

Minnesota Nurserymen's newsletter

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NATIONAL NURSERYMEN'S CONVENTION

Richard Stadtherr, Extension Horticulturist

The 1954 Convention of the American Association of Nurserymen will be held July 19 through July 22 at the Radisson Hotel in downtown Minneapolis. The Monday, July 19, meetings will be held in the Gold Room and will be general organizational business sessions.

Every nurseryman should be interested in Education Day which is planned for Tuesday. The morning sessions will open with a discussion on the use of polyethylene in the nursery by Drs. E.S. Haber and J.P. Mahlstede of Iowa State College. Frank Conover, Sales Manager, Ford Motor Company, Birmingham, Michigan will give an address "They Will Buy." This will help you sell your stock.

The afternoon sessions will be devoted to round table discussions with several experts moderating each individual topic. You will learn more about polyethylene and nurserymen who have used it. Dick Fillmore, propagator at Lake Nurseries, Shenandoah Iowa and Jim Wells, propagator at Hills, Dundee, Illinois, will lead the discussions on current problems and ideas on plant propagation. I'm sure you all have heard about mist propagation and Mr. Wells is an authority on it.

We have had many questions on sales yard operations and construction, container grown stock and landscape problems that personally we would like to be a dozen places at one time so we could get all the information from the experts who will moderate the individual sessions.

The NLNA will have its business meeting at 4 o'clock p.m. on Tuesday.

Wednesday morning will be devoted to fair trade practices. In the afternoon various tours are planned.

On Thursday final arrangements will be made to complete the business sessions. By-law changes, action on the budget, future convention sites and election of officers will conclude activities.

I haven't mentioned the social functions such as banquets, tours and special shows which have been scheduled for the ladies and junior nurserymen but let's say you'll be busy every minute and entertained royally the whole time you're here.

Dad, there will be plenty of entertainment for you, too!

DO MINNESOTA NURSERIES REQUIRE IRRIGATION?

E. R. Alfred

Associate Professor of Agricultural Engineering

Should I plan to irrigate this coming year? This question is being asked by an increasing number of Minnesota nurserymen and farmers each season. The answer, of course, largely depends on the answer to another, equally difficult question--What will the Minnesota weather be this coming year? If we knew the answer to the latter question, farming plans and operations could be greatly simplified.

Unfortunately, there is no way for us to predict the weather for an approaching season. Rainfall, especially, varies greatly from year to year. Neither do these variations seem to follow any definite cycles or patterns.

Lack of moisture in any one year seldom carries over to affect another crop year in Minnesota. Such is not the case where moisture must be stored in the soil from one year to the next (as done by summer fallowing in the areas farther west). The fact that last season was wet or dry is of no particular value for predicting weather conditions for the coming year.

Past records give us a general idea of what can be expected in the over-all weather picture. Average conditions, based on previous observations, can be computed. But averages, too, can be misleading. Rainfall for next season, for example, has a 50 per cent chance of being either below or above the long time average. The chances of it being very much below or above considerably less.

The closest approach we can make in forecasting next season's weather is by figuring out the probability of a given weather condition actually occurring.

Soil Moisture Supply

The amount of moisture in your soil on a given day next summer will depend on several factors. First of all, it will be different for each crop you grow. Because of a wide variation in growing characteristics and dates of maturity, all crops do not extract water from the soil at the same rate.

The available soil moisture on a particular day will also depend on the type of soil. Each foot of a sandy loam soil can hold about 1 inch of water for plants. A silty clay soil will hold 2½ to 3 inches per foot. Obviously the heavier soil will be able to retain more of the early spring rains until your crop needs the moisture.

Climatic factors are also important. We are not only interested in the amount of rainfall but also when it occurs. Will the rain be evenly distributed throughout the growing season? Daily temperatures, humidity, daylight hours, and wind velocity and direction are also important.

