



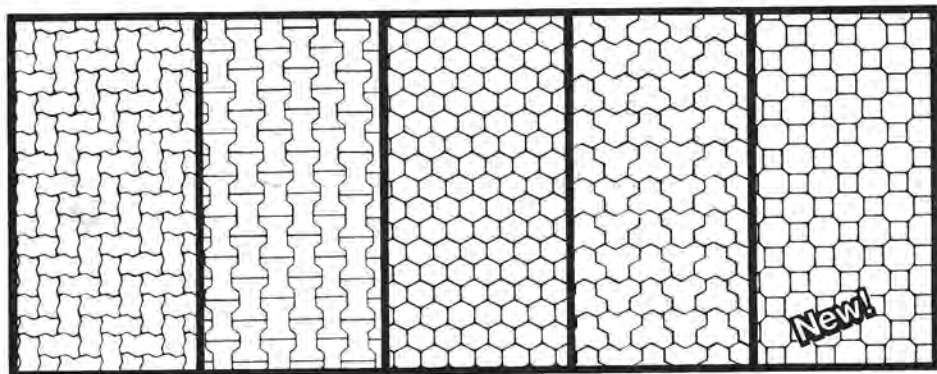
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November 1980

Volume 8, no. 5

Congress Issue

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Volume 8, no. 5 November 1980

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Landscape Ontario is a bi-monthly publication of Landscape Ontario, an association formed by the Ontario Garden Maintenance & Landscaping Association, the Landscape Contractors Association and the Ontario Nursery Trades Association. Editorial and administrative offices located at 103-3034 Palstan Road, Mississauga, Ontario L4Y 2Z6. Phone (416) 276-6177.

Our Front Cover

Toronto City Hall shows off the 3000 hyacinths that were grown individually in jiffy pots and transferred by Metro Toronto Parks Commission to the City Hall grounds. See photo essay behind cover blooms, page 38.
 (photo credit: Malak)

Subscription rates: one year — \$12; two years — \$18; three years — \$24. Please make cheques payable to **Landscape Ontario**. Views expressed do not necessarily reflect the views and opinions of the association or its members, but are those of the writer. Material may not be reproduced in any form without written permission of publisher. Second class mail registration number 3740. ISSN 0383-9257.

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THE PRESIDENT'S MESSAGE

Where Are We Going?



Frank Kearney
*H.C. Downham Nursery
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I haven't been in this industry that long and so it is difficult for me to really appreciate where we have been; but I have been involved enough in the industry in the past few years to see where we are going. To choose one word is dangerous, but I would put forward "PROFESSIONALISM". Why? Well, I believe that if the industry itself does not continually upgrade its standards and its position in the community, i.e. professionalism, then I believe that government will step in and do it for us, including some things we might not like to see. If this is true, then we are better to upgrade our industry ourselves!

Let us look at a few things we can do:

(a) Improved plant labelling — in Eugene Whelan's article in a recent issue of *Landscape Trades*, he specifically identified this deficiency in our industry. In the United States, the American Association of Nurserymen avoided (temporarily) a regulation requiring extremely detailed plant labelling. We have to be the industry leaders and tell the consumer what the plant is (botanical and common names), what care it requires, and what the plant looks like.

(b) Education of our sales staff — there is no doubt about it, the public does not know enough about plants, care and maintenance, chemicals, etc. We should have each of our staff who deal with the public take

the Qualified Plantsman course to enable them to learn the essentials and thereby give proper advice.

(c) Certification as a profession — our landscape contracting members need some form of professional status either administered by the association (like a doctor) or by government (like auto mechanics). Professional certification would come after completion of specified courses, working for a certain period of time with a qualified firm and passing a series of examinations. The Ontario Diploma in Horticulture is the first step in this program.

(d) Information on chemicals — the public, at least some of the public, is scared and confused by chemicals. Our own sales staff doesn't have all the answers due to lack of knowledge. Therefore, we need unbiased consumer handout material (from the trade association) to present in plain English what chemicals should be used for what problem. Our personnel should know this like they know the back of their hand.

(e) A strong trade association — no, I don't say this because I'm president of the trade association. I say this because I believe that our impact on government, the public and the media is significantly enhanced when the industry acts collectively through its trade association. While there is a place for each of us acting independently, so many things have been achieved in the past several years by group action through the trade association that I think we would all agree that a strong trade association is vital.

If you look at the list again, you will see that you can handle the first area rather well, by spending that little bit extra to get proper labelling for your plants. If the label costs you 10 cents more, I believe you will reap the benefits to a far greater extent by selling more plants. Education of our personnel is solved if you have your staff take the Qualified Plantsman course (which was designed as

continued on page 6

The Greening of Canada.

Scotts lawn and garden products continue to grow in popularity as satisfied customers across the country watch their lawns grow thick and green. And, next year, we intend to keep on greening and growing with our most energetic program yet.

Scotts advertising will be seen by more people than ever before. The main thrust will be in TV. More TV, more often than ever. In addition, we plan to advertise in major magazines with attractive, attention-getting full colour ads.

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available to all Scotts dealers. Our product information seminars and reference manuals will give you the knowledge to solve your customers' lawn and garden problems with the right Scotts product.

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While this year has been our best yet, we expect next year to be even greener. And we invite you to grow with us. For further information, write Scotts, P.O. Box 138, Toronto Dominion Centre, Toronto, Ontario M5K 1R1.



Scotts Means Business

continued from page 4

a result of Landscape Ontario's initiative).

The next two items require action by your trade association and you. The Educational Committee is cautiously working towards the concept of a government administered "Certified Trade" on a non-compulsory basis. Provided that industry has control of this program, this appears to be the way to upgrade our "profession". The current furor over 2,4-D clearly indicates the need to work with the chemical industry to devise the handout material so that our members, their personnel and the public have the best information available. The onus is on you, however, to make sure that you and your personnel use the material.

Finally, a strong trade association requires your involvement. It need not be a major involvement, but participation in Landscape Ontario activities at the chapter, committee or province-wide level is what moves this industry "where it is going" — professionalism.

Postscript

New faces - a warm welcome to Bob Cheesman in his new capacity as Executive Director and to Eric Columbus, our new Manager, Communications. □

Business has been good!

According to a survey of the Canadian Nursery Trades industry to be published in the near future by Statistics Canada, our industry increased its revenue by 23% from 1978-1979. Ontario alone accounts for 44% of that increase. 52% of the sales from own production came from the province as well. Figures for Ontario in 1979 are:

sales from own production	-\$29,670,000
sales from purchases for resale	-\$15,719,000
contract services (landscaping maintenance)	-\$26,978,000
sales of related product	-\$ 5,568,000
Total	-\$77,935,000

In 1979, floriculture and nursery in Ontario ranked fifth in total agricultural cash receipts, excluding livestock.

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CASEY'S CORNER

It's Up to All of Us



Casey van Maris
President of
Parklane Nurseries

Landscape Ontario is to be congratulated on its decision to become more visible to the consumer. The association has decided to co-sponsor with the Ontario Swimming Pool Association a newly launched Landscape Pool and

Garden Show. This show will be held in the Automotive Building, February 26, 27, 28, March 1 and 2, 1981.

