

Minnesota Nurserymen's newsletter



Vol. 15, No. 7 and 8.

July and August 1968

REPORT OF 1967-68 WINTER PROTECTION STUDY AT BAILEY'S NURSERY

The following paper reports a joint effort by the Horticultural Science Department and Bailey's Nursery to study the protective effect of plastic sheeting on winter injury of container grown plants and the spring color of evergreens. Dean Evert, doctoral candidate of Dr. C. J. Weiser, conducted the experiments. Nurserymen who are carrying potted stock through the winter may find these results interesting.

The Department of Horticultural Science expresses its gratitude for the cooperation and assistance of Bailey's Nursery in this research project.

Materials and Methods

The plants listed in the outline were covered on November 10, 1967 and uncovered on March 29, 1968. Observations of injury and other factors were made twice: at the time of uncovering and 27 days later on April 25, 1968. The covering treatments were described earlier except that the treatment using the irrigation line as a center support was modified to include seed bed frames alternating on each side of the pipe to support the plastic film. The plastic was originally stapled to the seed bed frames; however, Bailey's found it necessary to nail the plastic to the frame with lath strips.

Results

1. The globe arborvitae, placed upright under different colored plastics which were supported by seed bed frames, all survived with no damage. These plants had good soil moisture and showed better root growth than the checks which were laid down and covered with hay. The plants under black plastic had the characteristic winter color while the plants under clear plastic had a bright green color characteristic of plants actively growing during the spring. The color of plants under white plastic was intermediate between those under black and clear.

2. Globe arborvitae, laid down with a clear plastic covering directly over the plants, had a good green color characteristic of spring, but

some burning was noted on the southwest side of the plot where the plants touched the plastic.

3. Pfitzer Juniper, setting upright and covered with clear plastic, was observed to have good spring color with some burning on the southwest side of the plot. There was some bending of branches due to contact with the plastic. Bent branches had straightened by the time of the final evaluation. The roots of control plants sustained considerable winter damage while the covered plants had actively growing roots with little or no injury. The growth of treated and control plants will be observed this fall to see what effect this root damage may have on subsequent performance.

4. All plant materials under the frame built over the irrigation pipe were found to be in good condition, with good spring color at the time of uncovering on March 29, 1968. The candles on the two species of pine (Austrian and Mugho) were swelling or in bud break. When the plants were re-examined on April 25, 1968 no injury was noted. Many of the plants had reverted to an early spring color; however, Pachistma canbyi was growing with new leaves visible. Pachistma canbyi which was not covered suffered an estimated 30-40 percent loss even though laid down.

At the time of uncovering the plants under the frame, along the irrigation pipe, a wide variation in soil moisture was observed. This variation in dryness appears to be the result of moisture condensing on the plastic, running down the plastic until it reached a slat in a seed bed frame, and dripping back onto the plants; however, if no slats were present the condensation would run to the ground and the pots would dry out. A variation in root growth was correlated with pot moisture with the moist soil producing better root growth. At the time of the final check, root growth on all of the plants covered with plastic was equal to or better than that of the uncovered checks. This difference was particularly evident in Savins Juniper and Pfitzer Juniper.

5. Another covering experiment using an irrigation pipe as the center support was carried out by Bailey's. The plants in this

one day, uncovered in other experiments is particularly following reason provided no slats for covering or for returning the moisture to the pots, (2) at uncovering, the pots were all extremely dry; (3) severe injury was observed on *Globe arborvitae* and on *Pachistima canbyi*.

Conclusions

Because of the difference in injury, it is apparent that even in a non-test winter a plastic covering can be valuable for the following reasons:

1. Better spring color. If the spring color is desirable for sales, the plants could be kept covered until shipping day.
2. Better root growth when the root ball can be kept moist.
3. Less winter injury if the plant has sufficient soil moisture and shade.

Recommendations:

Based on the results of experiments the last 2 years it is recommended that:

1. Only work with clear plastics be continued.
2. Any covering used, provide a means to return the moisture condensing on the plastic to the plants.
3. Work be continued in laying plastic directly over plants that are laid down. This simple covering procedure should be repeated to evaluate the amount of winter burn under more typical winter temperatures and snow cover.
4. Work be expanded to study the influence of plastic on root protection and subsequent growth on the junipers.

