

Evan Milburn, President:

Evan is a 4th generation apple and peach grower from northeastern Maryland. He is married and has 3 sons and 2 daughters. He began his affiliation with IDFTA in 1968 when he attended his first meeting in Michigan. He has been a board member for the past 8 years, and he has served 6 years on the Rootstock Research Committee and 2 years as V.Pres. Evan has also served as past President of the Maryland State Hort. Society and on the Maryland State Apple Commission.

Currently he is President of Milburn Orchards, Inc. where he is in partnership with his brother, John. They operate 400 acres in Elkton, MD. of which there are 120 acres in peaches and the remainder in apples. Evan still has some 40 acres of standards; but for the most part, he has them planted in medium density. Twenty percent of their produce is sold through their Farm Market. Fifth generation Milburns are actively involved in the operation in the form of Evan's two sons and brother John's 2 sons.

Evan is looking forward to his new leadership position, and he would like to invite members to write and make suggestions about IDFTA programs and activities.

NEW LIMB SPREADING TOOL

While on the Ontario orchard tour, Mr. George Slama of Georgian Bay, Ont., demonstrated a very useful tool for spreading limbs in central leader or slender spindle systems--A piece of Spring Steel (wire about 10 gauge) approximately 13" (33cm) to 14" (36cm) in length with ends bent in a "J" shape. When used as a spreader, one hook (J) is placed over a limb; the other lowered and hooked around the trunk. The method may be reversed to strengthen or pull branches upward by placing the top hook around the trunk and the bottom one down to the limb.

J. Runkel

MARK APPLE ROOTSTOCK

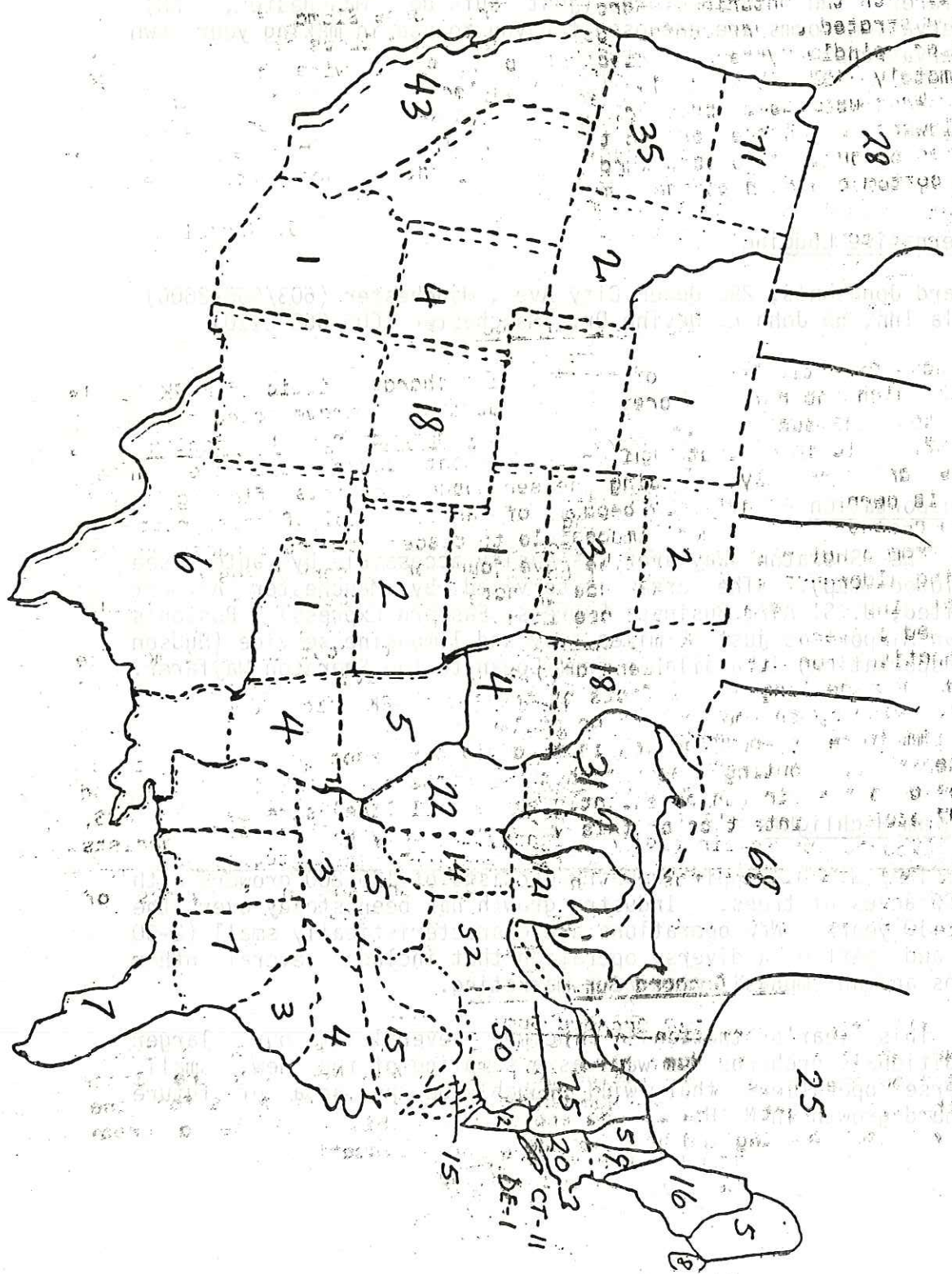
We have recently learned of a perplexing characteristic of MARK apple rootstock which had not been previously reported. We have found that MARK appears to be as susceptible to crown gall (Agrobacterium tumefaciens) as M9 or M7. Michigan State University (patent owner) and the nursery licensees are currently assessing the seriousness of this finding. This finding is perplexing not only because of the potential of this rootstock but also because it is almost impossible to discern tumors induced by the pathogen from a natural burr knot. We have found on nursery trees as well as on existing older trees that MARK has a natural characteristic to produce many root initials similar to those in a burr knot, but not in a concentrated pattern. MARK's propensity to produce root initials may be an explanation for its excellent anchoring. We have at this time no knowledge of the long-term effects of trees on MARK which are established with these root tumors or galls.

