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Based on the needs indicated by The Industry, a Steering Committee made up of Farmingdale Faculty and New York Arborists was formed. The committee worked to design a program that would provide the Arboriculture student with the practical, scientific, business and technical training that is required of an arborist initially in starting positions and later on in sales and management.

The four Arboriculture courses offer the following:

**Introductory Arboriculture** is divided into two parts, the first dealing with Landscape Drafting to enable the student to read landscape construction blueprints and draw plot plans for themselves. The second half of the course is outside and is concerned with the use of arborist tools and techniques such as chain saw maintenance, use and safety; transplanting large trees; preparing hydraulic sprayers for use after winter; dormant spraying: the proper use of the Brush Chipper; fertilizing and spraying.

**Arboriculture I** involves the principles and techniques of field arboriculture. Students are exposed to the National Safety Standards for Arborists, Shade Tree Pruning, The National Arborist Association Pruning Standards, (CODIT) Compartmentalization of Decay in Trees, some cavity work, bark repair, bracing, cabling, fertilizing, and non-parasitic problems. Lab requirements for Arboriculture I are: 30 hours of tree climbing and pruning large trees and the proper use of ropes and saddles. They are taught where and how to put ropes in a tree, how to get up in the tree, and working ropes to move about. The students get the basics of climbing and climbing safety. The Arboriculture students do all of the tree pruning on the campus of the State University of Farmingdale.

**Arboriculture II** is split into two parts. The first part of the semester is spent on arboricultural business management: How to write a safety program for a firm, personnel management, how to hire, treating employees, and shade tree evaluation. Business practices and organization includes: management, record-keeping, estimating, customer relations, ethics and standards. Speakers are brought in from both large and small tree companies in addition to NAA Executive Secretary, Robert Felix. Industry representatives explain to the students the problems that they and the industry are facing. The second half of the course is concerned with Municipal Arboriculture/Urban Forestry. They take a look at the problems confronting a Municipal Arborist in planning, design, pruning, and specifications. The students are required to run a Street Tree Inventory on a part of the town of Farmingdale and propose a solution to an existing problem.

**Woody Plant Diagnostic Techniques** is offered in the last semester and calls for the student to draw upon what he or she has learned in their previous courses. It is assumed, in this course, that the student will end up with a position where he will have to diagnose woody plant problems, such as in sales or with an agency like Cooperative Extension. Students are required to diagnose insect, disease, site and physiological problems. They are taught how to use keys for diagnosing and also the principles of Integrated Pest Management.

A Commercial Pesticide Applicator License is mandatory and the Arboriculture student MUST be licensed by the state of New York or their home state in order to graduate.

Professor Ryan maintains a close contact with the industry by being active in both the Long Island and New York State Arborist Associations and he urges his students to also become involved with these associations and the International Society of Arboriculture. Ryan feels that one must know the industry in order to work with it. He also wants his students to know the practical applications of the industry and not just theory.

### First graduating class

In June, the first class of Arboriculture students will graduate from the State University at Farmingdale. The graduating class consists of twelve students, two women and ten men, who will be looking to gain employment with professional tree services. The class of 1981 expects to graduate nineteen new arborists, three women and sixteen men. Professor Ryan wants to build up the program so that the State University turns out twenty-four students each year for the arboriculture industry.
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ARISTOCRATIC NATIVE PLANTS
ARE LOW MAINTENANCE BEAUTIES

By Douglas Chapman, Horticulturist, Dow Gardens, Midland, MI

There are several truly aristocratic native plants which complement many landscape situations. These include dogwood, redbud, shadblow, witch-hazel, and Striped Maple.

**Flowering Dogwood** (*Cornus florida*) often reaches 20 to 25 feet in height with a sympodial or layered habit of growth. Then in full flower, this tree gives a cloud-like or wispy feeling in the woods. The stems are soft, dark grey when young. The bark is dark "alligatored" at maturity. One can expect flowering 3 out of 10 years in unprotected sites (flower buds hardy to 10 degrees above zero); with almost annual blooming in protected courtyards, near buildings, or when an understory for deep-rooted trees, e.g. oak or pine. The flowers usually develop mid to late May throughout the northeast.

Dogwood prefers acid, organic, well-drained soil. Flowering Dogwood is a good specimen plant in protected areas, good as a border tree, or understory plant in naturalized areas. *Cornus florida* is truly a tree for all seasons, due to its unique habit of growth, flowers, rich green foliage during the summer, and, of course, outstanding fall color. When considering maintenance, one should prune rarely, as closure of the wound is usually slow.

**Red-Flowering Dogwood** (*Cornus florida rubra*) is the most commonly available cultivar. This plant should be used less in more northern areas as its flower buds are less cold temperature hardy.