For years, the promotion of our goods and services was left to the enthusiasm of amateurs (the Toronto Garden Club), the Parks Department, and a few contractors and nurserymen. Never in my recollection has there been a show in Ontario sponsored by such a large group as these two associations represent.

Landscape Ontario will look after one of the lecture rooms with educational programs such as the 2,4-D issue, pruning, pesticides and many, many more. The Toronto chapter will landscape a real information booth.

It is now up to the members to exhibit at the show. Hopefully, all our garden centres will be represented with displays and timetables to stimulate customers to buy early and to buy from them. Landscape contractors will be present in abundance.
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A FEW WORDS ...

By Bob Cheesman
Executive Director



Congress

We're getting close to the 1981 Landscape Ontario Horticultural Trades Association Congress, and only a few exhibits remain to be sold. The exhibit area space was expanded by 24 - 10' x 10' booths of which only 16 remain. At the 1980 show we sold all available exhibit space, therefore our exhibitors for 1981 have increased, making this one show not to miss! The theme chosen is "Communications Within Our Industry". Let us all attempt to utilize this theme within all of our companies and organizations. By increasing our awareness of the importance of communication, we can improve all of our businesses.

The program of speakers has been set (see separate review) and a registration card has been inserted in the centre of this publication. Take the time to fill the registration card out and return it to the office. Early registrants will have a chance to win a colour TV.

Why not enjoy the convenience of staying at the Sheraton Centre this year? You will be with fellow industry associates who can "communicate" with you! The hotel provides a reduced rate for all convention delegates of \$43 single and \$53 double per night. This is about 30% below regular room rates. Planned for the first time on Tuesday evening is a "get acquainted party" where you will be able to meet other industry members and exhibitor repre-

sentatives. Exhibits will be open late on Wednesday and the banquet is on Thursday. Now, doesn't having a room at the hotel sound like a good idea! Don't forget that the cost to attend and other related expenses are tax deductible.

As I previously mentioned, the exhibits will be open late on Wednesday. The reason behind this is to allow your key employees, who may have taken off-season positions, the opportunity to attend the trade show. A separate prize will be awarded to one lucky delegate who attends the exhibits between 6 and 8 p.m. The congress committee has worked diligently in obtaining the right speakers for the subjects to be presented. Why not join your fellow associates at this event?

CNTA

Since Marc Thiebaud of Oshawa Garden Service has assumed the presidency of the Canadian Trades Association, the two of us have met on numerous occasions. One of the most important aspects of our discussions has pertained to the new constitution and the bylaws to be proposed to each provincial and regional association. Currently, the new constitution and bylaws are being circulated to the various provincial and regional associations for approval at their annual meetings. Once all of these associations approve the new constitution and bylaws, they will be sent to the various ministries involved before they become law.

On November 24th, an executive meeting will be held in Saskatoon with President Marc Thiebaud, Oshawa Garden Service Ltd.; Past-

president Steve Lastiwka, Steve's Landscape Service Ltd., Edmonton; 1st Vice-president Ron Hunter, David Hunter Landscape Nurseries Ltd., Richmond, B.C.; 2nd Vice-president Stan Kochanoff, Maritime Nurseries Ltd., Falmouth, N.S.; Secretary-Treasurer Henry Heuver, Foothills Landscaping Ltd., Calgary. At this meeting we will lay out the future plans and course of action for CNTA and establish procedures and committees to improve the effectiveness of this national association. With Marc as president, results will be achieved which will be beneficial to all members.

The Board of Directors' meeting of CNTA will be held in Vancouver, B.C., on January 17, 1981, in conjunction with the BCNTA annual convention.

The commodity groups will meet in Toronto next July. Both Garden Centres Canada and the National Growers Group will participate in a three-day program. Watch for further details.

Member Services

Copies of the Plant Source List were recently forwarded to all active and interim members, as well as to all members of the Ontario Association of Landscape Architects. If you have any comments or suggestions on how to improve the publication, please take a few moments to jot them down and forward them to the office.

Included with the PSL mailing you should have received a Wage Survey questionnaire. Many members find this to be a valuable tool in determining wages to be paid to employ-

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ees in certain sectors and areas of Ontario. Concern has been expressed in the past that the results were printed too late. We would like to make these results available to you prior to Congress. Return your completed work sheet today!

Although now is the time of year that some firms slow down or close their operations for the winter season, our work increases. Along with our many other ongoing projects is the requirement that member firms submit their Workmen's Compensation Board Statement of Assessed Earnings from the year 1979. Once received, your firm will be invoiced for membership for the 1981 year.

President Frank Kearney is reviewing the information contained in the membership questionnaire. I am sure that once this information is tabulated, service to the general membership will be increased in the appropriate areas. To those who have already taken the time, our thanks. To all others, we trust that you are still collecting your thoughts and are getting ready to return your completed questionnaire.

Landscape Ontario Promotion

Promotion of our industry is an item which is steadily gaining prominence. Your elected representatives have approved the participation of the association in two shows; "Commongreen", at the University of Toronto and the "Garden, Pool & Landscape Show". Commongreen will be held in early November and will bring together students and industry members to discuss various topics. Frank Kearney will represent Landscape Ontario as a speaker and I will man an exhibit booth. Next February 26, 27, 28 and March 1 and 2, the Garden, Pool and Landscape show will be held in the Automotive Building of the Canadian National Exhibition. This show was formerly the Pool & Patio show which had been held in the Queen Elizabeth Building. Landscape Ontario has been given complimentary exhibit space by the show organizers. Along with the Ontario Swimming Pool Association, Landscape Ontario will also be sponsoring the lecture theatre. Topics of interest to the show delegates will be discussed. If you are asked to participate, make the most of the opportunity. But, why not volunteer your time to-

day? The public should be made aware of a professional trades association in the horticultural field. These two shows will assist the industry members in obtaining good employees and educated consumers.

During the past few weeks, a re-organization of office personnel has taken place. I look forward to assisting the members of Landscape Ontario in my new capacity as executive director. Eric Columbus has joined our staff to assume some of my previous responsibilities. Eric will be responsible initially for managing the LANDSCAPE ONTARIO and LANDSCAPE TRADES magazines and will also attend chapter meetings. With this addition we are again at full strength. Please feel free to call on us as we are here to serve you.