My immediate recommendation is to avoid burr knot or root initials from festering by planting trees so that the rootstock shank is buried and not exposed to the air (union slightly above soil line) same as for M26, MM106, M7 etc. My intention at this writing is only to make orchardists and nursery operators aware of this situation. It is too early to make judgement as this stock has proven to be outstanding in 30 years of evaluation.

1987 Orchard Summer Tour

You will find information in this mailing about the upcoming IDFTA orchard summer tour in New Hampshire. Dr. Bill Lord, New Hampshire State Fruit Extension Specialist will be in-charge of local arrangements for the tour which will start June 28 and end July 1. This will be a great opportunity to see New England and include a family vacation.

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IDFTA ARRANGEMENTS

Housing

Our 1987 Summer Tour will be headquartered at the Sheraton-Wayfarer Inn in Bedford (just outside Manchester, NH). Reservation forms are enclosed for you to use in making your own reservations.

Alternative Lodging

Howard Johnson's, 298 Queen City Ave., Manchester (603/668-2600)
Koala Inn, 55 John E. Devine Dr., Manchester (603/668-6110)

Transportation

The Sheraton Wayfarer is easily accessible by auto (see enclosed map). The area is serviced by Manchester Airport (United, U. S. Air, Business Express, Eastern Express). Boston's Logan Airport is just 55 miles away and limousine service (Hudson Transportation) is available from Logan to the Sheraton Wayfarer.

Program Highlights

The N. H. apple industry consists of 175-200 growers with 5,000 acres of trees. Industry growth has been steady over the past 10 years. New operations are characteristically small (2-30 A) and part of a diverse operation that includes several other crops and an emphasis on direct marketing.

This year's tour will include several of our larger traditional orchards as well as a sampling of the new, small, diverse operations that will probably be the area of future orchard growth in N. H.

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No.1 February 1987 Prepared by Ronald L. Perry

30th Annual Conference, Toronto , Canada

Hopefully, everyone has recieved information about the upcoming conference. The educational sessions will be held in the Hilton Harbour Castle hotel. There are many other overnight accomodations in Toronto besides the Hilton. Upon request, a list of other hotels/motels is available from my office (tele 517-355-5200). Should you decide to stay elsewhere, Toronto has a fine city transportation network of buses and and excellent subway system. The Toronto Hilton is located 7 minutes walking distance south of Union Station (rail above and below ground). For less than \$2 a day (Cdn) you could forgoe parking problems near the Hilton and reach the hotel by subway. Many fruit growers are taking full advantage of travel by train to the conference. A quick check with your local travel agent can reveal some inviting package (rail/hotel) deals with various hotels including the Hilton.

1987 Orchard Summer Tour Planned

The 1987 IDFTA orchard summer tour is currently being planned for **June28-July 1, 1987 in Manchester, New Hampshire**. Dr. Bill Lord, Extension Specialist in New Hampshire is coordinating the tour. We will have more info about the tour in succeeding newsletters.

Interstems Used in Japan

Since the 1970's the interstem tree has been widely used for dwarfing many of the Japanese apple varieties. Depending on scion vigor, these trees are planted 4 X 1.5 meters (13' X 5') on M.26 interstem pieces over a rootstock known as "Weeping Marubakaido" (*Malus prunifolia* var. Ringo). Mr. Koike, one of our guest speakers in Toronto, will describe the management of these trees on largely slender spindle systems and he will report results of experiments utilizing a new clonal selection named Marubakaido N-1. Marubakaido is similar in vigor and in use to MM.111 in North America. Prior to the 1970's 2 - piece trees on Marubakaido were planted 8-10 m. apart and trained to the open center. The rootsystem of Marubakaido is desired by Japanese apple growers because it is hardy, and it is resistant to wooly aphid, crown rot, drought, and wet feet. N-1 is gaining in popularity in the Nagano area of Japan. Mr. Koike will also report results of experiments he has conducted on ; depth

of planting studies with interstems, effects of interstems on growth and fruit of 'Fuji'(vigorous) and 'Tsugaru' (nonvigorous) scions and effects of shading on root nodule (burr knot) formation. **H.Koike & K.Tsukahara**

Asian Pear and Peach Rootstocks in Japan

Mr.Koike will also describe the performance of the main and experimental rootstocks used in Japan for pear and peach.

Asian Pear

Pyrus serotina

Pryus betulaefolia

Pear seedling

Peach

Wild peach (P.persica)

Rootstocks bred for resistance to root knot nemas.(P.persica)

'Niwaume-Hiratsuka' (P.japonica) clonal selection

a good dwarfing rootstock for high density plantings.

H.Koike, H.Yamanishi, & H.Makita

High Density Peach Training Systems in Illinois

Dr. Brad Taylor, S.I.U., Carbondale, recently gave me an impressive tour of his high density peach trial. He will be giving a progress report on this trial at the Toronto conference. So far one of his treatments, Belgian Fence, is producing top yields (no trellis) along with the Taturra system. You don't want to miss this one if your are a peach grower.