A LOOK TOWARD THE FUTURE

Walter Trampe
Division of Plant Industry

The best "salesman" any firm can have going for it is the confidence of the public in the merits of the product offered for sale. The same statement can be made for the nursery business. Nursery industry stock, not being strictly essential, must compete with other industries for the consumer dollar. If a customer buys a tree or a bush and later thinks he was "taken-in" during the process, he may spend his next spare dollar on golf instead of another rose bush.

The nursery inspector is bound by law to work toward stopping the spread of plant pests. He is also required to protect the public from being sold plants which are not in good vigor. Human nature being what it is, rejects the thought of being regulated, especially when such regulation becomes a personal experience. This is a natural reaction and occurs within the best of us from time to time. However, to our knowledge, in no industry is the welfare of the businessman more closely bound to the satisfaction of the buying public than in the nursery business. It follows that good regulation, properly applied in good faith and with sound judgment, can only help the nurseryman who looks toward the future.

In assessing the development of the inspection service during the past sales season, the Division of Plant Industry feels that better progress has been made this year than in any year during the last ten. We think we have had better cooperation than ever before from the nursery dealers as a whole.

We take this means of expressing our appreciation to them for making a difficult task much easier.

Our wish is that with this cooperation and our continued efforts, we can in a small way contribute toward a larger, better, and more prosperous industry which will enjoy even fuller confidence of the buying public in the future.

Editor's Note: As of this writing, Mr. Trampe is recovering from an automobile accident in which he and Mrs. Trampe were painfully injured. Following hospitalization at Mercy Hospital, Coon Rapids, they hope to convalesce at home shortly. The Newsletter extends the Horticultural Science Department's best wishes for a complete recovery.

RESEARCH COMMITTEE REPORT--II

The recommendations for shade trees, considered by Minnesota nurserymen as best for production and sale, was published in the May-June issue. The winter meeting of the Research Committee also made suggested lists for shrubs, vines, ground covers, and ornamental trees. Don Nordine, Rod Bailey, and Vince Bailey from Bailey Nurseries; Ed Reed and Vernon Lorentzen, Park Nurseries; Charles Hawkins, Rose Hill Nursery; Lawrence Bachman, Bachman's Nursery; Richard Cross, Cross Nursery; and Harry Brostrom, Jewell Nursery, met with Leon Snyder, Harold Pellett, Robert Mullin, Mervin Eisel, and Jane McKinnon of the University to discuss plant materials and to make lists of recommended plants.

These lists are not intended to be exclusive of other good and well-known

materials, but they are suggestions for nurserymen to consider, recognizing the different cultural and site requirements for each variety.

ORNAMENTAL AND FLOWERING TREES

Acer ginnala--Amu Maple (Tree form)
Carpinus caroliniana--Blue Beech
Cornus alternifolia--Pagoda dogwood
Crataegus crus galli--Cockspur thorn
Eleagnus Angustifolia--Russian Olive
Malus Hybrids, Flame Flowering Crabapple
Radiant Flowering Crabapple
Red Splendor Flowering Crabapple
Sundog Flowering Crabapple
Strathmore Flowering Crabapple
Van Guard Flowering Crabapple
Zumi callocarpa Flowering Crabapple
Ostrya Virginiana--Ironwood
Prunus Virginiana Var. -- Schubert Chokecherry
Sorbus alnifolia--Densehead mountain ash
Aucuparia--European mountain ash
Americana--American mountain ash
Delora--Showy mountain ash
Syringa Japonica Amurensis--Japanese Tree Lilac

SHRUB ROSES

Rosa Rugosa Var. --Grootendorst Rose
Rosa Hybrid--Prairie Dawn Rose
Rosa Hybrid--Lillian Gibson