Don't forget to order your membership plaque! □

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COMING EVENTS

Hamilton chapter	Nov. 6/80	8:00 p.m.	Bohemian Restaurant and Tavern, Hwy. 5, Hamilton
	Dec. 4/80	8:00 p.m.	Bohemian Restaurant and Tavern, Hwy. 5, Hamilton
London chapter	Nov. 3/80	8:00 p.m.	Lampighter Best Western, Wellington Rd., London. "Dealing with your Banker & Analyzing Financial Statements".
	Dec. 1/80	8:00 p.m.	Lampighter Best Western, Wellington Rd., London. "Irrigation for the Homelandscape", speaker from Emco.
Ottawa chapter	Nov. 11/80	8:00 p.m.	Talisman Motor Hotel, Carling Ave., Ottawa. "Landscaping & Associated Industry from a Politician's Point of View" with Mr. Claude Bennett, MMP.
	Dec. 9/80	8:00 p.m.	Talisman Motor Hotel, Carling Ave., Ottawa. Garden writer Mr. Trevor Cole advises members on improving professional services to the general public.
Toronto chapter	Nov. 11/80	8:00 p.m.	Holiday Inn, 401 & Dufferin St., Toronto. "Cost Accounting and Estimating". St. John's Ambulance demonstration. Fruit trees for the homeowner. Chapter elections.
	Nov. 14/80		Fall Freeze Up Dinner & Dance , Ramada Inn, Toronto-Don Valley, 185 Yorkland Blvd., Willowdale. Contact: Mrs. Helen Haines, 32 Lauralynn Crescent, Agincourt, Ont. (416) 298-8707.
	Dec. 9/80	8:00 p.m.	"Interior Landscaping". Tropical flower slides, Vermeer tree spade discussion.
Waterloo chapter	Nov. 5/80	8:00 p.m.	Bingeman Park, Kitchener. "Money Nite".
	Nov. 15/80	8:00 p.m.	Fall Freeze Up Dance , Waterloo Motor Inn.
	Dec. 3/80	8:00 p.m.	Bingeman Park, Kitchener.
Windsor chapter	Nov. 11/80	8:00 p.m.	Roseland Golf Club, 455 Kennedy Dr. W., Windsor. "Turf" arranged by Richard St. Louis.
	Dec. 9/80	8:00 p.m.	Roseland Golf Club, 455 Kennedy Dr. W., Windsor. The Year in Review - Committee Reports.
	Dec./80		Annual Banquet to be announced.
Growers Group	Dec. 4/80	9:30 a.m.	University of Guelph, Arboretum Centre. Short course - Topics include: transportation of nursery stock, shipping, inventory control.
Canadian Greenhouse Conference	Nov. 7-8/80		University of Guelph. Contact: Dr. P.M. Harney, University of Guelph, Guelph, Ont. N1G 2W1
Common Green	Nov. 7-8/80		University of Toronto.
Land Policy Formulation Conference	Nov. 14-15/80		University of Guelph. Contact: Division of Continuing Education, Room 103, Johnston Hall, University of Guelph, Guelph, Ont. N1G 2W1.
Agricultural Outlook Conference	Dec. 7-8/80		Government Conference Centre, Ottawa. Contact: R.G. Marshall, Agriculture Canada, Room 341, Sir John Carling Bldg., Ottawa, Ont. K1A 0C5 (613) 995-9554.
Landscape Ontario Annual Congress	Jan. 13-16/81		Sheraton Centre Hotel, Toronto. Contact: Bob Cheesman (416) 276-6177.
International Society of Arboriculture Meeting	Apr. 16-17/81		Holiday Inn, City Centre, London, Ont. Contact the Society at: 5 Lincoln Square, P.O. Box 71, Urbana, Ill. 61801.

The Concept of Standard Forcing of Tulips and Hyacinths

By Dr. August De Hertogh
Head, Department of Horticulture
North Carolina University

The forcing of spring flowering bulbs as potted plants or cut flowers is rapidly becoming a science. Researchers in England, the United States, the Netherlands and other countries have assembled an extensive body of knowledge. If commercial bulb forcers are to benefit from this available information, they need a clear understanding of the factors which control the growth and development of these bulbs. Because a large number of diverse types of spring flowering bulbs are available, it is not feasible to cover all of them in a single article. I have, therefore, selected the tulip and hyacinth as the topics of discussion. The requirements of these bulbs are similar in many ways and yet differ sufficiently to demonstrate that each type of bulb has its own specific requirements. Thus, while generalizations can be made for spring flowering bulbs, there are certain limitations which must be considered. If the forcer is to be successful, he must become familiar with each type of bulb forced in his greenhouse.

Before discussing the standard forcing procedure for tulips and hyacinths, I shall initially cover some background material which is directly related to forcing.

What is a bulb? All bulbs are monocots and they are specialized buds which consist of a highly shortened stem surrounded by fleshy storage leaves called scales. There are two classes of bulbs. Some bulbs, such as the hyacinth and tulip, are tunicated, i.e. they have papery outer skin. Other bulbs, such as the lily, are non-tunicated. Structurally, there is much similarity between a bulb and a seed (Table 1). This is important to note because many forcers expect that, because of their size, bulbs should perform 100% of the time while it is well-known that most seeds germinate in the 90 to 95% range. Without going into detail, I believe that forcers should be aware that there can be small losses due to naturally occurring events. This should be taken in-

to account when planning an overall forcing program. If one needs 1000 cut tulips for a specific period such as Valentine's Day, it is wise to plant 1100 bulbs and calculate the cost of production accordingly.

What are the environmental requirements of the tulip and hyacinth? Some insight can be gained by determining the origin of the tulip and hyacinth. They are hardy bulbs and both bulbs originated in the Mediterranean area and Asia Minor. The climatic conditions which prevail in these regions is one of a cool-moist season followed by a warm-dry season. Thus, we can see the basis for the alternating temperature-moist requirements of these bulbs. These are the two most important factors in the forcing of the tulip and hyacinth. As you can see from the information in Table 2, there are exact temperature limits for the different developmental stages. Also, moisture is needed only after planting. In fact, very high humidity levels prior to planting can be deleterious at times. Nutrition is important only in production of the bulbs, but not in forcing. The duration of light (photoperiod) is also without effect while light intensity can be a factor only if it is too low (tends to stretch plants) or too strong (tends to shorten them).

Since temperature and moisture are the two major factors to be controlled it is also important to know that bulbs are never dormant. They

have an internal monitoring mechanism which perceives these factors. They can, therefore, be called "Biocomputers". The forcing result in the greenhouse is really a product of the inputs of temperature, moisture and development of roots over time during the months prior to placing the plants in the greenhouse. Thus, it is essential that these bulbs are handled with care at all times.

What is the procedure to be followed to force tulips and hyacinths? At present, the system which is most commonly used is



A cross section of a hyacinth bulb shows the flower already formed in the bulb at the time of planting.

Table 1

Structural Similarities of Bulbs and Seeds

Bulb Organ	Seed Organ
Tunic (when present)	Seed Coat
Enlarged stems or leaves for storage	Cotyledons or Endosperm
Apical meristem	Plumule of Embryo
Shorten Stem	Hypocotyl-Epicotyl region
Root initials	Radicle

called "Standard Forcing". This is the procedure described in detail in the 'Holland Bulb Forcers Guide'. The 'Guide' is available only from your bulb supplier or The Netherlands Flower-bulb Institute, 292 Laurier Avenue East, Ottawa, Ontario K1N 6P5. The 'Standard Forcing' procedure requires that all or part of the low temperature requirement be given to the bulbs after planting in pots or flats and placing them in "Rooting Rooms".