Japanese Apple Cultivars

Mr.Koike will describe many of the standard and new apple cultivars used and developed in Japan at our upcoming conference. For those of you wishing more information, Dr.Richard Norton, Washington State Univ., along with two co-authors have recently published a descriptive article on the subject in Fruit Varieties Journal (Jan. 1987 Vol. 42 [1]:22-28.) Dr. Norton notes that there appears to be a preference in Japan for "sweet tasting apples with soluble solids at least 13% and acidity less than 0.5%." He notes that Europeans prefer tart apples and that Americans seem to have a mixture of preferences.

NC 140 Interstem Trial Results Published

An NC 140 apple interstem trial established in 1976 in 10 states was terminated this past year and results published in Fruit Varieties Journal Vol. 40 [4]: 108-115 [Oct. 1986]. FVJ is a publication of the American Pomological Society.

NC 140 trials have been partially funded by IDFTA member contributions to the Rootstock Research Fund. The trial consisted of two scion cultivars, "Sturdeespur Delicious" and "Empire" on a 15 cm (6") interstem piece oc M.9 grafted to rootstock treatments, MM.111, Ottawa 11 and Antonovka seedling. Tree loss was least on MM.111 but "significant" and "unacceptable" on Antonovka and Ottawa 11 with greatest loss to Antonovka. Survival results of this study support the wide adaptability of MM.111 and confirm cold injury susceptibility

of Ottawa 11 and Antonovka. Some tree loss of Antonovka at several sites was attributed to root suckers infected with fireblight. Generally trees of both cultivars were smaller on MM.111 than Ant. or O.11 and lowest on MM.111. Details of the results are found in the paper coordinated by D. Ferree, Oh. and co-authored or tested in IL.-Simons, IN-Hayden, IA-Domoto, KS-Morrison, KY-Brown, MA-Lord, MI-Perry, MO-Warmund, WI-Stang, and Ohio.

Preliminary Results of an NC 140 Apple Rootstock Trial

The following results were just reported in Fruit Varieties Journal 41 (1): 31-39, 1987. Starkspur Supreme Delicious was planted in 1980 on 9 rootstocks in 25 states and 2 Canadian provinces (Que. & Ont.). The nine rootstocks compared included Ottawa 3, M.7 EMLA., M.9 EMLA, M.26 EMLA, M.27 EMLA, M.9, MAC9, MAC 24, and OAR 1. EMLA denotes clones released from East Malling-Long Ashton research stations in England as virus free. Thus far, greatest tree loss has occurred on Ottawa 3, M.27 EMLA; M.9 EMLA and MAC 24. Trees on M.9 EMLA are similar in vigor (averaged across all sites) to M.9 and MAC 9. "Trees on MAC 9 had high early yields and yield efficiency, and trees on MAC 24 and OAR 1 were relatively slow to begin production in most sites." Researchers report their assessment of many characteristics including anchorage, which appeared to be a serious problem for trees on M.9 EMLA, M.27 EMLA, and M.9 (grown without support). Researchers warned that "Early productivity of Starkspur Supreme Delicious was so great on MAC 9 that terminal growth was adversely reduced and at 5 years of age, many trees appeared "runted out". At this time most researchers prefer the characteristics of M.7 EMLA.

Scion Influences Rootstock

Dr. Roy Rom of the University of Arkansas has shown in research, partially sponsored by the IDFTA, that the amount of root development in a rootstock is highly influenced by scion vigor. He found that there was less rooting of the same stock when there was a spur-type scion vs. a non-spur. Dr. Bruce Barritt, Washington State University, Wenatchee found similar results with different varieties and rootstocks selected. This would explain why we often see differences in anchorage following varietal changes. For example growers often report of anchorage problems of Red Delicious on M.7, M26, and sometimes MM.106. This problem is accentuated when trees are planted on heavy soils or shallow soils. Dr. R.Unrath, N.C. State Univ., Asheville, N.C., reported at an NC 140 meeting, that there was approx. twice the loss of trees with MM.106 stock and Red Delicious scion (13%) than with Golden Delicious scion. A plant pathologist attributed death primarily due to Phytophthora cactorum, crown rot. This observation has been noted before on other crops. Therefore, scion vigor influences root system vigor and mass which may also affect a root systems' ability to tolerate soil stress.

"Rootstocks for Fruit Crops"

You may have heard in the past couple years about a new reference book on fruit rootstocks which was being written. Editors R. Rom and R. Carlson have announced that the book will be available in March, published by John Wiley and

Sons. The book will be sold for \$54.95 U.S. and have 496 pages. Numerous experts have contributed to the book which will make it a great addition to your fruit library. Proceeds from net sales of the book will go to the IDFTA.

