

Department of
Horticulture

MICHIGAN
STATE
UNIVERSITY

COMPACT FRUIT TREE

DWARF FRUIT TREE ASSOCIATION

Rootstock Behavior

Spur Types

Induced Dwarfing

Cultural Practices

Vol. 7, No. 1, Dec. 1973. Prepared and edited by R. F. Carlson

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NOTE: The Board of Directors at the March 21, 1973 meeting amended the by-laws Article VI, Section I to read "The business and affairs of this association shall be governed by a board of not more than 15 directors". The board is open to suggestions of names of qualified active, young fruit growers (women included) from fruit growing states and Canada to gradually fill these open board positions.

TWO EAST MALLING RETIRED MEN PASS AWAY

Dr. W. Stephen Rogers passed away August 25. He was head of the Pomology Division and noted for root studies of fruit trees for over 42 years. Studies included influences of ground covers on tree growth and production.

T. N. Hoblyn, a former acting Station Director and noted for pomological research died suddenly September 8, 1974.

FRUIT PRESENT AND FUTURE-Volume II

This 180 page book is unique, containing 28 articles of practical information covering varieties, pollination, dwarfing, culture etc. Of special interest to fruit growers are two articles: 1. History of National Fruit Trials and 2. Dwarf Fruit Tree Association of North America--Its Origin, Growth and Development. This book is available from the Royal Horticulture Society, Vincent Square, London SW1P 2 pe. England. Approx. cost \$4.80.

COMPACT COMPOSITE (Vol. 6 DFTA)

In October 1973, Vol. 6; 180 pages, was mailed to members of the association. It contains most of the papers presented at the 16th annual conference of March, 1973. A limited number of copies are available at \$4.00 per volume.

BACK VOLUMES

Back volumes are still available of the following:

- Vol. 2 - 117 pages: \$2.50
- Vol. 3 - 102 pages: \$2.00
- Vol. 4 - 129 pages: \$2.00

Please make check payable to Dwarf Fruit Tree Association and mail request to: P.O. Box 143, Hartford, Michigan 49057.

BULLETIN AND REPRINTS

Limited number of free publications are available as follows: The Spartlet Pear, Myrobalan Selections as Rootstocks for Plum, Developing Dwarf Apple Trees, and other research reprints. Send request to: 303 Department of Horticulture, Michigan State University, East Lansing, Michigan 48824.

PROGRESS REPORT OF M.26

M.26 is one of the newer clones from East Malling developed out of a cross of M.16 and M.9. It was introduced to the U.S.A. in about 1958.

Characteristics: An over-growth of M.26 forms below the graft union. Its roots are somewhat brittle; however, it provides better anchorage than M.9. It is more precocious than M.7 giving high production of large uniform fruit. M.26 does not sucker as much as M.7 and propagates well in stool beds. It is not resistant to wooly aphids or to collar rot.

Response:

Orchard tests over 10 years show that M.26 performs well under certain soil and climatic conditions. Where problems of collar rot have occurred, the cause often has been due to compact clay soil conditions. Precocity, cropping, tree vigor, and anchorage have been better than M.9 and equal to that of M.7.

'Golden Delicious', 'Red Delicious' and 'Jonathan' on M.26 on clay loam soil in Michigan has performed well showing the following trends:

1. 'Golden Delicious'/M.26 are well anchored and have not been staked; however, the trees are rather small in their 8th year. Staking would help in training the central leader and avoiding "fruiting out" of the leader.
2. 'Jonathan'/M.26 has given a larger bushier tree and it appears compatible. There has been no problem with tree anchorage.
3. 'Spur Red Delicious'/M.26 to date appears to be an excellent combination giving early fruiting, high production, and good tree anchorage.

High Budding: M.26 should be budded at least 12 inches above ground level in the nursery so that 1-year old trees can be planted 10 inches deeper when setting the trees. If the soil is heavy, avoid using M.26 rootstock, because collar rot can be serious, especially with high budded trees planted deep.

Plant Spacing: Apple varieties on M.26 observed both as free standing and staked trees have grown and cropped well; however, tree size varied with the scion variety. In planting and spacing trees in the orchard, the particular scion variety used should be considered. The less vigorous varieties should be spaced 8 x 16 feet (339/acre) and the vigorous varieties, 10 x 18 feet (242/acre). An average tree spacing for all scion varieties/M.26 could be in the vicinity of 8 x 18 feet.

In General: M.26, although not completely evaluated, likely will be widely used for compact trees in high density plantings. When more information has been gained, M.26 may prove to be comparable to M.7 in longevity and performance. Since M.26 does not tolerate heavy soil types or wet soils in the spring, it should be planted only on well drained sandy loam soils.

PRUNING AND TRAINING HINTS

Apple trees can be pruned in late fall, winter, and spring without serious injury to cut surfaces. Most pruning is and should be done in late winter.

Stone fruit trees such as cherries, peaches, plums and apricots are best pruned during March and April.

A general rule in pruning is to make the large cuts first, and follow up by heading back and cleaning up smaller branches that need to be thinned out.

Branch training of young trees is best done when sap is active in the branches during spring and summer.

When thinning out branches to provide more uniform light to all portion of the tree, do not remove fruitful branches and spurs inside the tree.

Older orchards (8-12 years) in which there is crowding between trees and rows need immediate attention. First make 2 or more large cuts removing branches which are upright growing. Then cut back the horizontal branches to a sublateral, thus allowing free movement around the trees and better light exposure.

Do not prune excessively in one year, but moderately each year. Over pruning induces much vigor and loss of fruit condition.

Reduce or delete fertilizer applications for a year when a vigorous tree pruning program is carried out.