Possible Benefits

The primary purpose of irrigation in most areas is to obtain insurance against loss from drouth. In the heavier soil areas of Minnesota such drouth periods are not usually severe enough to cause a significant loss. Most farms located in such areas have never had a complete crop failure. Crops being grown on farms located in the light textured soils, on the other hand, seldom escape at least partial damage due to lack of moisture.

Benefits other than drouth insurance must also be considered. In certain years some of these may become extremely important. Immediately prior to the 1948 growing season, for example, some Minnesota farmers installed irrigation systems as a means of increasing their production. This was accomplished by thicker planting and heavy applications of commercial fertilizers.

These farmers were facing no greater drouth risks than they had faced in previous seasons. A combination of relatively high prices and stable market conditions made greater yields desirable at that particular time. Most of these farmers recovered a large part of their investment at the end of the first year. Weather-wise, 1948 proved to be quite an average season—certainly not one of extreme drouth.

Many berrygrowers receive benefits from their irrigation systems through frost protection at blossom time. Over a span of years, some are of the opinion that these benefits exceed those received from drouth protection later in the season.

Also, various Minnesota-grown vegetables and fruits are recognized as being of a definitely higher quality than those shipped in from earlier southern markets. Consequently, a local truck farmer or berry grower may realize his greatest irrigation return through earlier maturity and improved quality of his produce.

The benefits you can expect from irrigation will obviously depend not only on the immediate market conditions but also on your type of farming.

What Do Drouth Risks Tell Us?

It is evident that under certain farming conditions, insurance against drouth may not be the major reason for installing an irrigation system. In spite of this, studies dealing with drouth risks generally furnish the best available data for determining the economic feasibility of irrigation.

Every farmer, whether he owns an irrigation system or not, is interested in his local drouth risk. Those without irrigation are concerned because it indicates to some extent, the percentage

of years that "good", "average", or "poor" crops can be expected.

Farmers with, or planning to have, irrigation are also interested. It is during those years in which their neighbor's unirrigated lands are producing below average crops that they are in a position to obtain maximum returns from their investment. Obviously soil moisture is very closely related to nearly every type of irrigation benefit.

How Great Are the Local Risks From Drouth?

Recent studies on probable moisture deficiencies for three major crops (alfalfa, corn and small grains) have been made at the Minnesota Agricultural Experiment Station. Such crops were studied because they represented a wide range of seasonal water requirements. Most nursery crops are considered to have moderate to heavy water requirements -- in this case somewhat between those values given for corn and alfalfa, in Table 1. Much of the irrigation water applied to nursery crops is used to assist germination and to prevent crusting of the soil. As a result, lighter but more frequent applications extending throughout the entire growing season are commonly made.

The data shown in table 1 are based on 62 years of Weather Bureau records at Minneapolis and pertain to a sandy loam type of soil. With heavier soils the deficiencies should be less than those indicated. Slightly higher deficiencies will occur on the more sandy soils.

Table 1 indicates that with alfalfa (which is a heavy user) one can expect a yearly moisture deficiency of at least 2 inches, 68 per cent of the time, or about two out of three years. With corn, which is a moderate user of water, one can expect

Table 1. Percentage of Years During Which a Given Water Deficiency Can Be Expected (Based on a 62-year climatological record at Minneapolis with a sandy loam soil)

Probable water deficiency	Per cent of Years		
	Alfalfa	Corn	Small grains
None	16	23	56
1" or more	80	71	32
2" or more	68	55	20
4" or more	42	26	8
6" or more	25	8	2
8" or more	13	2
10" or more	6
12" or more	3

a similar deficiency about one out of every two years. Only in one out of every five years is a 2 inch deficiency likely to occur with small grains. Largely because of their early maturity, small grains are found to be light users of water. Probabilities of having other deficiencies may also be determined from the table.

A thick stand of any crop will consume more water than will one which is sparse. The deficiency probability values, given in table 1 pertains to the Twin City area, information of a general nature can be applied to other sections. Due to various climatic changes, the probable need for irrigation would increase slightly in the western part of the state and decrease in the northern and southeastern counties.