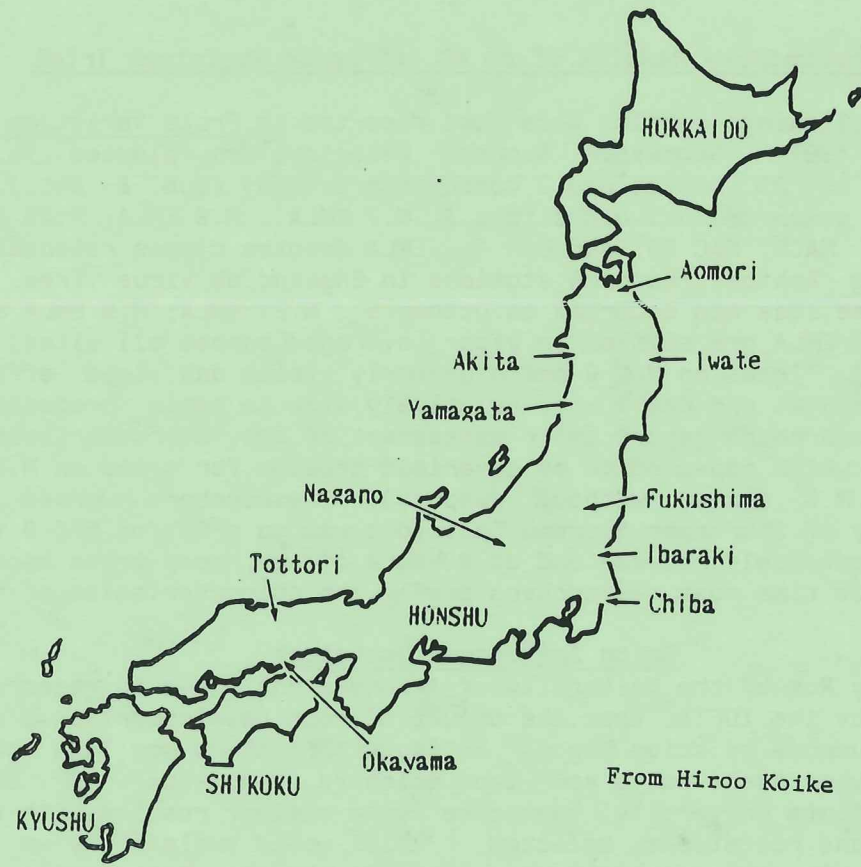


Fig 1. Map of Japan. (Deciduous fruit growing areas)

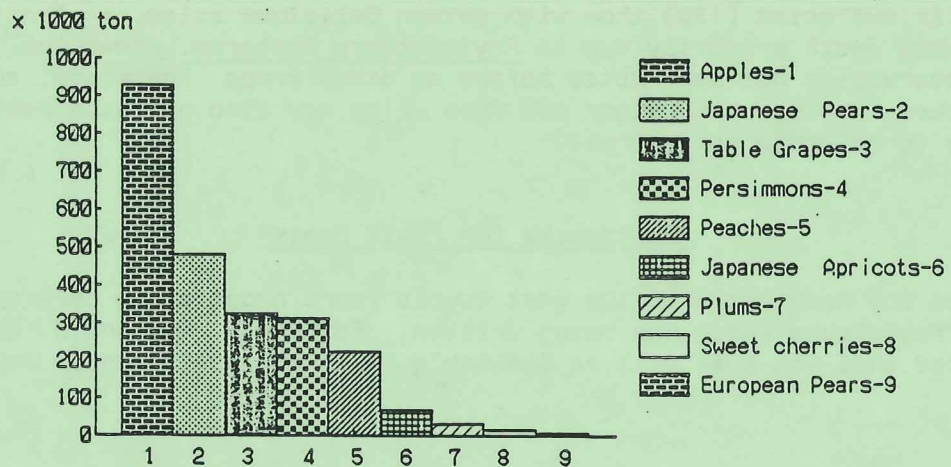


Fig 2. Main Japanese deciduous fruit production. Average of the last 3 years.

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No. 1 January 1987 Prepared by Ronald L. Perry

30th ANNUAL CONFERENCE, TORONTO, CANADA

You should find enclosed, information pertaining to the upcoming conference in Toronto. Materials in this mailing include a conference **pre-registration form, the program, and hotel reservation form.**

The deadlines to note are Feb. 6 and Feb. 20. Feb. 6: Should you choose to stay in the Hilton Harbour Castle Hotel, rooms will be set aside for IDFTA conference attendees until Feb. 6, after which time remaining rooms are available to the public.

The special conference room rates (note in Canadian \$) are good for Feb. 28 through March 4, regardless of when you make the reservations. Reservations may be made by telephone (remember to say that you are attending the IDFTA conf.). Allow 2 weeks when mailing across the U.S./Canada border unless by express mail service. U.S./Canada exchange, 35-40%.

Feb. 20: Deadline for conference pre-registration fees. Note that fees are increased after Feb. 20. Also note that we prefer all prepayments in U.S. dollars. Canadian currency will be accepted at the registration desk for late registration.

THE PROGRAM

We have strived to make the program as educational as possible utilizing our past format. Note that we will entertain an open forum session centered around the conference theme "Fruit size and quality from small trees," at its conclusion. So bring your questions. We are looking forward to the banquet where Mr. Jean Pierre Prive' will present an entertaining slide presentation on "Canadian Agriculture, Coast to Coast." I would like to thank in advance the efforts of Canadians Harold Schooley, IDFTA board member, Tom (past Pres. & board member) and Carol Chudleigh, and Mr. Joe Uyenaka, Ontario Ministries Agriculture and Food. These people have helped plan and make arrangements for the Ladies program, orchard tour and educational program.

I hope that our speakers, Dr. Frank **Eady**, Director, Horticulture Research Institute of Ontario, and Mr. John **McGuigan**, Cedar Springs, Ontario, will forgive me for misspelling their names in the program.

ACTIVITIES AT THE CONFERENCE

Sunday evening, March 1, informal dinner: Tom and Carol Chudleigh have invited IDFTA members to join them in a buffet dinner atop the CN Tower starting at 6:30 PM. The revolving restaurant is atop Toronto's trademark as the world's tallest free-standing structure, 553m (1,815 feet). If interested in joining, meet in the main lobby of the Hilton Hotel between 5 and 6 PM. or in the restaurant at 6:30 PM.