How has this procedure evolved? This system has as its basis the practices employed by bulb producers in The Netherlands. There are 5 stages of bulb production.

These are: (1) harvesting and pre-planting storage, (2) planting, rooting and low temperature mobilization, (3) flower stalk elongation, (4) flowering, and (5) bulb production. In horticultural practice, these events are handled as follows. Initially, all bulbs are harvested in June and July. They are subsequently graded and stored at warm temperatures (63-68°F) to initiate and begin developing the floral organs. In the fall, the bulbs are planted, kept moist and allowed to root and over-winter at low temperatures (33-48°F) to mobilize the plant towards flowering. In the spring, after the cold requirement has been satisfied, the floral stalk elongates and the plant subsequently flowers. The flowers are then removed to enhance bulb production, which takes place from the time of flowering to the time of lifting.

To apply the knowledge of the developmental cycle to the forcing of tulips and hyacinths only the first four stages are utilized (Table 3). Furthermore, to simplify the forcing procedures they can be subdivided into 2 distinct phases. Stages 1 and 2 become the **Programming Phase** and stages 3 and 4 become the **Greenhouse Phase**. Thus, the programming phase includes floral initiation and development during the first warm temperature treatment after harvesting and the satisfying of the low temperature requirement to mobilize the plant to flower in the greenhouse. This phase includes the time span of summer, fall and winter. It is the most important phase of forcing. To satisfy the low temperature requirement for tulips, part of the cold treatment may be given as a pre-cooling treatment. At other times the entire cold requirement is satisfied after planting. Hyacinths are generally not pre-cooled. In any event, both types of

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When planting tulips, plant flat side of bulb facing the outside of the pot.

Table 2

Influence of Temperature and Moisture on Development of Tulips and Hyacinths

Developmental Phase	Flower Initiation and Formation	Rooting and Mobilization	Floral Stalk Elongation and Flowering
Time	Summer	Fall & Winter	Spring
Temperature Requirement	First Warm	Low	Second Warm
Temperature Range	63-68°F	33-48°F	55-65°F
Moisture Requirement	None	Essential	Essential

Table 3

Developmental Cycle for Production and Forcing of Tulips and Hyacinths

	Programming Phase			Greenhouse Phase
	Summer	Fall	Winter	Spring
Important Events	Harvest of Bulbs Floral initiation and development Preplanting storage	Planting and rooting under moist conditions Begin Mobilization for flowering	Complete Mobilization for flowering	Flower stalk elongation and flowering

continued from page 13

bulbs are eventually planted, kept moist and allowed to root. The exact treatments will depend upon the desired date of flowering, use of the plant and type of bulb utilized. After the cold requirement has been satisfied, the plants are placed in a greenhouse to develop the plant or flower. This takes the place of spring in the normal developmental cycle and is known as the greenhouse phase. The greenhouse phase is dependent on the programming phase and generally is easier to control.

From this description of the forcing process one can see that there are four environmental factors which must be observed at all times. They are: temperature, both warm and cold; duration of the specific temperature treatments; roots and moisture. The forcer must keep these factors under control at all times if quality plants are to be produced.

There are two basic differences in the requirements of tulips and hyacinths. First, hyacinths need less cold than tulips. It has been found that 'Prepared' hyacinths require about 10 weeks of cold, while 'Regular' hyacinths need about 14 weeks. In contrast, the minimum cold requirement for the earliest forcing tulips is about 14 weeks. Some cultivars require twenty weeks. It is for this reason that the 'Guide' contains 143 cultivar description sheets for tulips and hyacinths. Since each cultivar has certain specific requirements, forcers should become familiar with each cultivar forced. The second basic difference is the tolerance limits for the two types of bulbs. Experience has shown that hyacinths have a greater ability to withstand adverse conditions which tulips cannot. It is for this reason that tulip forcers must pay closer attention to the requirements of these bulbs than hyacinth forcers. □



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continued from page 7

dance to show the purpose of the landscape skill and the variety in materials. Associated industries will no doubt be there to show new machinery and to promote their products.

In the next decade, quality living will become more and more important. High energy costs will limit spending on cottages, homes and travelling, etc. More and more, people are using their homes for recreational expenses.

Our industry has a great opportunity to benefit from this trend. It is up to every one of us to promote ourselves as a total industry rather than depending on 10 companies to do it for all of us. □



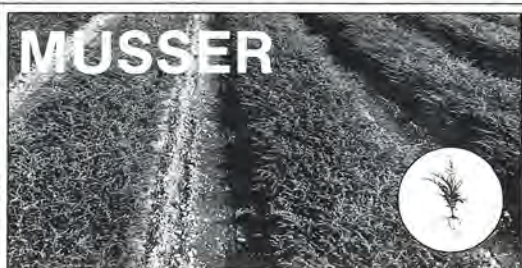
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Flowering Bulbs

By John Van Ast



Last April, my wife, two of our students and myself visited Holland — "Europe's Flower Garden".

Due to its ocean climate, the growing season in Holland is longer than on our continent. As a rule, flowers start blooming outside from early February and continue until the end of November. The months of April and May are usually called the "tulip months" and it was for this reason that we selected this time of year to see the bulbs blooming at their peak. Besides the tulips, you can also admire the beautiful hyacinths, daffodils, narcissus, etc. But before I give you an account of our trip, let me first tell you a little bit about the bulb itself.

The definition of a bulb, according to my dictionary, is "thickened, fleshy plant bud under the soil". My definition may be the same but it is phrased differently. To me, a bulb is a package deal which carries its own lunch box, a lunch that lasts a whole year. Now where can you find that sort of bargain for your own lunch? Let me explain what I mean by my definition. All flowers and plant seeds consist only of an embryo when seeded. This embryo will develop stems, leaves and flowers. It is, so to say, an accumulation of events. It happens step by step. A bulb however, is just the opposite. If you cut a hyacinth or any other bulb in half, you will see an infant plant in front of your own eyes. You can see the bulb leaves and the bulb flower all surrounded by fleshy scales containing starch. So here it is, a package deal: leaves, stems and flowers all in that same bulb, surrounded by

fleshy scales containing food enough for a whole season. Our lunch box, wonder of nature, wonder of beauty.

The flowering bulb is not a new development. Even in the 17th century, Holland's golden age, merchants paid thousands of dollars for just one of the new tulip bulbs brought back from Turkey. Tulips were even sold on the stock market and this era in the Dutch history of bulbs was called "Tulip Mania".

Well, tulips may not be sold on the stock market any longer but they are certainly sold and shipped all over the world. The well known signs "Dutch Bulbs" are as familiar to us as those for Colonel Sanders' chicken outlets. Here in Ontario, bulbs can be planted from late September until well into November. The only restriction is that the deadline for daffodils and some narcissus varieties is the end of September. As long as you can dig a hole, you can plant any spring flowering bulb you like.