Irrigation Costs

The yearly cost of owning and operating an irrigation system will vary between farms. You may be able to irrigate your farm for \$20 an acre per year and your next door neighbor may find it is costing him twice that amount. Because of numerous variables and conditions entering into each installation, your local irrigation equipment dealer is the logical person to make a cost estimate for you.

Insect Problems

W.P. Trampe
Supervisor of Nursery Inspection

Scale Insects Cottony maple scale, *Pulvinaria vitis*, and *Lecanium corni*, which is often referred to as brown elm scale or European fruit lecanium, are becoming quite common on deciduous trees and shrubs throughout the State. *Lecanium fletcheri*, a pest on yews and arborvitae, is also quite common. The crawler stage treatment should be applied for the control of these insects as soon after they are hatched as possible. According to the present appearance of the insects which are in the egg stage at the time that this article is written, will begin hatching about July 1. Applications of insecticides for control would probably be most effective if they were applied on or about July 10. This date will vary with weather conditions occurring in the interim.

If large scale treatments are planned, it is suggested that you contact this office for definite information in regard to the development of the insects. Dr. L.K. Cutkomp, Department of Entomology, University of Minnesota, has done considerable work on this problem and recommends 2½ pints of 50% emulsifiable concentrate of malathion per 100 gallons of water for control of the "crawlers". This is equivalent to 2 teaspoons of the same material in 1 gallon of water.

Strawberry "Nubbins" A number of strawberry fields were examined by the writer this spring in order to determine the possible cause of "nubbins" in strawberries. This can be described as a condition occurring when only part of the berry develops properly and the remaining portion is hard and green. The berry is also badly misshapen. Of 7 fields examined, 6 were heavily infested with thrips, probably *Taeniothrips simplex*. The field which was examined and found to be free of thrips had been treated with an insecticide at about the time that ¼ of the plants were in bloom. Thrips have been reported working in strawberry blossoms

previously, but from what the writer has been able to learn, only as a minor pest. The nymphal stages of this insect were found in the majority of the blooms examined and they were often present in numbers. Thrips have a rasping and sucking action in their attack on plant tissues. This action appeared to be directed around the base of the pistil on the developing receptacle of the fruit. It is possible that such injury could so damage the developing fruit to cause the effect of "nubbins".

Relatively few plant bugs of the genus *Lygus*, were noted during the examinations. Insects identified by Dr. E. F. Cooke, Taxonomist, Department of Entomology, University of Minnesota, as *Triphleps insidiosus* and apparently predaceous on the thrips, were found present in numbers in three of the thrips - infested fields. June-bearing varieties predominated in the fields examined. "Nubbins" apparently develop from several causes. It is quite probable that thrips injury is responsible for an undetermined amount of this damage.

The European Chafer An extensive trapping expedition is being set up by the office of the State Entomologist in order to detect the European chafer, *Amphimallon majalis*, in case it is present in the State. Such a program was carried out last year with the results proving to be negative. Because of the potential threat of infestation occurring within the State, the program will be continued again this year.

The trapping program is associated with a peculiar characteristic of the adult insect which causes it to ascend into the trees at a certain time each evening during the mating season. This mating season would be expected to begin in Minnesota during the latter part of June.

AMUR LILAC

Richard Stadtherr. Extension Horticulturist

There is a need for small trees in almost every home planting. They are especially appropriate today with the present modern ranch-styled home.

One of the best specimen plants we have observed again this year in the Amur Lilac, also known as the Japanese Tree Lilac or *Syringa amurensis japonica*.

Grown to a single trunk, this tree-like tall shrub gives us a beautiful small tree. Grown as a shrub with several stems it is excellent as a tall shrub in the background of the shrubbery border. This plant frequently grows 25 to 30 feet tall forming a well-branched rounded shape.