Summer pruning should be done in July. Remove unwanted sucker growth by pulling them off with a quick "jerk" from the base. Cut current upright growing shoots flush with the base, or if new successive shoot growth is needed leave 2 buds on the stub. Do not cut horizontal growing sub-lateral--only if they need to be removed for thinning purpose.

GROWER COMMENT

In a letter Albert Ten Eyck says, "Millerspur/M.26 is our idea of a perfect tree. I am intrigued that different varieties on a given rootstock produce different trees and yields--. Sundale/M.26 was slow in getting started, but by heavy cutting of the leader, now in the 6th year, it has a good crop--. McIntosh and Spartan on M.26 grow too large and will require a lot of pruning. With us (in Wisconsin) Red Prince/M.26 does nothing but grow. Regular Golden is also vigorous on M.26 (Ed: Could be due to successive crop failure). Idared/M.2 is a good consistent producer".

SEVENTEENTH ANNUAL PROGRAM DFTA - 1974

Dates: Wednesday, Thursday and Friday, March 13-15, 1974

Place: Pantlind Hotel, Grand Rapids, Michigan

Tour: Orchard Tour Friday afternoon

Theme: Priorities in Production and Integration of Compact Trees with Mechanization.

Speakers: Guest speakers have been contacted. Reports from experienced fruit growers are most important. Please send to the secretary names of any person you would recommend to give brief practical analysis of his fruit operations at the annual conference.

SITE--MAKES THE DIFFERENCE

An ideal fruit site, no doubt, is the best thing a grower has going for him. The best sites are those able to produce crops year after year with very few failures. These sites are few.

Elevation - Elevation, and nearness to large bodies of water are two features of good sites. Gradual slope of the land to provide air flow adds flavor. These characteristics contribute to relatively frost free conditions.

The Soil - Land with good topographical features usually has suitable soil to support fine tree growth. But, it can have a tight clay soil which does not make a fruit site.

The soil should have good internal drainage. If not, such condition should be corrected by tiling. The soil condition often will determine which fruit crop should be chosen for a particular site.

Pears and plums are crops often chosen to be grown on the heavy soils. However, they also do well or even better on lighter sandy loam. Cherries also enjoy such sites. Apple trees are more tolerable to soil variations, but prefer a well drained sandy clay loam.

Before Planting - The site may be ideal, but are the soil and planting conditions? If soil is not ready, wait a year or two before planting. Soil condition can be improved by summer fallowing and plowing under fast growing annual crops such as millet and sudan grass. If the nematode population is high, the soil should be fumigated. This is most important when coming back with trees on old orchard sites.

Elevation, slope, loam soil and adequate preparation adds up to a good productive site.

GONE IS THE ELM TREE

The stately Elm tree is nearly gone from the streets and country side in Michigan and other Eastern states. With the disappearance of the esthetic Elm, not only a tree of beauty is lost, but also lost is the lumber it supplied to make bushel crates and bulk bins for handling fruit and vegetables. Consequently substitute and more expensive wood had to be used. Bulk bins have become a scarce and expensive item for the fruit growers. Perhaps, a light weight strong substitute in the form of a plastic product or synthetic wood will take the place of lumber supplied by the Elm tree - now gone.

READY-MADE FRUIT TREES

With increases in land values each year, can the growers afford to wait 3 to 6 years after planting before crop returns? Perhaps so, if he is on a rotation program of continuously planting each year and cropping older established trees. The smaller producer or the person starting anew would prefer to get returns the first year, or at least within 3 years. How might this come to pass?

Nurserymen in the "old countries", and in a limited way in the U.S.A., for years have tailored trees to perfection, trained and pruned them to certain forms and shapes for 2, 3 or 4 years. They were sold as fruiting trees to special customers, for special uses. So, the idea is not new, but can it be tailored by the nurseryman to suit the commercial grower?

Can the Nursery Provide this Service?- Detailed cost accounting is needed to determine advantages to the grower in paying more for a tree, which will fruit the first year. Similarly, cost figures are needed for the nurserymen in finding the added cost in growing trees 2 or 3 years longer in the nursery, added shipping cost, and added labor and knowledge in pruning and training the trees in the nursery. The principle is logical, but it will require re-tooling of nursery operations and close grower-nurseryman cooperation on type and form of tree to produce.

An alternative to nursery grown, ready fruiting trees, would be for the grower to plant close and, after 3 years, transplant alternate trees. Research data on culture or economics of either system is not available. It may be worth a real try.

GROWERS CAN ADJUST TO FERTILIZER SHORTAGE

The shortage of fertilizer for 1974 has resulted in much discussion as to how one may adjust to it. It is possible that you may not be able to get the kind and amount of fertilizer you want or need for your planting.

Two alternatives must be considered: 1) You may not be able to get as much fertilizer as you would normally use and 2) you may have to pay more (because of lower nitrogen content or because of having to use a complete fertilizer) for a fertilizer you would not normally use.

If you are not able to get as much fertilizer as you would normally use, there is no reason to be concerned except for young plantings. Young (non-bearing) plantings should receive the fertilizer first. Omitting fertilizer applications on

older plantings for one or more years will not result in any serious effects. Research has shown that most fruit plantings (with the possible exception of peaches and other fruit on very light sands) will not reflect any drastic reduction in growth and/or production if no fertilizer was applied for 3 to 5 or more years without harmful effects. Also, you should bear in mind that pruning has the same effect on vigor as extra or additional nitrogen. Pruning to maintain tree size may eliminate the need for fertilizers.

There is no basis for paying a "premium" for a "special" fertilizer. Nitrogen fertilizer should be bought on the basis of its nitrogen content. Check the nitrogen. The secondary elements in the fertilizer will not provide any benefits if not needed. Most plantings don't need them.