GROUND COVERS

Aegopodium Podgraria--Bishops Weed
Arctostaphylos uvi-ursi--Bear Berry
Convallaria Majalis--Lily of the Valley
Euonymus coloratus--Purple leaf winter creeper
Euonymus Fortunei--Winter creeper
Forsythia Var. --Arnold's Dwarf Forsythia
Lotos Coroniculatus--Birdsfoot Trefoil
Pachistima Canbyi--Canby Pachistima
Pachysandra Terminalis--Japanese Spurge
Phlox Borealis--Arctic phlox
Polygonum Reynowtria--Dwarf polygonum
Potentilla Tridentata--Wineleaf Potentilla
Spirea Japonica--Alpine Japanese Spirea
Coronilla Varia--Crownvetch
Coronilla varia Var. --Golden Crownvetch
Thymus sp. --Perennial Thyme
Veronica Ruprestis--Creeping Speedwell

VINES

Aristolochia Durior--Common Dutchmans pipe
Campsis Radicans--Common Trumpet creeper
Celastrus loeseneri--Loesener ("Chines") Bittersweet
Celastrus Scandens--American Bittersweet
Clematis in variety

Clematis Paniculata--Sweet autumn clematis
Clematis Tangutica--Golden clematis
Lonicera Dropmoreana--'Scarlet Trumpet' Honeysuckle
Parthenocissus Quinquefolia Engelmannii--Engelmann Ivy
Parthenocissus Tricuspidata--Boston Ivy (also dwarf strain)
Vitis hybrid--Beta Grape

DWARF SHRUBS

Acer Ginnala 'Durnad dwarf'--Durand Dwarf Amur Maple
Berberis Thunbergi var. --Crimson Pygmy Barberry
Buxus Microphylla Koreana--Korean Littleleaf Boxwood
Ceanothus Americana--New Jersey Tea
Cornus stolonifera Var. --Kelsey's dwarf Dogwood
Deutzia Lemoine Compakta--Dwarf Deutzia
Diervilla Lonicera--Dwarf Bush Honeysuckle
Euonymus nanus turkestanica--Dwarf Euonymus
Lonicera Xylosteum nanum--Dwarf European Fly Honeysuckle
Magnolia Stellata 'waterlily'--Waterlily Magnolia
Philadelphus Virginalis Var. --Dwarf snowflake mockorange.
Potentilla Fruiticosa
Vars. --Forrest Potentilla
Gold Drop Potentilla
Jackman Potentilla
Katherine Dykes Potentilla
Tangerine Potentilla
Rhododendron Molle--Mollis Azalea
Ribes Alpinum--Alpine Currant
Spiraea Bumalda Fruebelii--Fruebel Spirea
Symphoricarpus Albus Laevigatus--Garden Snowberry
Symphoricarpus Orbiculatus--Indian Currant Coral Berry
Virburnum Opulus
'compactum'--Compacteur Cranberry bush
nanum--Dwarf Compacteur Cranberry
Virburnum Triloba Compacta--Compact Highbush Cranberry

UM NAMES NEW PLANT PATHOLOGIST

Howard L. Bissonnette, who served as Extension plant pathologist at North Dakota State University, Fargo has been appointed professor and Extension plant pathologist at the University of Minnesota. His appointment was announced recently by Roland H. Abraham, director of the Agricultural Extension Service.

Bissonnette will work closely with Herbert G. Johnson, until now the University's only Extension plant pathologist, on problems of plant disease control. Bissonnette will

concentrate on problems in cereal grains, sugarbeets, potatoes, and sunflowers while Johnson will concentrate on disease control in corn and soybeans. They will both work on problems in ornamental fruits, vegetables, and trees.

Bissonnette joined the NDSU faculty in 1962. Before that, he served more than 5 years with the U. S. Department of Agriculture and was located on the St. Paul Campus of the University.

He received his M. S. and Ph. D. degrees from the University of Minnesota in 1956 and 1963, respectively. He earned a B.S. degree from St. Thomas College, St. Paul in 1952. Before that he participated in U. S. Navy educational programs at Chicago, Cleveland, Ohio, and Dickinson, N. D. He is a member of the American Phytopathological Society, the American Mycological Society, the World Meteorological Society, and the American Society of Sugar Beet Technologists.

UM TO OFFER 2-YEAR HORTICULTURE DEGREE

A new 2-year program in landscape horticulture will be offered by the University of Minnesota to prepare students for supervisory positions in the field, Harold Pellett, University horticulturist, announced.

