Minnesota Nurserymen's newsletter

Prepared by
UNIVERSITY OF MINNESOTA
Institute of Agriculture
• Agricultural Extension Service
• Horticulture Department
In Cooperation with
• Minnesota Nurserymen's Association
• Minnesota State Horticultural Society

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MINNESOTA NURSERYMEN'S CONVENTION
Thirty-first Annual Meeting
Lowry Hotel
St. Paul, Minn.
Dec. 3 - 4 - 5, 1956

Monday, December 3, 1956

EDUCATIONAL PROGRAM
Sponsored jointly by
Minnesota State Nurserymen's Association
Department of Horticulture, University of Minnesota
Division of Plant Industry, Minnesota Department of Agriculture

Morning Session

8:30 A. M. Registration, Complimentary Coffee

9:15 A. M New University of Minnesota Chrysanthemums. - R. E. Widmer

9:30 A. M. Ornamental Research. - R. J. Stadtherr

10:00 A. M. Introduction of New Varieties. - L. C. Snyder

10:30 A. M. Weed Control in the Nursery Panel
Chairman - R. J. Stadtherr
Members -
Vincent Bailey — Joe Stoeckler
Ken Blanchard — Ken Torgerson

12:00 A. M. Luncheon

Afternoon Session

1:00 P. M. New Developments in Regulatory Activities. - T. L. Aamodt

1:25 P. M. Observations from the Section of Nursery Inspection. - Walter P. Trampe

1:45 P. M. Woody Plants Testing. - L. C. Snyder

2:15 P. M. Tree Diseases. - David French

2:45 P. M. Plant Disease Control Panel
Chairman - T. H. King
Members - A. N. Wilcox
W. O. Bulger — Herbert Johnson

Tuesday, December 4, 1956

9:30 A. M. Social Period - Complimentary Coffee

10:00 A. M. President's Report

10:15 A. M. Treasurer's Report

10:20 A. M. Appointment of Committees

10:30 A. M. The Morton Arboretum, It's Purposes and Objectives (illustrated) by Roy Nordine, Morton Arboretum, Lisle, Illinois

11:30 A. M. Film - "Fruits for the North" Produced by University of Minnesota Horticulture Department

12:00 Noon Luncheon
Address by Don Grussing, Director of Merchandising (Minneapolis-Moline)
"What Makes America Great"

Afternoon Session

1:30 P. M. "Merchandising Advantages of Plantainer Grown Ornamentals" by Jack D. Hill, D. Hill D. Hill Nursery Company, Dundee, Illinois

2:30 P. M. "The Current Plans for Roadside Development and Highway Beautification" by Harold Olson, Minnesota State Highway Department

6:30 P. M. Banquet and Entertainment
Featured Speaker: World Affairs -
Mr. Carl Rowan

Wednesday, December 5, 1956

9:30 A. M. Social Period, Complimentary Coffee

10:00 A. M. Committee Reports

11:00 A. M. Address - "The World We Live In" by Reverend Ruben K. Youngdahl

12:00 Noon AAN Luncheon

Afternoon Session

1:00 P. M. Washington Report

2:30 P. M. The Arboretum Fund. -- R. Duford

2:45 P. M. Election of Officers

3:00 P. M. Election of Delegates to AAN Convention

Adjourument

Program Committee:
Lawrence Bachman — Joe Whelan
Russ Zakariasen — C. A. Mathes

TIMELY TIPS

Walter P. Trampe
Supervisor, Nursery Inspection
Minnesota Dept. of Agriculture

PREDATORS

Nursery stock, especially potted material, must be protected from predators during the dormant season.

Rabbits

1. A chicken netting two feet high will do a creditable job of keeping rabbits out of the pot storage area.
2. Live traps will help to eliminate the pests.
3. In rural areas, a neighborhood youngster will usually take care of the rabbits under a little bounty arrangement. Hunting permits can usually be arranged with the local game warden.
4. Repellents are effective as long as the rabbits are not desperate for food.