If 1974 should result in a full crop and turn out to be a dry year, fruit size will be reduced and other effects noticed. This may be due to the shortage of water more than the shortage of nitrogen. Nitrogen and water function as co-factors. Additional nitrogen permits greater tolerance to drought conditions. Additional water permits greater response to available nitrogen. Water may be supplied through irrigation or water may be conserved by cultivation, mulching, use of herbicides and related practices. Research has shown that simazine, terbacil, and diuron will enhance the utilization of available nitrogen on many fruit crops. Mulching with partly decomposed straw or hay can completely replace the need for fertilizers....A. L. Kenworthy, M.S.U.

DWARF FRUIT TREE TOURS TO MINNESOTA-WISCONSIN

During August about 200 members of the DFTA took part in the 2-day orchard tour in the fruit areas of LaCrescent, Minnesota and Gays Mills, Wisconsin.

Gordon Yates, who operates the Fruit Acres Orchard, discussed his success with M.7, MM 104 and MM 106 rootstocks. His major concern seemed to be control of fire blight. Secondly, his trees are now approaching a crowded condition which means that he will either remove alternate trees in the row or adapt a rigid control pruning program.

In such instances, it appears to be a gamble both ways. Removal of alternate trees will nearly cut the production in half the first year. Heavy controlled pruning (heading scaffold branches back) may induce added vigor and increase incidence of fire blight infection.

Younger apple plantings were severely damaged from the unusually low 1972 fall and January 1973 temperatures. Some of these trees were planted in alfalfa fields which may have contributed to late growth in the fall. Another factor might have been the seasonal rainfall distribution, namely dry in the early summer followed by late summer rains contributing to late flush of growth.

UNUSUAL FRUIT YEAR

The late Don Hootman use to say "Fruit growing is a gamble, but interesting". This year certainly proved to be true--some made money, others not. The crop was down in some states, up in others. Labor was on hand to pick compact trees, but hesitant to tackle the big ones. We hope all of you who read this letter had a good year.

With this letter we extend our best wishes for a Happy Holiday Season and a successful, prosperous, fruitful 1974.

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Vol. 6, No. 3, January, 1973

Edited by R. F. Carlson

DWARF FRUIT TREE ASSOCIATION CONFERENCE
Wed., Thurs. and Fri. March 21, 22 and 23, 1973.
Pantlind Hotel, Grand Rapids, Michigan

Slogan: "Up-date your orchard for survival."

PROGRAM HIGH-POINTS - SPEAKERS

DR. S. J. WERTHEIM from Holland will appear twice on the program speaking about the fruit industry in Holland and Western Europe, on detailed tree management and care of high density orchards. The Dutch also are working on mechanizing fruit harvest; a topic foremost in fruit growers minds.

MR. J. E. (TED) SWALES from British Columbia will speak twice on the program. He is the District Extension Agent in an important fruit growing area, working with methods of growing, pruning, fertilizing and controlling growth of compact trees for quality fruit and high yields per acre. At a time when old orchards are being replaced by trees of different varieties and rootstocks, Ted Swales will have valuable suggestions for our fruit growers.

DR. JOHN BUKOVAC, Michigan State University, will speak on responses of the tree to the various annual treatments. Fruit trees, in order to stay alive and healthy, are subjected to numerous "exogenous" spray applications, fertilizer treatments, growth regulators, scion/rootstock combinations, pruning and training etc. What are the responses: negative or positive, stimulating or retarding, fruitful or vegetative, injurious or beneficial, perfect or imperfect? John Bukovac, having worked for years on chemical growth control, is capable of discussing tree behavior when exposed to man's treatments.

MR. ALBERT TEN EYCK, fruit grower from Wisconsin will give his impressions and ideas on how to get apples into the hands of millions of persons who have never had the chance to taste the flavors of different varieties. Albert Ten Eyck, a small grower, is succeeding in growing quality fruit on compact trees. At the same time he is concerned about ways and means to make the general public aware of the different fruit quality factors in varieties and in manners in which they are produced and marketed.

DR. MARK BRENNER, University of Minnesota, another out-of-state guest speaker will tell the audience future possibilities of complete "sucker" control. M.7, one of the best rootstocks, is inherently prone to "suckering", especially if poorly propagated. Interstem trees of certain combinations will "sucker" causing a problem which can add to the production costs. Mark Brenner, having worked with combinations of NAA and "Off-Shoot" preparations, indicates that these have use for this purpose.

GROWERS EXPERIENCES - Several leading fruit growers will participate in discussing practical aspects of tree management, tree removal, problems to avoid and short cuts in changing over from large standard trees to compact orchards.

DR. HOWARD (JACK) ROLLINS, Ohio - A Session for Answering Questions - Often growers attending meetings come away somewhat confused and with unanswered questions on many topics discussed. In the audience of this meeting there will be persons from most of the major fruit growing areas of U.S.A. and Canada. These persons are knowledgeable and capable of giving straight forward answers to most questions. The chairman, Jack Rollins will "field" the questions by spotting resource persons in the audience to answer questions. To make this session more practical, interesting, and informative, it is imperative that we have a list of questions beforehand. Other pertinent questions can be asked from the floor during the question session. At the end of this Newsletter you will find space to list your questions and return them before February 15, 1973.

DISCUSSION SESSIONS - Informal subject matter sessions will be held in 2 or 3 meeting rooms, Wednesday evening March 21. Each session will have a recorder to report on main topics in the general session that follows the concurrent sessions. Suggested subject matters to be covered in each session could be: Rootstock/variety relationship, tree spacing, cultural aspects in high densities, mechanical handling of smaller trees and others.

INTERSTEM TREES - A panel session.