Students who complete the program may receive the Associate in Arts degree. "The program will appeal to high school graduates who enjoy working out-of-doors and dealing with people," Pellett said. It combines work in the classroom with practical experience at the University Landscape Arboretum and commercial companies.

Students completing the program may find openings in nurseries, commercial landscape maintenance, highway landscape maintenance, and park and golf course maintenance. Those interested in sales will find many opportunities with corporations marketing agri-chemical products. Those interested in business management may become proprietors of their own nurseries or landscape service companies.

The program is offered cooperatively by the College of Agriculture, Forestry and Home Economics and the General College of the University. Students will combine general education courses and specialized courses in soils and horticulture and elective courses in management, marketing, and business law.

Students will pay the University's regular tuition and fees, but will be paid for their work experience with the arboretum and commercial companies. "This is a

unique opportunity for students to defray the cost of their education," Pellett said.

For additional information, write either Allen Johnson, The General College, University of Minnesota, Minneapolis, Minn. 55455, or Harold Pellett, Horticulture Department, University of Minnesota, St. Paul, Minn. 55101

NEW FRATERNITY CHAPTER INSTALLED

Lambda Chapter of Pi Alpha Xi was officially installed at the University of Minnesota recently. Pi Alpha Xi is a scholastic honorary fraternity founded at Cornell University in 1923.

Frederick Busch, (Busch Brothers' Greenhouses) of the Epsilon Chapter, Ohio State University, read the letter proclaiming the new chapter from Dr. Jack Gartner, University of Illinois, national president.

Busch and other members of the honorary fraternity initiated 23 charter members. Dinner and election of officers followed.

Other schools with floriculture-ornamental curriculums which have chapters are Cornell, University of Illinois, Pennsylvania State, Michigan State, Ohio State, Rutgers, Washington State, University of Maryland, and North Carolina State.

NATIVE PLANTS FOR COMMUNITY LANDSCAPING

by

L. C. Snyder, A. G. Johnson,
R. Mullin, H. Pellett,
R. Phillips, M. Smithberg
D. B. White

Reprinted from Minnesota Science, April 1967.

NATIVE PLANTS are seldom fully appreciated or used in landscaping. Early plant explorers, representing European and English nurseries, were greatly impressed by the beauty of our North American trees and shrubs. Specimens taken back to Europe soon found a place in the gardens of England and on the continent. Improved selections were made and many of these fine ornamentals were reintroduced to beautify our American gardens.

Hardiness is one of the greatest attributes of our native plants. A landscape planting made largely of native plants can be a thing of beauty and has the added advantage of blending into the natural scenery.

Unfortunately, few of our native materials are available commercially. Plants moved from the wilds usually are difficult to transplant and establish in ornamental plantings. Rather than risk failure in establishing

collected plants, gardeners and landscapers have been willing to accept and use plants available from nurseries. This is not to say that exotic plant materials offered by the nursery trade are not good and useful. It is, however, regrettable that so many of our beautiful natives are not available so they can be enjoyed in landscape settings.

Nurserymen are not entirely to blame for this situation. They grow what the public wants and demands. As long as the public demands Asiatic lilacs, Tatarian honeysuckles, European highbush cranberries, and Japanese yews, that is what they will get. As soon as the public recognizes the true value of our native plants in the landscape and starts to ask their nurserymen for them, the nursery industry will respond and make them available.

Fortunately interest in the use of our native plants is increasing. Highway beautification programs and landscaping of resort areas in natural settings have placed a premium on plants that blend with their surroundings. Landscape architects and designers, recognizing the value of our native species, are beginning to specify them in their plans.

The University of Minnesota Landscape Arboretum has done much to demonstrate the use of native species. Here they can be seen growing next to introduced species. In the arboretum and on collecting trips in native populations, superior individual plants are sought. A number of selections have been made and are being evaluated for possible introduction.

Among this evergrowing list of selections are superior selections of red maple (Acer rubrum) based on flower color and fall foliage color, a dwarf red-osier dogwood (Cornus stolonifera), an upright Kentucky coffee tree (Gymnocladus dioicus), a sugar maple (Acer saccharum) with superior red fall color, a selection of skunkbush sumac (Rhus trilobata) that is highly resistant to leaf diseases, and dwarf forms of jack pine (Pinus banksiana) and white pine (Pinus strobus).