Monday, March 2: Ladies Toronto Tour: Continuing with their gracious hospitality, Tom and Carol have offered to lead ladies on a guided bus and walking tour of Toronto, starting at 9 AM and returning to the hotel at 4 PM. I'm sure men would be welcome to join them. Note on the registration form the approximate cost (\$12.00 U.S.) and that we will need advance notice of interest (reservation only).

Wednesday, March 4: Orchard Tour: We again thank Harold Schooley and Joe Uyenaka for their time and efforts for organizing the orchard tour. Buses will depart from the hotel and visit orchards west of Toronto. Among 4 to 6 orchards on the schedule, we'll be visiting an apple orchard owned by Al Ferri. He has Pick Your Own and a farm market and trees on M7, MM106, MM111, and standard root. John Warner from Ag Canada and Dr. Oberhofer from Italy, among others, will be called upon to demonstrate their pruning and training techniques here. We'll also visit Walter Bianchis' orchard on MM106 and M26. Dr. Don Elfving, HRIO, Simcoe, among others, will demonstrate techniques to improve light conditions in closely spaced trees. A catered lunch is planned and more details about the tour will be divulged later.

Thirty Year History - IDFTA:

The first phase of the first thirty year history of our association is under way. If you attended the first two DFT meetings (1957-58) at Hilltop Orchards, Hartford, Mi., please send me your full name and address as soon as possible. I will list you as Charter Members of the Association. The Association was formally registered in 1958.

If you wish to write a brief paragraph of historic interest, and if you have a glossy black and white photo of some one pruning a tree, or something relating to the start of the Association, it will be appreciated. Address the letter to R.F. Carlson, A334 Plant & Soil Science Bldg., MSU, East Lansing, Mi. 48824.

A Unique System for Crowded Trees

Dr. Alan Lakso, reported at the Michigan State Hort. Society meeting, about a new system he devised and which he and Dr. Robinson at Geneva, N.Y. are perfecting, called the "Palmette Leader". It is being used in crowded, medium density orchards, by maintaining a lower whorl of branches on a central leader trained tree but converting the upper whorls to a Palmette in a North/South direction (hopefully). The system appears to improve canopy light which produces better quality fruit and higher production. Dr. Robinson will discuss the system in detail at our Toronto meeting.

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No.4 May 1987 Prepared by Ronald L. Perry

IDFTA SUMMER ORCHARD TOUR - NEW HAMPSHIRE

JUNE 28 - 30, 1987

We are already indebted to Bill Lord, New Hampshire State Fruit Extension Specialist for the work which he and his committee have put forth in organizing this years' IDFTA annual orchard tour. Many of you are probably wondering what happened to all the information about the tour promised in the last newsletter (#3-87). Well, by the time I started gathering all of the material it would have cost us a bundle in postal charges. So this issue has the info. promised on the **Farms to be Visited** and the **Reservation Forms** for staying at the Sheraton Tara Wayfarer Inn, Bedford, NH (Official Headquarters). As in the last newsletter, alternative places to stay include Howard Johnson's, 298 Queen City Ave., Manchester, NH (603-668-2600) or Koala Inn, 55 John E. Devine Dr., Manchester, NH (603-668-6110). **In an effort to ease the problems of registering people for this tour, the hosts have set up an "early bird" deal by making the registration fee lower for those who send the completed form (yellow in the last newsletter) in by June 10.** Remember that the form along with your fee should be sent to **IDFTA Summer Tour, C/O William Lord, 102 Nesmith Hall, University of New Hampshire, Durham, NH 03824-3597.** Checks should be made payable to : **N.H. Fruit Growers Association.** For program information you may telephone: William Lord- (603) 862-3203 and for Registration Info: Charlotte Cooper: (603) 862-3201.

New Hampshire Farms To Visit

Moose Hill Orchard, Londonderry

Moose Hill includes several dwarfing rootstock orchard planting systems including substantial plantings of M.9 interstems, MM 106, M.7, and a 4-year-old trellis planting on M.9. The roadside stand at Moose Hill is a major sales route and numerous gourmet apple cultivars (including 12 A. Mutsu) are grown to suit market demand. The farm also includes strawberries and raspberries for the U-Pick market, pumpkins, and other vegetables.

Sunnycrest Farm, Londonderry

The farm has been almost entirely converted from standard-sized trees to semi-dwarf plantings. McIntosh on M.7 is the production staple with many blocks from 1-10 yrs. of age to view. Color with McIntosh is a real issue and early

coloring strains such as Marshall McIntosh have been planted extensively. 1987 will see continued growth for Sunnycrest with a 20-acre, under-powerline planting of Mark and M.7 due to go in about April 30. Sunnycrest relies on a roadside stand as a major sales outlet and grows strawberries for the U-Pick trade.

Brookdale Fruit Farms, Hollis

Harold Hardy has recently retired from active farm duty and turned 100 just a few weeks ago! He has seen a lot of changes in the apple business and began with size-controlling rootstocks in the late 1940's. Today the farm features McIntosh on M.7 as the principle apple combination, but there are plenty of other varieties (even a few Grannies) and rootstocks (M.9, M.26, interstems, MM 111, MM 106, M.27, & Mark) to add variety and satisfy the need all growers have to always be looking to the future. The farm features a large roadside stand/garden center as a major sales outlet. Several acres of strawberries and highbush blueberries have been developed for the local U-Pick and several greenhouses growing bedding plants and the like round out the operation.

Woodmont Orchards, Londonderry

The Lievens family operates N.H.'s largest orchard consisting of 650 acres of apples on 3 farms. They pack and market as a major independent in the New England wholesale markets. McIntosh on rootstocks such as M.7 and MM 106 comprise the bulk of the plantings of the past 20 yrs., although some interstem plantings have also been made. The Londonderry farm features a large fruit storage and packing operation. Our stop at Woodmont will include a series of educational "stations" on orchard pest management and storage mgmt, etc.