Mice

1. Potted stock should be placed on a weed and grass free area.
2. Bait stations should be maintained throughout the winter.
   (a) Hollow tiles, containing a rodenticide, under a forkful of hay are effective.
3. Various insecticides have been used for the control of mice. A 50% W. P. of DDT has been used by scattering it in the runways, making it readily accessible to the pests. Later they will attempt to lick the powder off of their paws. In doing this, they will take in enough DDT to kill them. They appear to be quite susceptible to the effects of this material. Other insecticides, such as dieldrin and endrin, have been used from time to time with varying results. Endrin is a very toxic material. The dangers involved in using it must be borne in mind when its use is considered. As a rule, all of these insecticides are effective when applied in such a manner that the mice have an ample opportunity of coming in contact with them. There are a number of conditions that may arise which will render the application of insecticides less effective. For instance, a sprayed area may be covered with snow. Consequently, the opportunity for contact with the insecticides is diminished and the results likewise become less effective.

WINTER PROTECTION

Covering before the soil temperature reaches the freezing point encourages the development of fungus diseases. When fall weather is mild, it might be disastrous to cover small fruits in the nursery. Rose bushes are very susceptible to cane diseases. Innoculum is generally present in some degree. Application of cover while soil temperatures are high encourages the growth of fungi. It is advisable to delay covering until the ground is beginning to freeze.

DORMANT INSECTICIDE APPLICATION

Deciduous nursery stock should not be treated with dormant applications prior to the winter months. Many of the materials used for the control of scale insects and other pests may damage this type of stock, mainly through the leaf absoission layers. It would be advisable to delay these treatments until spring.

CYCLAMEN MITES

In experiments conducted by the Department of Entomology and Economic Zoology, Drs. Hodson and Cutkomp found that endrin was effective when used against cyclamen mites on strawberry plants as late as the latter part of October. Spring application should occur before the fruit begins to form. Kelthane, a safer material to use than endrin, should be available commercially next spring.

STORAGE

High humidity, maintained around the roots of the plants in storage, is essential. This may be accomplished by the latest method of keeping all the air in the storage room humid through use of an automatic humidifier. Similar results can be obtained by packing the roots in a moisture-holding medium such as shingletow. If possible, the application of free water sprayed over the stock in storage should be avoided. Fungus diseases may be spread in this manner. Areas of condensation should be eliminated from storage for the same reason. Condensation occurs for various reasons. Very often circulation of the air in storage is reduced to a point where such a condition occurs. Avoid filling the storage to such an extent that you create a series of air traps. Some allowance should be made to provide room for the air to move. Moist, warm air striking a cold surface creates condensation. The insulation of areas where condensation has appeared in former years is a reasonable approach to the problem.

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PHYSIOLOGICAL DISORDERS IN TREES*

D. P. Duncan, Associate Professor
Department of Forestry

For the purposes of this paper, physiological disorders of trees may be defined as those in which the tree's functions are dislocated by some unfavorable factor of the environment not of a biotic nature. We know that trees, like other plants, require oxygen in the process of respiration. The supply may be limited, particularly in the root zone, to the extent that it becomes detrimental. In the processes of photosynthesis and food metabolism light and water are essential. If these become deficient, death may result. Water is also essential in transpiration which provides nutrients in solution, an absorbing surface for CO_2 and a cooling function. Deficiencies in any one of these areas, as well as in many others, and the poisoning effects of both artificial and natural agents may cause physiological disorders.

Diagnosis of physiological disorders is often difficult. However, since diagnosis is necessary before a reliable cure can be recommended, it becomes a very important aspect of control. Frequently, in counection with physiological problems, diagnosis must be arrived at by indirect means using circumstantial evidence available at the site of injury. One

* Presented at Tree Protection Short Course, University of Minnesota, March 6 and 7, 1956.

must become something of a Sherlock Holmes in discovering all the evidence which may lead to conviction.

Physiological disorders may be avoided in considerable degree by careful selection of trees to fit the situation in which they are to be grown. Not only should the species be carefully selected but the seed source within the species should be chosen to fit the conditions. There are wide physiological variations within a single species, particularly among trees having a wide natural range over which they occur. For example, American elm or cottonwood of Minnesota origin are probably better adapted to Minnesota conditions than trees of the same species derived from stock originating in Mississippi or Tennessee.