**Pagoda Dogwood** (*Cornus alternifolia*) is a native from New Brunswick through Wisconsin and Minnesota. It is a multiple-stemmed shrub or small tree, reaching 20 to 25 feet in height with that sympodial or horizontal-layered habit of growth. The flowers, light yellow in color, are particularly effective for late spring or early summer color. The foliage is a bright yellow-green throughout the summer with some slight fall purpling. In the northern areas, this regal native is compatible in full sun or as an understory plant. It thrives in acid, well-drained soils.

Pagoda Dogwood can be effectively used in borders for home landscapes and park situations. One should consider this an extremely low maintenance plant and not prune. Pruning or simple wounds can result in cankers — the one main problem this exciting plant is killed by.

**Kousa Dogwood** (*Cornus kousa*), although not a native, should be looked upon as an exciting understory or specimen plant. It is more upright than Flowering Dogwood, usually reaching 20 to 25 feet in height. When young, it is somewhat vase-shaped, becoming oval at maturity. The stems are usually multi-colored, as the plant gets older, with bark exfoliating. Flowering, even in northern areas, is dependable from late May through mid-June after the leaves are out. This tree's flowering bracts are pale to clear white. Further, the flower buds are considerably more low temperature hardy than Flowering Dogwood. The cultivar, *Cornus kousa chinensis* 'Milky Way,' is slightly more spreading in

Raspberry-like fruit of the Kousa Dogwood provides a unique addition to the landscape from late August through October. Yellow, thread-like flowers of Common Witch-Hazel in October.
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habit of growth, with bracts that are more pointed, giving it a delicate, lacier feeling. Cornus kousa can be used as a small tree, specimen, or in mass plantings. It seems to thrive in sunnier locations, as contrasted with Flowering Dogwood, tolerating shade. The fruit is effective in late August through October, being one-half to one-inch in diameter. This reddish, globular-shaped fruit, often resembles raspberries. Although seedy, they are usually quite good to eat.

The summer foliage is a good, exciting green with fall color developing extremely late or not at all. The main contrasts between Kousa versus Flowering Dogwood are its ability to thrive in more exposed sites, the upright habit of growth when young, transplants easier, and provides good flower color in late May, while flowering dependably each year later in the season.

Eastern Redbud (Cercis canadensis) can be a multiple-stemmed shrub or small tree, reaching 20 to 30 feet in height and width. When young, the plant is somewhat upright, becoming oval at maturity. Young plants have a rich-dark black bark, which becomes rough and reddish at maturity. The heart-shaped leaves are slightly purplish as new growth, becoming rich-dark green for the summer months, with fall color being a clear yellow. Not only is the yellow fall leaf color effective, but the brown pea- or bean-shaped pod adds an interesting contrast to the landscape. The flowers are purplish in bud, contrasting in an exciting way against the black bark, becoming rosy-pink in full bloom. Flowering of redbud is particularly effective, as full bloom occurs in mid to late May before leaf expansion. Redbud requires little pruning; in fact, is very susceptible to wounds. Although closure of the wound often occurs, heartwood decay is a problem even with small wounds.

This plant will take exposed sites as a specimen or integrates well in a shrub or tree border. In fact, redbud thrives when the root system is shaded or cooled by non-competitive shrubs. It grows best in rich, deep, loamy, well-drained soils. The cultivar, White-Flowering American Redbud (Cercis canadensis 'alba'), has an almost identical habit of growth, flowering period, and general response, as does the species with one exciting difference — the flower color. Although there are several other cultivars available, confusion in the trade renders seedlings a better value.

Shadblow (Amelanchier canadensis) is another regal native. This gray, multiple-stemmed shrub or small tree is a herald of spring. The good, clear, white flowers, contrasted by the silver-green foliage in late April or early May, make this an outstanding plant in native plantings, as understory, or a specimen shrub. Shadblow vary from 8 to 20 feet in height, usually being somewhat vase-shaped. The summer foliage is a clear, rich-dark green, contrasted when young against gray bark and when old against black and gray-striped bark. In the fall, shadblow's oval-shaped leaves range in color from scarlet to yellow, literally painting much of our woodland landscape. This plant rarely requires pruning and should be considered outstanding in low maintenance areas.

Common Witch-Hazel (Hamamelis virginiana) is usually a multiple-stemmed shrub that reaches 25 feet in height, but can be trained into a small tree. The yellow, thread-like flowers are an exciting addition to the fall landscape (October). Individual branches are often horizontal, giving the illusion of a Flowering Dogwood branch. The dark gray stem accents the clear yellow-brown fall color which helps this understory plant "light-up" the landscape. It is a good border or specimen understory plant for naturalized areas in large home or park landscapes. Witch-hazel thrives in sandy, yet poorly drained soils. It isn't host for a major insect or disease. Common Witch-Hazel is a hardy, low maintenance pest-free plant.