Elliot-Williams Rose Co., Dover

The Williams family is well known as one owning and operating of the world's premier cut rose operations (which we'll get to see). Diversification is the key to economic viability in N.H. agriculture and Elliot-Williams Rose is broadening its production base. Over the last several years the Williams' have added 30-35 acres of apples on M.7, MM 106, and other rootstocks, 5 acres of peaches, small fruit, bedding plants, etc.

Gould Hill Orchard, Contoocook

You may not want to leave the Leadbeater's farm--from Eric and Sue's porch you look out over a U-Pick block of M.26's to the beautiful White Mountains. This orchard offers apple varieties by the dozen to customers who probably enjoy the view almost as much as the fruit.

Avaloch Orchards, Boscawen

Greg Homan has developed this farm over the past 5 years from a mixture of scrub brush and semi-abandoned hay fields. There are now 30 acres of McIntosh, Cortland, Empires, and Delicious mostly on M.7, plus a new raspberry and blueberry planting.

Apple Ridge, Boscawen

David and Tina LaRoche have developed this operation for the retail

market exclusively. The orchard consists of McIntosh and other popular local varieties on interstems. Sales include U-Pick and a roadside stand that includes cider and pies made on site.

William Lord

Proceedings 30th Annual Conference, Toronto, 1987

Volume 20 Compact Fruit Tree, will soon be going to the printers. My target date is to them available before the summer tour. If you have not paid your 1987 dues yet, you still have time to get in what I think is an excellent proceedings. The speakers at our conference did an excellent job of writing.

THE IDFTA GAVEL

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Robert F. Carlson
IDFTA Secretary 1958-1986



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Edited by

Roy C. Rom and Robert F. Carlson

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UNIVERSITY

COMPACT FRUIT TREE

ROOTSTOCK BEHAVIOR

SPUR TYPES

INDUCED DWARFING

CULTURAL PRACTICES

THE INTERNATIONAL DWARF FRUIT TREE ASSOCIATION

No.4 May 1987 Prepared by Ronald L. Perry

IDFTA SUMMER ORCHARD TOUR - NEW HAMPSHIRE

JUNE 28 - 30, 1987

We are already indebted to Bill Lord, New Hampshire State Fruit Extension Specialist for the work which he and his committee have put forth in organizing this years' IDFTA annual orchard tour. Many of you are probably wondering what happened to all the information about the tour promised in the last newsletter (#3-87). Well, by the time I started gathering all of the material it would have cost us a bundle in postal charges. So this issue has the info. promised on the **Farms to be Visited** and the **Reservation Forms** for staying at the Sheraton Tara Wayfarer Inn, Bedford, NH (Official Headquarters). As in the last newsletter, alternative places to stay include Howard Johnson's, 298 Queen City Ave., Manchester, NH (603-668-2600) or Koala Inn, 55 John E. Devine Dr., Manchester, NH (603-668-6110). **In an effort to ease the problems of registering people for this tour, the hosts have set up an "early bird" deal by making the registration fee lower for those who send the completed form (yellow in the last newsletter) in by June 10.** Remember that the form along with your fee should be sent to IDFTA Summer Tour, C/O William Lord, 102 Nesmith Hall, University of New Hampshire, Durham, NH 03824-3597. Checks should be made payable to : **N.H. Fruit Growers Association.** For program information you may telephone: William Lord- (603) 862-3203 and for Registration Info: Charlotte Cooper: (603) 862-3201.

New Hampshire Farms To Visit

Moose Hill Orchard, Londonderry

Moose Hill includes several dwarfing rootstock orchard planting systems including substantial plantings of M.9 interstems, MM 106, M.7, and a 4-year-old trellis planting on M.9. The roadside stand at Moose Hill is a major sales route and numerous gourmet apple cultivars (including 12 A. Mutsu) are grown to suit market demand. The farm also includes strawberries and raspberries for the U-Pick market, pumpkins, and other vegetables.

Sunnycrest Farm, Londonderry

The farm has been almost entirely converted from standard-sized trees to semi-dwarf plantings. McIntosh on M.7 is the production staple with many blocks from 1-10 yrs. of age to view. Color with McIntosh is a real issue and early

coloring strains such as Marshall McIntosh have been planted extensively. 1987 will see continued growth for Sunnycrest with a 20-acre, under-powerline planting of Mark and M.7 due to go in about April 30. Sunnycrest relies on a roadside stand as a major sales outlet and grows strawberries for the U-Pick trade.

Brookdale Fruit Farms, Hollis

Harold Hardy has recently retired from active farm duty and turned 100 just a few weeks ago! He has seen a lot of changes in the apple business and began with size-controlling rootstocks in the late 1940's. Today the farm features McIntosh on M.7 as the principle apple combination, but there are plenty of other varieties (even a few Grannies) and rootstocks (M.9, M.26, interstems, MM 111, MM 106, M.27, & Mark) to add variety and satisfy the need all growers have to always be looking to the future. The farm features a large roadside stand/garden center as a major sales outlet. Several acres of strawberries and highbush blueberries have been developed for the local U-Pick and several greenhouses growing bedding plants and the like round out the operation.

Woodmont Orchards, Londonderry

The Lievens family operates N.H.'s largest orchard consisting of 650 acres of apples on 3 farms. They pack and market as a major independent in the New England wholesale markets. McIntosh on rootstocks such as M.7 and MM 106 comprise the bulk of the plantings of the past 20 yrs., although some interstem plantings have also been made. The Londonderry farm features a large fruit storage and packing operation. Our stop at Woodmont will include a series of educational "stations" on orchard pest management and storage mgmt, etc.