Disorders arising from unfavorable water or temperature relations.

Drought injury is frequent immediately following planting and before the rootlets become established. It may also result from an unfavorable top-root ratio following planting in which some of the roots have been cut off but the top has not been pruned back. Among older trees, severe drought of long duration may cause mortality. This is particularly common among ornamentals which, even though native, may not ordinarily occur in the type of environment in which they have been planted. Careful initial selection of trees to be planted on droughty sites can obviate later difficulty.

Drought symptoms include the dying of foliage from the top down and from the outside in. Early leaf fall is a common symptom among broadleaved trees and is, in effect, a protective mechanism reducing the transpiring surface. Initial symptoms may show only dying of the leaves at the edge and between the veins but, later, the whole leaf may die.

SUGGESTED REFERENCES

Fenska, Richard R. 1954. The New Tree Experts Manual, De La Mare Co., New York.

Pirone, P. P. 1941. Maintenance of Shade and Ornamental Trees. Oxford University Press, New York.

Baxter, D. V. 1952. Pathology in Forest Practice, John Wiley, New York.
Chapter on Shade and Ornamental Trees particularly.

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COLMAN AWARD

Congratulations to Dr. H. B. Tukey, head of horticulture at Michigan State University, on obtaining the 1956 Norman Jay Colman award. This award recognizes men who have contributed much to the nursery industry through research. Dr. Tukey has done outstanding work in research, extension and teaching. He has specialized in pomology, plant propagation, rootstocks, developmental morphology, liquid feeding and embryo culture - to mention only a few of his many interests.

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DUTCH ELM DISEASE*

E. H. Wollerman
Division of Forest Insect Research
Central States Forest Experiment Station
U. S. Forest Service, Columbus, Ohio

The Dutch elm disease has not been found in Minnesota or Wisconsin, so far as we know. But, because of the westward spread of the disease across the United States and parts of Canada, it is well to consider the possibility that the disease may invade these states. Two conditions have set the stage for the Dutch elm disease epidemic. First, a variety of native species of elm, all snsceptible to the disease, are widely distributed over the eastern United States. The American elm, in particular, is extensively planted in cities. Second, the native elm bark beetle (Hylurgopinus rufipes) has always been present as a pest of elms. The smaller European elm bark beetle (Scolytus multistriatus) was found near Boston as early as 1905. Both of these beetles attacked elms, but usually did not kill the trees unless they had been previously weakened by drouth or other adverse conditions.

Now let us look briefly at the history of Dutch elm disease. In 1918, Dutch plant pathologists found elms dying from a previously unknown fungus disease. A suggestion was made that the fungus originated in Asia, since the Asiatic elms are highly resistant to it. The fungus could have been carried in elm logs or elm wood crates sent to the port of Rotterdam.

Plant pathologists in the United States, including Dr. Curtis May of the U. S. Department of Agriculture, became interested in the potential threat of this disease to our elms. In 1930 Dr. May, who had visited Holland and studied the disease, diagnosed the first case of Dutch elm disease in this country in a wilting elm tree near Cleveland, Ohio. A search for other diseased elms revealed some near several eastern seaports and also inland around New York City. A program of eradication by sanitation was then begun by state and federal agencies. Although this resulted in greatly retarding the rate of spread of the disease in local areas, the general infestation was too widespread to be effectively controlled. Isolated infestations were found in Cincinnati and Indianapolis in 1937. In 1940 the eradication program was halted.

In 1944, an apparently independent infestation from Europe was found in Canada along the St. Lawrence River. Detroit, Michigan and also the states of Illinois and Colorado reported infestations in 1950. St. Louis reported the disease to be present in 1952. In 1955 Illinois reported an increase to an estimated 5,000 diseased elms distributed over most of the State.

I hope you have not already resigned yourselves to spray programs and the wholesale removal of elms. Let us, first, consider more of the biological picture and then look at data from tests of sanitation and spraying of elms over areas covering entire towns.