Cultivated varieties of other native species that have recently been introduced by enterprising nurserymen include: Shubert's Chokecherry (Prunus virginiana 'Shubert'), Stockton pincherry (Prunus pensylvanica 'Stockton'), Summit green ash (Fraxinus pensylvanica 'Summit'), and Marshall's Seedless green ash (Fraxinus pensylvanica 'Marshall's Seedless'). These examples illustrate the possibilities for selecting superior individual plants in most of our native species.

Another possibility for the use of our native species is in a breeding program. Our Canadian neighbors at the Morden Experimental Farm in southern Alberta crossed a

native hawthorn with the double flowered, Paul's Scarlet hawthorn and obtained a population of seedlings from which they selected the Toba variety. This cultivar combines the hardiness of the native species with the double flowers of its more tender parent. The prairie rose (Rosa arkansana suffulta) is currently being used in our rose breeding program. Our prairie crabapple (Malus ioensis) has been used in several crosses with other crabapples.

The list of native plants that possess desirable landscape qualities is almost without limit. Space permits the discussion of only a few selected plant species.

TREES

With the introduction of Dutch Elm disease into the state, interest has increased in suitable substitute trees that can be planted for street and landscape plantings.

We are fortunate to have some very desirable native species that are of a comparable size to the American elm. These are the American linden (Tilia americana), red maple (Acer rubrum), sugar maple (Acer saccharum), green ash (Fraxinus pensylvanica), oak (Quercus spp.), hackberry (Celtis occidentalis), and Kentucky coffee tree (Gymnocladus dioicus).

Smaller trees include ironwood (Ostrya virginiana), pagoda dogwood (Cornus alternifolia), river birch (Betula nigra), showy mountain ash (Sorbus decora), juneberry (Amelanchier laevis), and blue beech (Carpinus caroliniana).

All of the above species can be grown from seed, and this method of propagation will be used until superior individuals or clones are selected and introduced. This has already happened with the Summit green ash.

SHRUBS

Minnesota has fewer desirable shrub than tree species. Several dogwoods are suitable for landscape plantings. These include the red-osier dogwood (Cornus stolonifera) planted for its bright red winter stems and the gray dogwood (Cornus racemosa) with its white fruits and red pedicels.

The American highbush cranberry (Viburnum trilobum) planted for its flowers and bright red fruits, is quite similar to its European cousin (Viburnum opulus).

A dwarf form of the American highbush cranberry has been selected and is now available. Although no scientific comparisons have been made, the native highbush cranberry seems to be more resistant to aphid injury.

Another promising native shrub is the winterberry (Ilex verticillata). This is a deciduous holly, native in our swamps, that produces bright red fruits in late fall.

Leather wood (Dirca palustris) is still another desirable native shrub with early yellow flowers.

GROUND COVERS

Suitable ground covers are needed and are in great demand for highway slopes and for landscape situations where it is difficult to maintain grass. Unfortunately, many of the better ground covers used in the east and south are lacking in hardiness.

Several native species show some promise. These include the bearberry (Arctostaphylos uva-ursi), creeping juniper (Juniperus horizontalis), and the wine-leaf cinquefoil (Potentilla tridentata). Other species are being tested for possible use.

HERBACEOUS PLANTS

Many of our native wild flowers respond well to cultivation and make attractive garden subjects. Of special interest are double forms of the bloodroot (Sanguinaria canadensis) and rue anemone (Anemonella thalictroides).

Our mayflower (Hepatica acutiloba), showy wakerobin (Trillium grandiflorum), woods phlox (Phlox divaricata), and the showy ladyslipper (Cypripedium reginae) are other native wild flowers that are prized for natural plantings.

NEW PUBLICATIONS

Horticulture Fact Sheet No. 18 -- Growing Daylilies, Mervin C. Eisel. Available at Bulletin Room, University of Minnesota, St. Paul.

Insecticides And Their Uses In Minnesota--1968. J. A. Lofgren and L. K. Cutkomp. Agricultural Extension Service, University of Minnesota. Available at Bulletin Room, University of Minnesota, St. Paul, or at local County Agents' offices.

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