The "Clark Dwarf" was an interstem tree made up of a seedling rootsystem, a hardy trunk stock, an interstem of "Clark" (M.8) and the variety. It had its good and bad features, good in production and poor due to leaning and suckering. Virginia Crab, susceptible to stem pitting virus, used in the tree, caused most of the problems. A renewed interest using more compatible combinations in the interstem tree, warrants an up-date on all possible available facts: Tentative panel participants: Robert Carlson, M.S.U.; James Cummins, and Fred Amberg, N.Y.; Paul Stark, Jr., Missouri; James Lockhard, Kentucky; Roy Rom, Arkansas and Roy Simons, Illinois.

PAUL STARK, JR. - Mexico's Growing Fruit Industry

Will it be competitive? About 15 years ago part of the strawberry industry moved south across the border and since then has shipped quality berries north. Is this also happening in tree fruits? Paul Stark, Jr. in his travel and in his nursery business has kept up on the progress and development of fruit production in Mexico and is qualified to up-date us on this possible future competition.

PRUNING TIME AND/OR CUTTING TIME?

This is the time to shape your apple trees for better cropping of quality fruit in 1973. To get this job done, several factors (men, machines and know-how) are set in motion. It involves, not only cutting out so much brush from the trees, but more important, what to prune out in accordance to age of tree, variety, rootstock, and tree spacing.

Show and Tell - Experienced growers know how to proceed in pruning apple trees, but things have changed in the last decade. The trees are smaller, some are very upright, others are spreading, so what do we do? Before moving into the orchard, spend a few hours indoors discussing with the men the particular orchard to be pruned. Use a drawing board, or blackboard to describe general conditions of the trees. Explain in detail what cuts most likely are needed to shape each tree.

Pruning is a Skill - Since conditions vary from tree to tree and from orchard to orchard, individual judgement and decision making has to be exercised by the men or women doing the pruning. Incidentally, women are excellent at this art. Hence certain basic pruning principles have to be taught to each person before pruning saws and shears are put to his use.

Follow-up Management - Good tree training and pruning comes with experience. It is not enough to show and demonstrate how to prune, but it is very important to make regular checks on the pruning crew to see how they are doing. A few mistakes corrected will save time and money. Serious pruning and tree training mistakes can take years to correct.

The Younger Orchard - The foundation for an excellent fruiting surface is initiated during the first 5 years of tree growth. Briefly this involves forming a central leader tree with strong low scaffold branches and weaker ones toward the top. Light being an all important factor, the branch selection should carefully be made so that one does not overshadow the one below. Branch spreading is part of this early training.

The Older Orchard - Two points should be kept in mind in pruning the mature fruiting orchard: 1) maintain strong lower fruiting surface by not allowing the top tree portion to become overly vigorous and 2) renew older fruiting branches with younger fruitful ones. Summer pruning can be helpful to reduce vigor in certain scion/rootstock combinations.

Detailed Pruning Information - During the 16th annual conference and orchard tours, March 21 - 23, 1973, at Grand Rapids, Michigan, discussions and demonstrations will bring out the basic facts involved in training and maintaining compact trees.

THE PEACH TREE

Most plants are adapted and will grow best in their native climates. The apple tree is suitable to the colder climates, but the peach is not quite as hardy. The peach came from the area of the Persian Gulf and thus the name Prunus persica.

The peach has made a good profit for the grower situated in a favorable climate, and a loss for others not so well situated. Man has given the peach tree every chance to make good, such as: growing it on the best sandy loam, budding it on California grown seedlings, pruning it to the 2 to 3 branch saddle, and giving it the best nutritional and spray programs...yes, even fumigating the soil, thus temporarily changing the soil micro flora.

At one time the peach, in the Eastern part of the U.S., was budded on the wild Tennessee and Kentucky natural seedlings. These "naturals" found growing in "the wild" had a small pit and seed. With fewer problems around at that time, these "natural" peach seedlings made good peach rootstocks. Anyone knowing a seed source of these "naturals" please let us know.

The peach tree can be dwarfed by budding the varieties on one of 3 rootstocks: St. Julien A plum, P. Besseyi or P. tomentosa cherry seedlings. These are difficult to work in the nursery (poor bud take) and some of the cherry seedlings will produce suckers. However, excellent dwarf peach trees can be produced on any one of these rootstocks.

BANQUET - Thursday, March 22.

DR. SYLVAN WITTWER, Director MSU Experiment Station and a faculty member of the Department of Horticulture will address the DFTA members following the banquet Thursday evening. He has had the opportunity to visit both well developed and under developed countries of the world, during his various assignments as director. Dr. Wittwer will speak on "Horticulture in USA and the World and Its Importance to People".

LITERATURE

Dwarf Fruit Trees for the Home Gardener by Lawrence Southwick (second Edition) is now available. It is a 118 page book published by The Garden Way Publishing Co., Charlotte, Vermont. It is a well prepared book with illustrations covering rootstocks, varieties, culture-care, and fruit storage for the home. It is a useful and interesting book for back yard fruit grower.

Compact Apple Tree for Commercial and Home Plantings (2-page reprint) available free from Dr. Roy Simons, Department of Horticulture, University of Illinois, Urbana, Illinois.

Propagation Methods of Fruit Tree Cultivars from Hardwood Cuttings (4-page reprint) available free from 303 Horticulture, MSU, East Lansing, Michigan 48823.

Fruit Trees and Shrubs (85-page handbook of Plants and Gardens, Vol. 27. No. 3) Published at 3110 Elm Ave., Baltimore, Md. by the Brooklyn Botanical Garden, Brooklyn, N.Y. 11225.

Fruitticoltura, Vol. 34, No. 10-11, October-November 1972. In this issue the entire MSU Science in Action, No. 17 "Developing Dwarf Apple Trees" (Lo sviluppo dei meli nana) was published. Via Emilia Levante 31/c, 40139 Bologna, Italy.