The advantage of spring flowering bulbs is that the majority bloom before the annuals even start. If you select the right varieties, you can enjoy your bulbs from the middle of April until the end of May. First to bloom are the snow drops followed by crocus, grape hyacinths, glory of the snow, early tulips, hyacinths, daffodils and narcissus until the late flowering tulips show at the end of May. You can also force your own bulbs inside which will give you flowers from Christmas until Easter. It was with all this in mind that we made our plans last winter to visit Holland during the spring festival of

flowering bulbs. As you arrive in Holland, you will see from your plane hundreds and hundreds of acres of flowers as one big carpet.

Our main visit last April was to the famous park, in the city of Lisse, called "Keukenhof", which translates to mean "kitchen garden". Many, many years ago herbs were grown in the garden and hunting took place in the kitchen of the famous castle. From this, according to the information from the Netherlands National Tourist office, comes the name. The Keukenhof is a floral paradise right out of a fairy tale. No painter could even come close to catching the abundant variety of colours.

The park is beautifully landscaped, covering an area of approximately 70 acres, planted with old mature trees high above the magnificent ponds and artificial lakes. Paths lead along millions of bulb flowers in full bloom. An old windmill stands on the park ground, and a glass house complex covering an area of about 1600 square feet has a famous covered garden. In this complex, over 500 different tulip species are on exhibit. Annexed to a new amaryllis glass house in a heath garden worthy of admiration.

Our impression was, as the Keukenhof brochure so well claimed it would be, of a true garden of Eden. Yes, it was one of the highlights of our trip. It is my wish that **Landscaping Ontario** in the future will organize a study trip to Europe with a visit to the Keukenhof. It would be an experience you would never forget. □



The Conservation of Energy in Housing

Central Mortgage and Housing Corporation

Natural Features and Landscaping

The natural features of a site — trees, shrubs, and other vegetation growing there; outcrops of rock and small elevations; and any surface water that is present — can be used to advantage to increase exposure of the building to solar radiation and daylight, and to provide protection from excessive heat, wind, rain, and snow. Similar benefits can be achieved through the addition of various architectural features, such as patios, walkways, fences, and screens. Through appropriate use of the natural and design potential of the site, the energy requirements of the dwelling can be substantially reduced.

Trees

Trees can have a direct and positive influence on the energy needs of a building through the moderating effect they have on climatic extremes. In summer, they lower free air or ambient temperatures by evaporative cooling and by absorbing and deflecting solar heat; in winter, they help to control falling temperatures by providing a wind-break and again by absorbing solar radiation.

Trees can also have a negative impact on the dwelling, if they obstruct its exposure to direct sunlight and daylight. The important consideration in planning the development of the site is the location of existing and newly planted trees in relation to the direction of

the sun and wind and in relation to the dwelling.

Deciduous trees are most beneficial when they are situated to the south, southeast, or southwest of the building (see Figure 2.3). At a height of 10-12 m (30-40 ft.), they will provide substantial summer shade for the surrounding land area; and taller trees will also shade the dwelling. In winter, when they have lost their foliage, they will permit penetration of direct sunlight to the building. Coniferous trees are best located on the north side of the dwelling, where they can provide shelter from northern winds. This protection is particularly important in the fall, winter, and early spring.

Because of the different purposes they serve in moderating the prevailing climate of a site, coniferous and deciduous trees can be used effectively in combination both to provide shade and windbreaks and to permit maximum penetration of sunlight and daylight. Figure 2.6 gives an example of landscaping arrangements that can help to reduce the energy requirements of a dwelling on the north side of an east-west street.

Shrubs and Ground Cover

Like trees, shrubs and ground cover (grass and small plants) also have the effect of lowering summer temperatures because they release into the air moisture that is stored in their foliage. The strategic location of such vegetation around the dwelling can create cooling breezes that will reduce the need for artificial

cooling. Figure 2.7 illustrates the effect of planting lawns and shrubs in the path of prevailing summer winds.

Vines

Vines grown against the walls of the dwelling can help to block out excessive solar heat in summer without interfering with winter exposure. They are particularly effective on a west wall that is exposed to direct sunlight during the hottest part of the day. Care should be taken, however, to plant only those varieties of climbing plant that will not damage the exterior of the building. Most vines, for example, will loosen the pointing of a masonry wall over time. A knowledgeable horticulturist can provide guidance as to the best species to select for a particular area.

Surface Water

Bodies of surface water on a site or adjacent to it can moderate its micro-climate. Ponds, streams, or neighbouring lakes will have a cooling effect in summer through the evaporation of moisture into a warm daytime atmosphere. A swimming pool on the site will produce similar modifications in the natural climate.

Architectural Features

A variety of architectural features may be incorporated into the design of a dwelling to increase the benefits of solar radiation and to promote cooling of the dwelling during the hot summer months. Some additions that can maximize the use

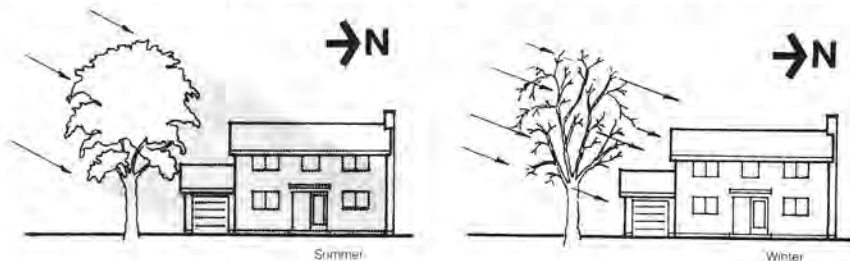


Fig. 2.3 Preferred location of a deciduous tree

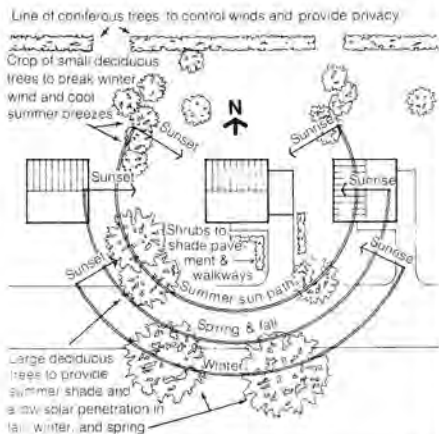


Fig. 2.6 Effective use of trees around a dwelling on the north side of an east-west street

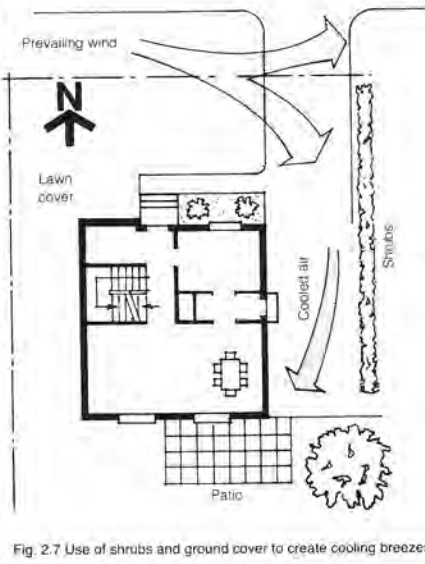


Fig. 2.7 Use of shrubs and ground cover to create cooling breezes

of sunlight during the heating season are sidewalks and patios. If they are constructed of light-coloured, heat-reflective material, they can divert solar radiation towards the building envelope. To prevent the accumulation of excessive heat in summer, small trees, shrubs, and plants can be added that will provide some shading.