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NEW GROWTH STIMULANT

Three U. S. D. A. physiologists, P. C. Marth, W. V. Audia and J. W. Mitchell, recently reported increased growth response of plants when treated with gibberellic acid. This new and little-known, plant-regulating substance is produced by a fungus. Extraction of the plant-regulator is similar to the process used in the production of antibiotics.

Gibberellic acid can be applied as a spray or in a lanolin paste to non-dormant plants or plant parts. The response is, generally, a relatively rapid rate of stem elongation. Some plants produced doubled or tripled plant height when treated. Flowering was retarded in some plants; whereas, in others it was hastened. Root development was, in general, reduced if there was rapid stem elongation.

Research using gibberellic acid is still in its preliminary stages. No practical use has been recommended on plants. The material is quite scarce and methods for its production in large amounts have not been developed. Most of the available supply is being used by research workers. The interest in this new plant regulator is tremendous.

This growth-regulator could prove to be a boon to the nursery industry. Dwarfs, shade trees and other slow-growing plants might be produced much more economically in the future.

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ROOTING OF CUTTINGS IN AIR-COOLED MIST-CHAMBER

D. V. Sweet and R. F. Carlson
Quarterly Bull. Mich. Sta. Univ. 38 (2): 258-267
Nov. 1955

Propagation by cuttings outdoors under mist often has proved unsatisfactory because of wind currents, which caused drying resulting in leaf burning and defoliation. With plastic side covers temperatures increased, so that loss of cuttings could be attributed to excessive temperatures. Thus, a plastic chamber in the greenhouse, using polyethylene film leaving the ends open, was equipped with a 10 inch electric exhaust fan to reduce the temperature.

In this chamber, the temperature of the leaves was at 83°F when outside temperature exceeded 100°F. Faster and better rooting occurred with Mahaleb cherry cuttings, when compared with cuttings from the same clones which were rooted under mist without air circulation. With East Malling VII (understock) apple cuttings intermediate cuttings rooted better than terminals. Survival of the transplanted plants, when removed from the mist just after rooting, was from 90 to 100% with all plants that were tested. Holding the cuttings for ten or more days, after they had rooted under mist, greatly reduced the survival percentages. Diseases were not a problem.

R. J. Stadtherr

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MERRY CHRISTMAS TO ALL!

THE RED MAPLE -- A NEGLECTED TREE

H. Teuscher
Am. Nurs. 104 (9): 9 Nov. 1, 1956

Reasons why this, one of our most beautiful native trees, is rarely planted are: belief from its common name "swamp maple" that it grows only in wet places; its soil requirements are a sandy soil somewhat acid with plenty of humus; it varies in fall coloring; its manner of seed ripening makes it difficult to obtain enough good seeds.

Heavy soil conditions can be changed by the addition of sand or soil conditioners. The use of minor elements and acid fertilizer helps on alkaline soils. An easier method for overcoming unfavorable soil conditions is by budding on Acer saccharinum. Budding was recommended in midsummer. Strong buds were placed rather low on thin stock. Soft maple does well on many soil types.

Three strains of red maple based on fall coloring were listed: one always colors indifferently, another depends on climate, the third always colors without regard to climatic or soil conditions. An example of one which always colors is the European street tree, Acer rubrum schlesingeri.

The author suggests selecting plants which have red colored fruits which color well every fall.

R. J. Stadtherr

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Editors Comments
R. J. Stadtherr

Plant Propagators To Meet!

Another excellent program has been planned for the Sixth Annual Meeting of the Plant Propagators Society at Wade Park Manor, Cleveland, Ohio November 29, 30 and December 1.

Highlights of the program will be panel discussions on the influence of light on plant propagation and the propagation of hybrid lilacs. Other interesting subjects are: "Gathering, Stratification and Sowing of Seeds", "Mass Production of Pines, Spruces, Abies, etc.", "Successful Establishment of Rooted Cuttings, Seedlings, etc., in the Field", "Micro-organisms in the Soil and Their Action on Plants", and "Own-root Versus Grafted Plants".

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