Elliot-Williams Rose Co., Dover

The Williams family is well known as one owning and operating of the world's premier cut rose operations (which we'll get to see). Diversification is the key to economic viability in N.H. agriculture and Elliot-Williams Rose is broadening its production base. Over the last several years the Williams' have added 30-35 acres of apples on M.7, MM 106, and other rootstocks, 5 acres of peaches, small fruit, bedding plants, etc.

Gould Hill Orchard, Contoocook

You may not want to leave the Leadbeater's farm--from Eric and Sue's porch you look out over a U-Pick block of M.26's to the beautiful White Mountains. This orchard offers apple varieties by the dozen to customers who probably enjoy the view almost as much as the fruit.

Avaloch Orchards, Boscawen

Greg Homan has developed this farm over the past 5 years from a mixture of scrub brush and semi-abandoned hay fields. There are now 30 acres of McIntosh, Cortland, Empires, and Delicious mostly on M.7, plus a new raspberry and blueberry planting.

Apple Ridge, Boscawen

David and Tina LaRochelle have developed this operation for the retail

market exclusively. The orchard consists of McIntosh and other popular local varieties on interstems. Sales include U-Pick and a roadside stand that includes cider and pies made on site.

William Lord

Proceedings 30th Annual Conference, Toronto, 1987

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No. 5 October 1987 Prepared by Ronald L. Perry

Orchard Summer Tour - New Hampshire

Our thanks go out to Bill Lord and to the New Hampshire Fruit Growers for their splendid hospitality and efforts in showing us New Hampshire fruit growing. There were about 240 people who attended both days of the tour which took us through apple and peach orchards, strawberry, blueberry and raspberry fields, and even greenhouses for growing roses. It was quite apparent that diversification is extremely important in the areas visited. Much was learned by many on the tour, and it was majestically capped off with lunch on the Leadbeater's lawn on top of a mountain which gave us a splendid view of their surrounding orchards and the White Mountains.

Thanks again to our New Hampshire friends.

Future Summer Orchard Tours

Summer tour invitations have been extended to the IDFTA from grower groups in California, West Virginia, and Nova Scotia. A decision will be made at the December Board of Directors meeting on their acceptance and sequence.

Annual Conferences

1988 Hershey, PA.

1989 Grand Rapids, MI.

1990 Penticton, British Columbia (under consideration)

32nd Annual Conference

The 32nd Annual Conference will be held in Hershey, Pennsylvania, Feb. 28, 29, and March 1 and 2, 1988.

We're hoping to draw a large crowd at the meeting as we did in Toronto in 1987. Topics planned for the meeting include a session on peach production, rootstocks, and training systems from a California and Italian perspective. Also we will have a lengthy session on the development and management of apples on the French Axe systems. Mr. Pierre Herman, S.C. E. A. Domaine De Castang, (Nursery and Orchard operation), Bergerac, France will be on hand to give us details on his modified axe system from a commercial grower's perspective. Also, in response to many requests, we will have a panel of those who have had experience growing apples on MARK rootstock. "Back by popular demand" will be

a one-hour (open-forum) question/answer session (at the end of each day). Many other topics are planned.

All-in-all we hope that the upcoming meetings will be an educational and fun experience. More details in the upcoming newsletter.

Compact Fruit Tree Vol. 20

Hopefully, all paid members have received copies of the 31st annual conference proceedings, held in Toronto. We still receive postal notices of destroyed packages, sometimes lacking the destination address. Please let us know if you haven't received your copy, or if you have had a change of address.

Speaking of Vol 20, I mistakingly left out Table 2 of Dr. Tukey's paper "Matching the Rootstock with the System", pages 84-90. So included in this mailing is the missing table. That's one of the problems with being a mortal editor!

IDFTA Foreign Study Tour

Dr. Bob Carlson has announced plans for a three week orchard study tour to Russia, Hungary, Belgium, and Holland. The dates for the tour are tentatively June 19-July 18, 1988. Regions in Russia will include north of Leningrad, and the more southern Black Sea, and Caspian Sea. Pome and stone fruit orchards will be visited in these regions. In Belgium growers will learn of new cultivars for apple and cherry, new hardy dwarf fruit tree rootstocks, updates on new tree training systems and methods of harvesting fruit. Most of the commercial fruit growing in Holland is on Polders which is actually below sea level being established by "diking out" the sea.

Dr Carlson says that the limit is 35-38 people or one bus load. Reservations will be accepted on a first-come, first-serve basis. To get on the travel roster, growers and others should contact Dr. Robert Carlson, 4598 Seneca Dr., Okemos, MI. 49964, telephone (517)349-9303, or the College Travel Office, 130 West Grand River, Box 1608, East Lansing, MI. 48823, Tel. (517)351-6010.

Tree Stakes Becoming Popular

I have joined many of you in trying out the new tubular stakes in establishing apple plantings. I, too, can echo those of you who attest to the super growth young trees make when trained to a stake. I planted several varieties on MARK rootstock on a slender spindle compared to a France Axe system this past spring, and I was surprised to see the response. Researchers have found that trees tied to a stake emit less ethylene than free standing trees. This natural gas found in fruit storages, is also produced in the trunk tissue during windy (movement) conditions and is responsible for restricting vertical growth of the central leader or stem of the tree. So where we have often thought of stakes and trellises essential for cropping support, we may look at stakes as essential as perhaps water and/or fertilizer for getting trees off to a good start.