Shading devices also can be added to the dwelling itself. In addition,

free-standing shading devices can be included, such as fences, surrounding walls, and sun screens. For optimum efficiency, fences and sun screens should be made of wood or similar heat-reflective material, should be light in colour to reflect heat and light, and should be of a louvred design to permit the flow-through of air and allow cooling of the adjacent area. Although their primary function is to shield

the dwelling from summer sun, they should be designed and positioned so that they do not block the penetration of sunlight during the heating season. □

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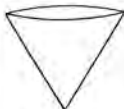
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question: I have a limited company, and wonder if I can have my company pay for my personal life insurance. Could you tell me if this is possible?

answer: The Department of National Revenue states that Group Life Insurance premiums can be paid by a company on its employees' behalf as long as the amount paid for coverage in excess of \$25,000 is included in his income for tax purposes. The Landscape Ontario Group Optional Life plan qualifies as a group contract, so the company can pay the premiums on your behalf. If you are in a 50% tax bracket, and paid \$400 annually for life insurance premiums, you would have to earn \$400. In effect, your life insurance costs you \$800. If your company pays the \$400, you need only pay tax on that amount. Therefore, your life insurance costs only \$600. This, coupled with the extremely attractive rates available through the Group Optional Life Plan results in substantial savings. I must stress that the D.N.R. states that this can be done with group insurance only. As long as you are an employee of your firm, you qualify.

question: What does accidental death and dismemberment coverage include?:

answer: The AD&D coverage is an amount equal to twice the life insurance benefit. If a covered person dies as a result of, and within, 365 days of an accident, his beneficiary will receive the benefit (called the principal sum) in addition to the life insurance benefit. The plan will also pay a portion of the principal sum for loss of limbs, etc. as follows:

- pays full amount of benefit if you lose two hands, two feet or sight of both eyes; or lose one hand and one foot, or one hand or foot and sight of one eye; or movement of both upper and lower limbs (quadraplegia); use of speech and hearing;

- pays ¾ of benefit if you lose either arm or leg or movement of both lower legs (paraplegia);

- pays ½ of benefit if you lose either hand or foot, sight of one eye, use of speech or hearing; or use of upper and lower limbs of one side of body (hemiplegia).

- pays ¼ of principal sum if you lose thumb and index finger or either hand.

question: If a doctor writes a prescription for a drug, is it not automatically covered?

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available only by prescription. I know of a case where a doctor suggested some Ora-jel for a teething baby, and wrote the name down so the mother would not forget. The mother then sent the bill and the doctor's note to the insurance company for reimbursement. The claim was declined. This is necessary because if the company paid for "over-the-counter" drugs, the premiums for coverage would have to be much higher.

question: *Recently, one of my men, while cutting our customer's lawn, accidentally ran over a neighbour's dog's paw. He had been chasing the noise of the lawn mower up and down the fence and barking and stuck his paws out under the cedar fence when the incident occurred. Would the veterinary bills be covered under the Plan and if so, would the \$250 property damage deductible apply?*

answer: Yes, the Comprehensive General Liability section of the Landscape Ontario Plan would cover the veterinary bills and the \$250 deductible would apply. Unfortunately, only bodily injury to people escape the deductible even though the neighbour might think his dog is almost human.

question: *I have a small lawn maintenance business and in the process of the past few years have accumulated lawn mowers, one tractor and an assortment of small tools. Can I get coverage under the Plan to cover me if my garage catches fire and equipment is damaged - to cover theft of my chain saw from my truck while parked at a customer's - if my trailer carrying my tractor is involved in an accident while on the way to a job?*

answer: All of the above incidents would be covered under the Equipment Floater section of the Landscape Ontario General Insurance Plan at a low rate. For example, in the case of the theft of your chain saw that you carried \$350 coverage on, you would be paid as follows:
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A newly created company called Gro-Bark (Ontario) Ltd. is now shipping naturally composted pine sawdust and bark throughout Ontario from its location in Northern Ontario.

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tario) Ltd., R.R. No. 1, Box 190, Claremont, Ontario L0H 1E0.

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David G. Pitt

Topic:

Save energy - plant a tree: a new market for the landscape industry

Mr. Pitt is an extension landscape architect with the Department of Horticulture, University of Maryland in College Park, Maryland. He will speak on residential landscape design for energy conservation and expects to deal with topics such as energy consumption in the home, human comfort as a determinant of energy consumption, landscape characteristics affecting human comfort, principles of design for maintaining human comfort in the landscape without fossil fuel consumption, application of design principles to temperate and cold climates, and selecting plant and construction materials for energy conservation.

A graduate of the University of Massachusetts with a Master of Landscape Architecture, Mr. Pitt has authored a considerable number of publications relating energy and land use. Some of these include:

- **Wind control in the residential landscape.** Maryland Nurserymen's News, November-December, 1977.
- **Selecting plant material for windbreaks.** Maryland Nurserymen's News, January-February, 1978.
- **Residential landscape design for wind control.** Landscape Design Facts, University of Maryland Cooperative Extension Service, 1978.

• **Plants for windbreaks.** Landscape Design Facts, 1978.

• **Using plants to conserve energy.** Maryland Nurserymen's News, January-February, 1979.

Among his current activities relating to energy and land use he includes the preparation of an annotated bibliography on energy conservation in landscape planning and design and the identification of tree species that are best suited for use in energy conservation.



William Flemer, III

Topic:

Where will Canadian Horticulture Go in the '80's?

A graduate of Yale University, Mr. Flemer holds a B.A. and M.S. degree in botany. He is a third generation nurseryman and is president of the Princeton Nurseries, Princeton, N.J. His particular interest is plant breeding and the genetics of shade trees. He is a past president of the American Association of Nurserymen, the Eastern Nurserymen's Association and the New Jersey Nurserymen's Association. He is a member of the Board of Directors of the Arnold Arboretum, Harvard University, a Fellow of the Royal Horticultural Society and a member of the Botanical Society of America and the American Horticultural Society. He is also a past president of the International Plant Propagators Society and the Chairman of the U.S. National Arboretum Advisory Council, Washington, D.C.

Mr. Flemer has published numerous articles and two books on trees and shrubs and has lectured extensively in this country and abroad on plant propagation, woody plant breeding and shade tree selection and use. Many of his introductions are among the most popular shade and flowering tree varieties in the nursery trade today.



D. (Des) Larmour C.R.S.P.

Topic:

Accidents Cost

At present, Mr. Larmour is the Regional Safety Officer, Airports and Properties division of Transport Canada, Ontario region.

Prior to entering the government service, he was a Safety Officer in private industry for over 20 years.

Mr. Larmour has served on the executive committee of the Industrial Accident Prevention Association, Ontario, north-west division, for many years. In 1972, he was chairman of the division.