VARIETIES TO PLANT - One Man's Opinion

Pick-your-own - For this a series of varieties with different ripening dates are required. For example, from August to October: Lodi, Quinte, Viking, Paulared, Jersey mac, Beacon, Tydemans Early, Macspur, Jonathan, Red Idared and Golden Delicious.

These varieties should be budded on one of three dwarfing rootstocks: M.9, M.26 or M.7.

Dual-purpose - Here it is best to select what most likely will be in future demand. For example: Empire, Macspur, Paulared, Jersey mac, Primegold Spur type Red Delicious, Melrose, and Idared.

Processing - Varieties which can be sold for both fresh and processing should be considered. Varieties which apparently process well are: Golden Delicious, Crispin (Mutsu), N. Spy, Red Rome, Winesap Greening and Rhode Island Greening. Rootstocks: M.7, M.26 or MM 111.

STUDY TOUR TO EUROPE

The Dwarf Fruit Tree Association is sponsoring another tour to study fruit growing areas and experiment stations in part of Western Europe (tentatively: France, Belgium, Holland and England).

Approximate dates are June 23 to July 13, 1973. Due to upcoming changes in air fares, expected cost of this tour is not available. A pre-cost estimate is \$950.00 per person. Detailed travel arrangements will be mailed to interested members when available.

Maximum number of persons to participate in this study tour will be 35, and registration will be on a "first come" basis. Write to: R. F. Carlson, 303 Horticulture Department, Michigan State University, East Lansing, Michigan 48823.

GROUND COVER FOR ORCHARDS

The influence of mulches and nutrients on apple trees on different rootstocks will be discussed by Dr. Roy Simons, Illinois University, during the 16th Annual Conference March 21 - 23. Dr. Simons has had long term studies on mulching and cultural factors as related to tree growth, yields and quality.

LADIES PROGRAM

Thursday afternoon (2:00 to 4:00 P.M.) March 22, the ladies will have their own get-together with an interesting program arranged by Mrs. Kenneth (Mary) McDonald and Mr. Brunnette. The ladies are welcome to attend these meetings, as well as to relax or shop in down-town Grand Rapids.

ORCHARD TOUR

Friday, March 23, starting at noon (12:00) busses will leave from the Pantlind Hotel for visits to selected orchard and modern fruit grading packaging facilities.

NOTE ON VARIETIES

The Granny Smith variety is not suitable for Dutch growing conditions, due to poor maturity, according to tests at the Wilhelminadorp Station. The Mutsu (Crispin) matured and produced a better crop under same conditions.

PRE-REGISTRATION

Members will be mailed registration and lodging reservation material to be returned prior to the conference. Special conference room rates will be listed. In case you want to make room reservations now, please mention that you are a DFTA member and send it to the Pantlind Hotel, Grand Rapids, Michigan 49500. Telephone (616) 459-7201.

ANNUAL DUES

The 1973 annual dues (\$3.00) can be paid at conference time. Those who cannot attend can mail this to: Treasurer, P.O. Box 143, Hartford, Michigan 49057.

QUESTIONS FOR THE QUESTION SESSION.

Please list your questions on culture, varieties, rootstock, orchard management, etc. These will be answered during the Question Session of the 16th Annual Conference on March 21-23, 1973, Pantlind Hotel, Grand Rapids, Michigan.

1.

2.

3.

Please return these to Dr. Robert F. Carlson, 303 Horticulture Building, Michigan State University, East Lansing, Michigan 48823.

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TREE DENSITY CARE--A Year-Around Job

With more trees per acre, the tree training and pruning can be a year-around chore, or a never ending job. Actually, this sounds more drastic than it is, because the trees that are well trained and pruned from the start are easy to care for once they are in fruiting.

Early Care - Modern apple trees must take a definite shape or form by the time they come into bearing. Unfortunately, this form does not come naturally with most varieties. The form must be man-made. The best branches should be spread starting as soon as good scaffold branches are ready, usually the second and third years. In the third to sixth year additional "top-level" branches are similarly spread and trained. By the end of the seventh year the tree of most varieties should have its permanent established form. From then on it is a matter of maintaining this form, occasionally removing older branches and allowing the younger branches to grow in their places.

Continued Care - Be prepared to head back vigorous branches to sub-lateral branches when needed. Do not allow "top-level" branches to become overly vigorous so that they shade the lower half of the tree. Keep the tree in a pyramid shape to allow maximum light penetration to leaves and fruit.

Summer Care - At slack times, during the growing season, it is a good time to spread branches, select renewal branches, eliminate "dead" or unproductive wood, cut vigorous upright growing shoots and remove any access sucker growth. One caution: do not spread branches or do any extensive cutting if blight is present in the orchard. This can enhance blight spread. Break out any blighted shoots and remove them from the orchard.

Effects of Summer Care - Orchard summer care will result in slightly reduced tree growth when some foliage branches or shoots are removed. It will improve light penetration, reduce amount of pruning and training performed during dormant season, and it will improve over-all shape, form and productiveness of high density orchards.

Summer Ground Cover Care - Anyone having seen orchards in Western Europe, especially in England, can vouch for "lawn-cared" ground cover care in the orchards during the summer. Aside from the neat, groomed appearance of these orchards, Dr. Rogers at East Malling has proved that frequent mowing of orchard grass greatly reduces soil moisture loss. One effect of frequent mowing is the reduced rootsystem of the grass in contrast to the deep root-system of a grass sod which is seldom mowed. By mowing up to 12 times during the summer the grass sod is only 2 to 3 inches thick as compared to 6 to 10

inches of sod with infrequent mowing. Water loss is through transpiration. Therefore, by keeping the grass short the trees will have more moisture.
Robert F. Carlson

SIXTEENTH DFTA CONFERENCE

An excellent subject matter program and fine conference facilities contributed to another educational meeting. Several countries and 27 states were represented during the 3-day gathering.