The pyramidal clusters of feathery, cream plum-like flowers appear generally during later June. Large, thick leaves add beauty to this tree during the summer and fall months. A vigorous habit of growth makes it more valuable in the landscape picture. Shiny cherry-like bark with prominent white lenticels make it look much like Black Cherry

during the winter. The exfoliating bark of the main trunk and older branches reminds one strongly of the cherry. The horizontal branches make one think of the pictures we see of Japanese trees.

Thus we consider this shrub which gives us year-round beauty one of the best trees to beautify our homes and their surroundings.

BOTRYTIS DISEASES OF GLADIOLUS

The Plant Disease Reporter - Supplement 224, May 15, 1954,

Gould, Charles C.

Botrytis, the second most important disease of gladiolus, infects all plant parts. Such diseases as flower blight, leaf spot, neck rot and corn rot are caused by a number of different Botrytis species. The incidence of these diseases are greater during cool temperatures and high humidity.

The basic measures of controlling these diseases are:

1. Planting in a good soil with good air drainage.
2. Roguing of diseased plants and removing old flower spikes.
3. Spraying periodically with nabam, ferbam, or zineb sprays during weather which is favorable for the fungi.
4. Digging as early in as dry weather as possible.
5. Heat-curing promptly at 85 to 95° with a relative humidity of about 80% for seven to ten days, cleaning and returning to the curing chamber for 4 to 7 days more.
6. Storing at 40 to 50° with relative humidity of about 70 to 80%.

R. J. Stadtherr.

WATCH AWARDS TO 4-H WINNERS

State winners in three national 4-H programs recently accepted by the Minnesota Extension Service for 1954 will be awarded 19-jewel wrist watches.

The programs and the donors are: Leadership, Edward Foss Wilson, Chicago; dairy food demonstrations, Carnation company, Los Angeles, California; and beautification of home grounds, Mrs. Charles R. Walgreen, Chicago.

One state winner is named in home ground beautification. In leadership two state winners are selected--the outstanding boy and girl, and in dairy foods three--the highest ranking individual and team demonstrators.

County awards are gold-filled medals of honor. In the home grounds beautification, the number of these medals has been increased from one to four.

From the Federal Extension Service we learn that over 100,000 boys and girls participated in the 4-H Home Beautification Projects in 1953. This indicates the growing interest in improvement of the home grounds.

Nurserymen should encourage and help these youngsters, for this is a means of expanding their markets.

Pie Cherries
Can Be Grown
In Minnesota

Two new hardy varieties of pie cherries recently developed by the University of Minnesota Fruit Breeding Farm make cherry growing practical in Minnesota.

The two new cherry varieties, Northstar and Meteor are the first high quality sour pie cherries hardy enough to be grown successfully in Minnesota, according to Dr. Leon C. Snyder, head of the department of horticulture at the University of Minnesota.

Because the trees are highly ornamental as well as productive, they fit very well into the shrub border. This is particularly true of Northstar, which is a dwarf tree and hence can be used where space is limited.

Northstar is a bright red cherry about three quarters of an inch in diameter which changes at maturity to a dark, glistening mahogany red. The flesh is juicy, tender and meaty and the flavor is pleasantly acid. The stone is small and easily removed. Ripening season is about July 5 to July 10.

Northstar is small but productive and self fertile so cross pollination is not necessary. It is resistant to leaf spot and to brown rot disease.

Fruit of the Meteor cherry is large and a light, bright red. The skin is thin and tender and the flesh is moderately firm and juicy. The flavor is mildly acid. The stone is small and very free.

The Meteor cherry ripens about a week to 10 days later than the Northstar.

A strong vigorous grower, the Meteor cherry tree has an upright, moderately spreading habit. The usually large leaves produce a dense and luxuriant foliage that is highly resistant to leaf spot. Both Meteor and Northstar should start bearing by the third year and should bear annual crops thereafter.

ROSE GROWERS DAY JULY 20

The thirteenth annual Rose Growers' Day will be held on the St. Paul Campus of the University of Minnesota Tuesday, July 20, J. O. Christianson, director of agricultural short courses, has announced.

R. A. Phillips, assistant professor of horticulture at the University, is chairman of the program committee.