He has been active in the Canadian Society of Safety Engineering and was its vice-president for two years. Mr. Larmour is a Canadian Registered Safety Professional. He is also a former secretary/treasurer, Peel and Dufferin counties, Mutual Aid Fire Services Association.

Speakers Offer Wealth of Experience



Robert F. Lederer

Through his work with the American Association of Nurserymen, the Society for a More Beautiful National Capital, the Washington Youth Gardens and other organizations, Mr. Lederer has distinguished himself as a prominent U.S. leader in behalf of environmental improvement and beautification.

He was a close ally to First Lady Mrs. Lyndon B. Johnson in her National Beautification Program during the 1960's. He serves as a committee member of the Lyndon B. Johnson Memorial Grove on the Potomac and continues to work closely with Mrs. Johnson.

During the Nixon administration, Mr. Lederer worked with First Lady Patricia Nixon, and on three occasions, Mrs. Nixon served as Honorary Chairman of the American Association of Nurserymen's National Landscape Awards Program with Mr. Lederer serving as master of ceremonies during presentations in the White House.

In 1965, Mr. Lederer became Executive Vice President of the American Association of Nurserymen. Since that time the membership has more than doubled and the budget has increased four times. He has pioneered the family form of association management, and is responsible for managing a number of smaller organizations. He serves as Executive Vice President of each association in the family.

They are: Wholesale Nursery Growers of America, Horticultural Research Institute, National Landscape Association, Garden Centers of America, National Association of Plant Patent Owners. He also serves

as a trustee of the AAN Group Insurance Trust which now amounts to more than \$1.25 million per year.

continued on page 26

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Get the Message?



R.M.C. King

Gain Division of Canada Packers in 1948, eventually becoming chief chemist. When this fertilizer business was sold to Genstar in 1967, he assumed the position of production manager. This entailed purchasing and quality control as well, and in turn, has lead to his present position of technical manager for the Turf and Garden Division.

Mr. King has retained his interest in Canada Packers Employees' Credit Union and is now serving as president. He is active as a lay preacher and choir member of the United Church of Canada. He has educated his five children in such varied careers as psychology, school teaching, theology, dentistry and journalism.

Association of Canada, where he is now executive secretary with his office in Toronto.



Ed Vanderkloet

Topic:

How to Sell Fertilizers Including Composition and Economic Trends

After graduating from the University of Toronto in physiology and biochemistry, Mr. King commenced his fertilizer career with the Shur-

Topics:

Adversaries or Associates?

Mr. Vanderkloet was born and raised in Amsterdam and emigrated to Canada in 1952. He worked in the chemical industry in Sarnia until 1966 at which time he joined the full-time staff of the Christian Labour

Mr. Vanderkloet plans to deal with the following points:

- trade unionism is an inevitable reaction against exploitation of workers in the past by employers;
- corporations often consider the enterprise as a piece of property with the purpose of making profits;

continued on page 28

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Arborvitae	Per 100	Per 1000	Mugho Pine Pumilio (Pinus mugho pumilio)	Per 100	Per 1000	Scotch Pine Scots Highland	Per 100	Per 1000
American Arborvitae (Thuja occidentalis)			(2-0) 1 to 3 ins.	18.00	90.00	(2-0) 1 to 3 ins.	16.00	80.00
(2-0) 1 to 3 ins.	\$ 18.00	\$ 90.00	(2-1) 1 to 3 ins.	45.00	225.00	(2-0) 3 to 6 ins.	18.00	90.00
(2-0) 3 to 6 ins.	22.00	110.00				(2-1) 1 to 3 ins.	45.00	225.00
(2-1) 1 to 3 ins.	33.00	165.00	Mugho Pine Tyrolean (Pinus mugho mughus)	16.00	90.00	(2-1) 3 to 6 ins.	50.00	250.00
(2-1) 3 to 6 ins.	38.00	190.00	(2-0) 1 to 3 ins.	50.00	250.00			
Fir			(2-0) 3 to 6 ins.	80.00	400.00	Scotch Pine Turkey	16.00	80.00
Concolor Fir (Abies concolor)			(2-0) 3 to 9 ins.	100.00	500.00	(2-0) 1 to 3 ins.	16.00	80.00
(2-0) 1 to 3 ins.	31.00	155.00	(2-3) 9 to 12 ins.	130.00	650.00	(2-0) 3 to 6 ins.	26.00	130.00
(2-0) 3 to 6 ins.	35.00	175.00				(2-0) 9 to 12 ins.	35.00	175.00
(2-0) 3 to 6 ins.	40.00	200.00	Ponderosa Pine (Pinus ponderosa)	14.00	70.00	(2-1) 1 to 3 ins.	45.00	225.00
(2-0) 6 to 9 ins.	40.00	200.00	(2-0) 1 to 3 ins.	16.00	80.00	(2-1) 3 to 6 ins.	50.00	250.00
(2-1) 1 to 3 ins.	35.00	175.00	(2-0) 3 to 6 ins.	16.00	80.00			
(2-1) 3 to 6 ins.	38.00	190.00	(2-0) 6 to 9 ins.	22.00	110.00	White Pine (Pinus strobus)	18.00	90.00
Douglas Fir Caesia (Pseudotsuga menziesii caesia)						(2-0) 1 to 3 ins.	23.00	115.00
(2-0) 1 to 3 ins.	18.00	90.00	Red Norway Pine (Pinus resinosa)	18.00	90.00	(2-1) 1 to 3 ins.	45.00	225.00
(2-0) 3 to 6 ins.	24.00	120.00	(2-0) 3 to 6 ins.	23.00	115.00	(2-1) 3 to 6 ins.	50.00	250.00
(2-0) 6 to 9 ins.	31.00	155.00	(2-0) 6 to 9 ins.	45.00	225.00			
(2-0) 9 to 12 ins.	38.00	190.00				Source		
Douglas Fir Glaucia (Pseudotsuga menziesii glauca)			Scotch Pine Austrian Hills	16.00	80.00	Alberta White Spruce (Picea glauca albertina)	14.00	70.00
(2-0) 1 to 3 ins.	18.00	90.00	(2-0) 1 to 3 ins.	18.00	90.00	(2-0) 1 to 3 ins.	14.00	70.00
(2-0) 3 to 6 ins.	24.00	120.00	(2-0) 3 to 6 ins.	26.00	130.00	(2-0) 3 to 6 ins.	20.00	100.00
(2-0) 6 to 9 ins.	31.00	155.00	(2-0) 6 to 9 ins.	45.00	225.00	(2-1) 1 to 3 ins.	35.00	175.00
(2-0) 9 to 12 ins.	38.00	190.00	(2-1) 1 to 3 ins.	45.00	225.00	(2-1) 3 to 6 ins.	42.00	210.00
(2-1) 1 to 3 ins.	55.00	275.00	(2-1) 3 to 6 ins.	50.00	250.00	(2-1) 6 to 9 ins.	52.00	260.00
(2-1) 3 to 6 ins.	60.00	300.00				Norway Spruce (Picea abies)	35.00	175.00
Pine			Scotch Pine Belgium	16.00	80.00	(2-0) 1 to 3 ins.	42.00	210.00
Austrian Pine (Pinus nigra)	14.00	70.00	(2-0) 1 to 3 ins.	16.00	80.00	(2-1) 1 to 3 ins.	52.00	260.00
(2-0) 1 to 3 ins.	14.00	70.00	(2-0) 3 to 6 ins.	18.00	90.00	(2-1) 3 to 6 ins.	60.00	300.00
(2-0) 3 to 6 ins.	16.00	80.00				Scotch Pine East Anglia	16.00	80.00
(2-0) 6 to 9 ins.	22.00	110.00	(2-0) 1 to 3 ins.	16.00	80.00	(2-0) 1 to 3 ins.	16.00	80.00
(2-0) 3 to 6 ins.	28.00	140.00	(2-0) 3 to 6 ins.	18.00	90.00	(2-0) 3 to 6 ins.	26.00	130.00
(2-0) 6 to 9 ins.	30.00	150.00	(2-0) 6 to 9 ins.	25.00	125.00	(2-0) 6 to 9 ins.	35.00	175.00
(2-0) 9 to 12 ins.	38.00	190.00	(2-0) 9 to 12 ins.	45.00	225.00	(2-1) 1 to 3 ins.	45.00	225.00
(2-1) 1 to 3 ins.	45.00	225.00	(2-1) 1 to 3 ins.	50.00	250.00	(2-0) 3 to 6 ins.	50.00	250.00
(2-1) 3 to 6 ins.	45.00	225.00	Scotch Pine French Green	14.00	70.00	(2-1) 1 to 3 ins.	42.00	210.00
Bristlecone Pine (Pinus aristata)	16.00	80.00	(2-0) 1 to 3 ins.	16.00	80.00	(2-1) 3 to 6 ins.	45.00	225.00
(2-0) 1 to 3 ins.	16.00	80.00	(2-0) 3 to 6 ins.	18.00	90.00	(2-1) 6 to 9 ins.	50.00	250.00
(2-1) 1 to 3 ins.	45.00	225.00				White Spruce (Picea glauca)	14.00	70.00
(2-1) 3 to 6 ins.	50.00	250.00	Jack Pine (Pinus banksiana)	22.00	110.00	(2-0) 1 to 3 ins.	14.00	70.00
Jack Pine (Pinus banksiana)	22.00	110.00	(2-0) 3 to 6 ins.	30.00	150.00	(2-0) 3 to 6 ins.	20.00	100.00
(2-0) 1 to 3 ins.	22.00	110.00	(2-1) 1 to 3 ins.	30.00	150.00	(2-0) 6 to 9 ins.	25.00	125.00
(2-0) 3 to 6 ins.	30.00	150.00	(2-1) 3 to 6 ins.	45.00	225.00	(2-1) 1 to 3 ins.	35.00	175.00
(2-0) 6 to 9 ins.	35.00	175.00				(2-1) 3 to 6 ins.	42.00	210.00
(2-0) 9 to 12 ins.	42.00	210.00						
(2-1) 1 to 3 ins.	45.00	225.00						
(2-1) 3 to 6 ins.	50.00	250.00						