The subject matter of the various speakers dealt with the practical aspects of fruit growing. Also, the underlying factors of cause and effect based on years of research and orchard trials were covered. The contributions of growers' participation in this meeting as related to actual orchard results, were of great value.

The detailed explanation of research and orchard tests in Holland and British Columbia added much to the present knowledge of tree management in high density orchards.

A detailed report of the 16th annual conference will be published in the August issue of "Compact Composite", a proceeding of DFTA.

SUMMER STUDY TOUR PROGRAM

Thursday, July 25, 1973

12:00 P.M. - Fruit Acres Orchard, LaCrescent, Minnesota. Assemble on the lawn for brief commentary of different plantings. Mr. Gordon Yates, Orchard Manager and Operator, will be in charge.

1:00 P.M. - Move into orchard on open, flat wagons. Mr. Yates was the first to extensively use dwarfing rootstocks for commercial production in Minnesota.

3:00 P.M. - Move to neighboring orchards in the same area. These are orchards located high above the Mississippi, and are subject to most of the problems, such as winter injury and fire blight.

5:00 P.M. - Conclude orchard tours in LaCrescent area.

Dinner on your own. There are several famous restaurants located in this tourist mecca of Minnesota and LaCross, Wisconsin.

8:30 P.M. - Meet in one of the conference rooms of Holiday Inn at LaCross, Wisconsin (across the river from LaCrescent). Informal discussion of cultural and marketing problems, and trends in this unusual apple producing area.

Friday, July 27, 1973

10:30 A.M. - Assemble at the William Meyers Orchard at Gays Mills, Wisconsin, about 60 miles from LaCrescent. This area, due to its elevation, has been known for its apple farming community for some time. It comprises several industrious growers having some unusual problems due to soil structure. Some of the rootstocks apparently are not performing as well here.

Professor George Kingbiel, University of Wisconsin, and County Agricultural Agents in this area, will be on hand to explain the different plantings during the day.

12:00 P.M. - A box lunch is planned.

1:30 P.M. - Orchard tours to continue in the Gays Mills area.

Families are welcome. Camping facilities are available, including the Wisconsin Dells.

Other fruit areas not on the scheduled tour are: Albert Ten Eyck, Broadhead, Wisconsin; Bill Lewis, Richland Center, Wisconsin; and Growers at Oshkosh, Wisconsin. You may want to visit these fruit areas enroute to/or from the meetings.

STUDY ORCHARDS OF EUROPE

Countries: Holland, Belgium and France

Dates: June 25 to July 9, 1973 - 2 full weeks

Cost: From Detroit (travel, lodging, meals, etc.) \$938.00. From New York less (Detroit/New York/Detroit).

Day-by-day schedule

Monday, June 25 - Depart from Detroit 5:40 P.M. or depart from Kennedy 8:30 P.M.

Tuesday, June 26 - Arrive in Paris 8:30 A.M. Rest of day in Paris.

Wednesday, June 27 - Enroute (bus) to Angers Fruit Research Station.

Thursday, June 28 - Day at Angers Station looking at apple and pear research and orchards.

Friday, June 29 - Enroute to Bordeaux fruit area, where apple and pear growing of France is expanding.

Saturday, June 30 - Visit orchards and fruit handling at St. Macaire, Marmande, Montauban and Toulouse areas.

Sunday, July 1 - Continue visits in and around Toulouse.

Monday, July 2 - Flight Toulouse/Paris/Brussels.

Tuesday, July 3 - Visits (bus) to Pamel and St. Truiden, Fruit Research Stations, Belgium.

Wednesday, July 4 - Move to fruit areas of Holland, Ullestraten, Horst, and Wageningen.

Thursday, July 5 - Fruit areas of N.E. Polder, with stops at Kraggenburg, Marknesse and Dronten.

Friday, July 6 - Leave Amsterdam for S.W. Polder, with visits at Numensdorp fruit area and proceed to Bergen Op Zoom.

Saturday, July 7 - Visit Wilhelminadorp Fruit Tree Research Station with stops at Colijnsplast and Zierzee enroute to Amsterdam.

Sunday, July 8 - Conclude visits by seeing Amsterdam and final Dutch Grandious Dinner.

Monday, July 9 - Shopping in the morning. Depart for U.S.A. at 4:45 P.M.

Arrive Kennedy 7:55 P.M.

Arrive Detroit 8:30 P.M.

LAST CALL - Reservation and \$100 deposit - June 1.

Please call: Area code 517 351-6010 and ask for Miss Ann Allen, College Travel.

FUTURE MEETINGS

June 24 - 27, 1973 - IIIrd Annual Meeting of the International Apple Institute. Park Place Motor Inn, Traverse City, Michigan. For registration contact: 1A1 - 2430 Perm. Ave., Washington D.C. 20037

June 25 - July 9 - European Orchard Study Tour.

July 26 - 27, 1973 - Annual Orchard Study Tour. Dwarf Fruit Tree Association, LaCrescent, Minnesota and Gays Mills, Wisconsin. For more information contact: Robert F. Carlson, 303 Horticulture Building, Michigan State University, East Lansing, Michigan 48823.

December 3 - 6, 1973 - Annual Meeting of the Michigan Horticulture Society, Pantlind Hotel, Grand Rapids, Michigan. For more information contact: Jerome Hull, 302 Horticulture Building, Michigan State University, East Lansing, Michigan 48823.

March 13 - 15, 1974 - Seventeenth Annual Conference of the Dwarf Fruit Tree Association, Pantlind Hotel, Grand Rapids, Michigan. For more information contact: Robert F. Carlson, 303 Horticulture, Michigan State University, East Lansing, Michigan 48823.