IDFTA Board Members - Up Close

Walter Krause, P.O. Box 32, Reedley, CA. 93654, Tel. (209)638-2169, was elected by the board in 1987. Walter has been an active IDFTA member since 1968. He grew up on a farm in central San Joaquin Valley and was affiliated with a nursery for 13 years. He started his own nursery operation in 1963. Walter was educated, formally, at Reedley College, but maintains that his real education began when he started travelling. He began his love interest and education in fruit growing with one of Dr. Carlson's foreign study tours. Since then, he has travelled extensively in Europe.

Mr. and Mrs. Krause have 3 children, two of which live in Yakima and Wenatchee, Washington. He is in partnership with a daughter and her husband who manage the family farm. Walter still keeps actively involved in fruit growing where he lives on Highway 80 with 5 acres (1000 trees) of apples on dwarfing rootstocks and sells fruit in their stand. He continues his age-old passion of evaluating new varieties and rootstocks (over 370 varieties).

Tim Mercier, P.O. Box 425, Blue Ridge, GA. 30513, Tel. (404)632-2801, was elected to the board in 1987. Tim has a wife and two daughters and has been an active member in IDFTA for 15 years. He is presently the manager of Mercier Orchards, which was started in 1942 by his father, Bill. He received a B.S. in Horticulture from Univ. of Georgia and a M.S. in Plant Pathology from Clemson University. Although retired, Tim's father is still active in the farm business. His orchard comprises 200 acres of apples with 25 cultivars. Fruit is marketed wholesale and retail from the farm. Most of the apples are grown on M7, M26, and MM111 rootstocks. The Mercier's also grow smaller plantings of peaches, blueberries, and raspberries. Tim is a busy man as he also serves as Chairman of the Georgia Apple Commodity Committee.

Three Row Beds NOT Recommended in England

Senior fruit advisor, Harold Chambers, ADAS, Hereford, U.K. at the Luddington EHS Fruit Open Day on August 12 discouraged apple growers in growing on 3 row beds. He went on to warn, "If you are now only producing 500 bushels on a single row system, I don't think there is any hope that you will be producing 1200 bushels on the bed system. Three-row-beds require intensive management and paying close attention to detail to make it work. If you don't want to get to know each tree by name, three-row-beds are more likely to lose money than make it," he said.

September/October, 1987

"The Fruit Grower", Maidstone, Kent, U.K.

Instant Orchard

I recently had the fortune to visit the Hood River Fruit Research Station in Oregon. While there, Dr. Eugene Mielke, station superintendent, showed me an experiment that he and project leader, Dr. Bob Stebbins, OSU, Corvallis, have been working on. Dr. Stebbins calls it "Instant Orchard". He plants maiden trees from the nursery into containers and grows them for 2 years before planting in the orchard. The goal is to bypass the 2-4 years of growing time without fruit production after pulling an orchard by having the container trees ready to plant when the old orchard is pulled. The best container dimension for apples and pears appears to be 4 ft. x 4 ft. x 2 ft. deep. Containers are made of wood framed 4 mil. (.004 inch) plastic which come apart readily for ease in planting. Trees are arranged in a nursery setting with containers attached to one another and trickle irrigated. Dr. Stebbins and Dr. Mielke are currently determining the best growing medium and nutritional requirements. They estimate that the tree costs \$16 to grow for the 2 years. Many of the Red Delicious trees I saw had a crop in their second year.

From : L. Tukey. 1986. Matching the Rootstock with the System.
Compact Fruit Tree. Vol.20 : 84 - 90.

Table 2. Information on tree size and yield for four cultivars on selected stocks and interstocks planted in 1983.

Stock	1986 Trunk x-sect (cm ²)			1986 crop (kg/tree)		
	Gravenstein	McIntosh	Spartan Empire	Gravenstein	McIntosh	Spartan Empire
MAC 4	63.1 ¹		31.3	0.3 ²		6.4
MAC 24	55.2 ³		36.6 ²	1.0 ³		3.0 ²
MM 111	61.3	36.0 ³	24.5	1.6	8.0 ³	3.2
MM 106	64.2	26.7 ²	32.4	1.7	9.6 ²	11.0
CG 55	33.4	34.2 ³	20.5 ³	0.1	4.2 ³	1.8 ³
M 7A	50.6	37.9	21.5	0.4	7.5	5.3
M 7 EMLA	43.4	44.2	20.2	0.4 ²	13.0	1.0 ²
O 3	30.4	16.9 ²		10.1 ³	5.3 ²	
CG 80	15.6	23.4 ²		0.1	2.2 ²	
Mark/ MM 111	28.1			6.9		
M 27/ MM 111	29.9			4.8		
O 3/MM 111	16.2 ³			6.6 ³		
Mark/A 2	38.0			2.6		
M 27/A 2	23.0 ²			7.4 ⁴		
M 27/BA	23.0			1.6		
O 3/BA	34.0			16.3		
M 26/BA	15.4			0.6		
P1/BA	36.4 ³			0.1 ³		
P2/BA	56.6			1.8		
P22/BA	23.0			0		
M 27/MM 106	27.7			15.0		
M 27/MAC 24	39.5 ³			3.8 ³		
M 27/M 25	28.7 ¹			5.5 ¹		

MAC - Michigan Apple Clone; M - Malling; BA - Beautiful Arcade seedlings; Bud - Budagovsky; Mark - MAC 9;
O - Ottawa; CG - Cornell-Geneva; 7A & 7 EMLA are M7 freed of most and all known viruses respectively; P - Polish; MM - Merton-Malling.

1, 2, 3 - indicates number of trees where these are less than the usual 4 per plot.