Striped Maple (Acer pensylvanicum), a native of southern Canada and northern United States, is an exciting understory plant. Its large red buds open to showy yellow-green flowers, making this an outstanding native. This small tree is somewhat open yet rounded in habit. The summer leaves are a sparkling yellow-green. Striped Maple is rarely affected by insects and diseases, while being somewhat drought tolerant. Fall color has been noted on some plants but rarely develops. Its green and white-striped bark can be a unique addition to the winter landscape. This low maintenance, relatively insect and disease-free small tree, is an outstanding addition to naturalized areas but is rarely available in the trade.

These aristocratic or regal natives should be considered for low maintenance areas. They require little or no pruning, are perfectly hardy, yet in most instances, grow extensively throughout the northeastern and central U.S. These plants add exciting spring color to the landscape. Shadblow, Flowering Dogwood head the list, with Redbud, Pagoda Dogwood, Kousa Dogwood, Striped Maple, and Common Witch-Hazel soon following. These plants are good as understory or mass border plantings, with Redbud, Flowering Dogwood, and Kousa Dogwood, outstanding as specimen trees when planted in protected sites. They are unique in that damage by lawn mower or pruning shears is slow to heal; therefore, wounding, in general, should be minimized or heartwood rot will be a problem. Transplanting is relatively successful for Amelanchier, Pagoda Dogwood, Kousa Dogwood, with Flowering Dogwood being more difficult, and Eastern Redbud, Striped Maple, and witch-hazel being most difficult. Once established in the landscape, few insects or diseases affect these truly regal plants.

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CONTRACTORS TRIM INVENTORIES BUT PLAN FOR STEADY GROWTH

By Bruce F. Shank, Editor

Landscape contractors are very alert to inflation, are keeping inventories down, and fully expect to increase sales this year according to the latest poll by the Research Department of Harvest Business Publications.

Their reaction to economic conditions appears to be one of cautious optimism due to the knowledge gained during the 1974 recession, the fact that construction contracts are still strong, and the expectation that the demand for improved residential and commercial landscapes will rise as energy costs restrict man's travel and force him to bring nature into his surroundings rather than traveling to it.

Inflation tops government regulations in importance according to more than 150 contractors polled. Realizing that inflation nearing 20 percent is likely for this year, contractors are planning for sales growth from 10 to 30 percent to stay even in real dollars.

Other areas of concern are quality of labor, liability insurance rates, and labor supply. Fly-by-nighters follow these other concerns.

Buying in the fourth quarter of last year showed no large fall off. The percentage of respondents buying in the quarter was typical of any normal year for chemicals and seed, and off slightly for equipment. The average value of purchases for chemicals was down slightly, indicating conservative buying to keep inventories in check. Purchase of irrigation equipment held strong in both percentage buying and average purchase. No dramatic drop in mowing equipment or tractors was indicated by the respondents.

Comparing our research from last winter, the fourth quarter was considerably better than the first quarter. We hope to have data on the first quarter of 1980 by the June issue, and perhaps some general observations by May.

Interest in leasing equipment is obvious at the many regional and national shows we attended this fall and winter. Manufacturers have remained relatively quiet on the subject of leasing and only a few regional distributors are actively seeking leas-

Continues on page 40
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Contractors from page 38

ing business. Part of the reason for this may be Green Industry equipment makers have never built up large inventories.

One area which may not be as evident as purchasing, but is as critical, is personnel. Contractors are deeply concerned over the quality and cost of employees. Unemployment, health and liability insurance have risen in cost rapidly. The cost of fringe takes away from the more psychologically important salary increase. It becomes impossible to keep employee salaries even with inflation and still pay fringes required by law. Customers can’t be expected to absorb annual price increases large enough to offset both fringe and salary cost increases. Therefore, reducing the number of employees is unavoidable unless growth in business and productivity make up the loss.

The well-trained candidate for employment offers many advantages providing his or her character includes the senses of responsibility, accomplishment and ambition. An education doesn’t guarantee these. Check with school counselors for these vital traits about applicants.

If these traits are present, the jobs they perform are generally more creative, more precise, less likely to require a return trip, and more likely to impress the customer.

Contact state extension personnel for the location of schools with programs relating to landscape contracting and design.

Personnel are as critical an economic factor as excessive inventories, high interest rates, or taxes. To date, landscape contractors seem to be doing the right thing at the right time. They are cautious, but still concentrating on new business. Their buying will be less seasonal and more according to job. They have learned from the past and will be around for the next recession, and the next, and the next.

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