Department of
Horticulture

MICHIGAN
STATE
UNIVERSITY

COMPACT FRUIT TREE

DWARF FRUIT TREE ASSOCIATION

Vol. 6, No. 4, March 1973

Rootstock Behavior

Spur Types

Induced Dwarfing

Cultural Practices

Edited by R. F. Carlson

Sixteenth Annual Conference
Dwarf Fruit Tree Association
March 21-23, 1973
Pantlind Hotel, Grand Rapids, Michigan

"UPDATE YOUR ORCHARD FOR SURVIVAL"

Wednesday, afternoon, March 21.

2:00 p.m. - Registration (lower lobby) starts for early arrivals.

2:00 - 5:00 p.m. - Co-chairman: MR. FRANK KLACKLE AND MR. GLEN ANTLE.
Informal visits and tasting of various fruits and
fruit products. (Continental room).

6:00 p.m. - Dinner on your own - Several fine restaurants in the hotel and
in the City of Grand Rapids.

8:00 p.m. - Concurrent (split) discussion sessions.

SESSION A - Kent State Room.

Topic: Interstems: Types, materials, handling--and are they
practical?

Discussion leader: DR. ROY ROM, Arkansas, and participants: R. F.
CARLSON, Michigan State University; TOM CHUDELIH,
Canada; PAUL STARK, JR., Missouri; JAMES CUMMINS
and FRED AMBERG, New York and others.

Recorder: MR. JORDON TATTER, Michigan

SESSION B - Continental Room

Topic: Stone Fruit Rootstocks: Their hardiness, dwarfing, tree den-
sities, training and culture.

Discussion leader: DR. RICHARD HAYDEN, Indiana and participants:
MR. JAMES LINCOLN, Michigan, MR. WALLACE HEUSER,
Michigan, MR. KEN MC DONALD, W. Va., MR. JAMES
BREINLING, Michigan and others.

Recorder: DR. ROBERT ANDERSEN, Michigan

9:15 p.m. - SESSION C - Kent State Room

Topics: Combined review of Session A & B.

Discussion leaders: JORDAN TATTER and ROBERT ANDERSON. These two men will informally summarize highpoints of Sessions A & B and lead any further discussions.

10:00 p.m. - Adjourn

Thursday morning, March 22 - Ballroom, Pantlind Hotel.

8:00 a.m. - Registration in the lower lobby.

9:00 a.m. - Opening session - Chairman: MR. KENNETH MC DONALD, President DFTA - Welcome!

9:10 a.m. - DR. MARK BRENNER, University of Minnesota, Minnesota - "New and promising chemicals for shoot and sucker control."

9:30 a.m. - DR. S. J. "BOB" WERTHEIM, Holland - "A review of fruit growing in the Netherlands."

10:25 a.m. - Short break

10:30 a.m. - Chairman: DR. A. L. KENWORTHY, Michigan

DR. ROY SIMONS - "Ground cover mulches and their influence on growth and fruiting."

11:00 a.m. - MR. PAUL STARK, JR. - "A view of Mexico's expanding fruit industry."

11:30 a.m. - MR. IVAN STEIN - "A 12-minute slide/tape presenting accomplishments of the Michigan Apple Committee Program."

11:45 a.m. - Questions on morning program at this time.

12:00 - Lunch on your own. Several dining areas in the hotel.

Thursday afternoon - Ballroom

1:00 p.m. - Sessions Chairman: JERRY SIETSEMA, Michigan

MR. ALBERT TEN EYCK - "Growing and marketing fruit is my business---everyone would like an apple."

1:30 p.m. - DR. JOHN BUKOVAC - "Fruit tree responses to man's treatments."

2:00 p.m. - MR. J. S. "TED" SWALES - "Recent planting trends and tree training practices in British Columbia."

3:00 p.m. - COFFEE BREAK

3:15 p.m. - Session Chairman: JOHN BELL, JR., Illinois

Orchard Experience -- Problems and Change.

Discussion leader: FRANK KLACKLE, Michigan

MR. GORDON YATES - "15 years experience with rootstocks and tree management in Minnesota."

MR. KENNETH BULL - "17 years experience with compact trees and still planting in Michigan."

MR. FRITZ WAFFLER - "My orchard experience with M.26 and other combinations in New York."

DR. DAVID FERREE - "Performance of M.26 and other rootstocks in Ohio."

4:15 p.m. - Question Session.

Moderator: DR. HOWARD "JACK" ROLLINS, Ohio.

Questions placed in the "Question Box" will be answered to the best of our knowledge.

5:00 p.m. - Adjourn to prepare for Banquet.

Thursday Evening

7:00 p.m. - Banquet - Pantlind Ballroom

Moderator: DR. JOHN CAREW, Michigan

Invocation: MR. KENNETH MC DONALD, W. Va.

8:30 p.m. - Presentation of Awards

8:45 p.m. - DR. SYLVAN WITTER, Michigan - "Horticulture in USA and the world and its importance to people."

9:30 p.m. - Adjourn for informal visits and discussion in Kent State room.

Friday morning, March 23 - Ballroom

Chairman: RICHARD MATTERN, Pennsylvania.

8:30 - MR. JOHN LANGE, Wenatchee - "Greetings from Washington and a brief progress review of planting trend."

9:00 a.m. - MR. J. E. "TED" SWALES - "Dense apple plantings--not a guarantee of success!"

10:00 a.m. - DR. S. J. WERTHEIM - "Intensive orchards -- their designs and tree training as practiced in Holland."

10:50 a.m. - Business meeting.

11:00 a.m. - Adjourn for early lunch in order to depart for orchard tour by buses at 12:00 noon. Downstairs cafeteria and other restaurants will be ready to serve at 11:00 a.m.

Friday afternoon - Orchard Tour

Co-Chairman: FRANK KLACKLE and WILLIAM MACLEAN

Bus tickets (\$2.00)/person) available at registration desk. The tour will cover major portions of the fruit ridge with 2 or 3 stops at individual orchards to demonstrate tree management, and one stop at a modern fruit storage. A detailed descriptive outline of this orchard tour will be available at registration.

12:00 noon - Buses will load in front of the Hotel.

4:00 p.m. - Buses will return to Hotel.

Thursday afternoon - LADIES PROGRAM - Saddler Room

2:00 to 4:00 p.m. - Informal round table program.

Chairman: MARY MC DONALD, West Virginia

Program: A visit with ANTONIA KLEKOKA - Handwriting Analyst. Antonia Klekoda has been personally endorsed by Jean Dixon and Ann Landers for her analyses of their handwriting. She has been published nationally on the subject of Graphology innumerable times. Her testimony was held in court for forgery. She is endorsed by many business executives.

Antonia is called upon as a personnel consultant to business, as a lecturer, as an advisor on a personal basis; as a director of seminars; as an entertainer in qualified and reputable surroundings; and as a national correspondent. Her articles have appeared in publications selling one million copies weekly.

CONFERENCE NOTES

Projection (2 x 2 slides) equipment will be available. Persons having slides of any problem or good performance on a variety, rootstock or culture; bring them for showing during the informal sessions on Wednesday evening.

All scheduled speaker programs will start on time and each speaker will be held to his allotted time. This is a fair request, benefiting all concerned.

Several airlines are available to Grand Rapids, Michigan.

Many people participating in the program are doing so on their own time and expense. A sincere thanks is due to these people and to all participants.

Conference registration information:

Registration	\$1.00
Annual dues	\$3.00
Banquet	\$5.00
Bus ticket	\$2.00

Advance registration cards are enclosed. Please fill in and return. Send no money--pay when you register.

THE IMPORTANCE OF CORRECT TREE PLANTING

Although tree planting is becoming mechanized, some added hand-work aids in getting the trees off to a good start.

The auger makes a satisfactory hole and is a work saver. However, if the soil has some clay and is wet, a cylinder wall is formed. Break this wall by making a few jabs with a shovel around the hole edges.

Setting the tree - First examine the hole; if it is too deep, fill it in with good top soil. What is the correct depth to plant? How deep to set a tree depends on soil type and graft union of the tree.

If the soil is heavy and if a clay subsoil is present, the tree should be set shallow in order not to suffocate the roots. On the other hand, if the soil is light with a porous sandy subsoil, the tree should be set deeper, but yet with the graft union, one or 2-inches above the ground.

Soil fill - After tree depth has been decided, select the best friable soil for covering the well spread tree roots. It is easy to suffocate tree roots and kill the tree by tamping clay soil into the hole. If the soil is high in clay content, it may not be the right place for fruit trees.

Depth of graft union - The graft union should not be buried, but rather at the ground line. If covered with soil the tree will "scion root" in a few years and lose its dwarfing effect. However, in heavy soil types, it is better to have the graft union 2 to 4 inches above ground than to suffocate the root system by too deep planting.

Fall care of newly planted trees - After one seasons growth and settling of the tree, level the soil, and in some cases, fill up to the graft union with light soil type. Then place a few shovels of sand or gravel around and at the base of the tree trunk. This sand will filter downward and will slabalize the tree and avoid an open cone-shaped area around the trunk base. This also will make it easy to set the tree guard and reduce grass growth next to the trunk.

R. F. Carlson

ORCHARD STUDY TOURS

July/August 1973 - A summer orchard study tour is being planned. However, as of now, the place, dates and time have not been formulated. Detailed plans will be announced at the March meeting and in the next newsletter.

June 23 - July 13, 1973 - Last call to register for the orchard study tour to France Belgium, Holland and England. See January newsletter.

REUNION OF MEMBERS OF EUROPEAN STUDY GROUPS

March 21, 1973. During the 16th Annual Conference DFTA. Dinner meeting: 6:00 p.m. - It has been suggested that members meet in the Pantlind Hotel Lobby and proceed from there to one of the restaurants where tables can be set up for a dinner reunion. Please check with Mr. and Mrs. Arthur and Ruth Dowd, of Hartford, who will be in charge.

CORRECT USE OF CLOTHES PINS IN TRAINING 1 TO 3 YEAR OLD TREES.

Clothes pins are used in 3 ways: 1.) To establish a wide branch crotch angle, 2.) To bend young flexible branches to one side or downward, and 3.) To pin young branches to the wire where a trellise is used.

When clothes pins are used to spread a young branch, clip the pin to the trunk (central leader) about 1/2-inch above the branch and then push the branch into the forked end of the pin. Practice makes it perfect.

When used to flex branches in a different direction, cross 2 branches and clip the pin to that point. This is a very effective tool in training spur type delicious. Someday, someone will make a gadget which is an improvement over the clothes pin. R. F. Carlson

IMPORTANT ITEMS

1. Stuff the question box (at registration desk) with question which will help you and others at the meeting.
2. Michigan growers are reminded to vote on the referendum concerning the Michigan Apple Committee.
3. If anyone has a new fruit variety or a new fruit processed product, bring this for viewing and sampling at the Wednesday (2:00 - 5:00 p.m.) informal session in the Continental room.
4. Those on the program presenting short or long reports, please leave a copy with your secretary for inclusion in proceedings of the conference.
5. Our out-of-country speakers are: Dr. S. J. Wertheim, Wilhelminadorp, Holland and Mr. J. E. Swales, Penticton, British Columbia, Canada.