Deciduous Shrubs

Dogwood Red Osier (Cornus stolonifera)	Per 100	Per 1000	Dogwood Silky Red Twig (Cornus amomum)	Per 100	Per 1000	Rosa Multiflora (Shrub rose)	Per 100	Per 1000
(1-2) 3 to 6 ins.	12.00	60.00	(1-0) 1 to 3 ins.	9.00	60.00	(1-1) 1 to 3 ins.	23.00	150.00
(1-0) 6 to 9 ins.	15.50	110.00	(1-0) 3 to 6 ins.	12.50	80.00	(1-1) 3 to 6 ins.	30.00	200.00
(1-2) 9 to 12 ins.	21.00	140.00	(2-0) 6 to 9 ins.	16.50	110.00	(1-1) 6 to 9 ins.	34.00	225.00
(1-2) 12 to 18 ins.	30.00	200.00	Oliver Autumn (Elaeagnus umbellata)	37.50	250.00	(1-1) 9 to 12 ins.	37.50	250.00
Dogwood Red Twig (Cornus alba)	9.00	60.00	(1-1) 3 to 6 ins.	45.00	300.00			
(1-2) 1 to 3 ins.	12.00	80.00	(1-1) 6 to 9 ins.	52.50	350.00			
(1-2) 3 to 6 ins.	15.50	110.00	(1-1) 9 to 12 ins.	60.00	400.00			
(1-2) 6 to 9 ins.	19.00	130.00	(1-1) 12 to 18 ins.	67.50	450.00			
			(1-1) 18 to 24 ins.					

Deciduous Trees

Linden Little Leaf (Tilia cordata)	Per 100	Per 1000	Mountain Ash European (Sorbus aucuparia)	Per 100	Per 1000	Tulip Tree (Liriodendron tulipifera)	Per 100	Per 1000
(1-1) 3 to 6 ins.	30.00	200.00	(1-1) 3 to 6 ins.	30.00	200.00	(1-0) 1 to 3 ins.	15.00	100.00
(1-1) 6 to 9 ins.	33.00	220.00	(1-1) 6 to 9 ins.	37.50	250.00			
(1-1) 9 to 12 ins.	37.50	250.00						
(1-1) 12 to 18 ins.	45.00	300.00						

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continued from page 26

- in such a concept the workers will always be outsiders, treated as mere cost factors;
- trade unions frequently alienate workers even further by aggravating the adversary system;
- in a Christian concept of labour relations, workers must be integrated into the enterprise as co-workers whose contribution is as valuable as that of management or shareholders;
- the marxist-anarchist option of workers' control (eliminate the managers) is an ideology based on a myth.



Larry Dworkin

Topic: Public Relations and Promotions Seminar

Larry Dworkin is President of Dworkin Communications Inc. in Montreal, but he has been assisting Continental Public Relations Limited this year as a special consultant.

Since his days as a financial reporter with The Globe and Mail, he has covered all aspects of public relations and promotion with major consulting companies as well as with his own agency founded in December 1979.

Mr. Dworkin's presentation topics include: public relations and how it works; getting to know the media and how to deal with reporters, identifying the information of interest to your different audiences and how to present it; successful promotions; community relations; keeping your customers happy; generating traffic; generating loyalty; using outside resources. □

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continued on page 46

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Tree Fertilizers

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Genstar Chemicals

Recent History

Early tree fertilizers took the form of agricultural grades. These tended to be high in nitrogen and low in phosphate with potash levels being determined by soil tests. Prior to mixed fertilizers, some fruit crops had been fertilized with individual fertilizer materials, such as ammonium sulphate and superphosphate.

This was not particularly beneficial to the landscape trade who had special problems with sick or dying trees and poor environmental situations to deal with e.g. excessive sidewalk and roadside damage from salt.

Because of the need to stress safety rather than just crop production, early tree fertilizers resembled high quality turf fertilizers. In our own company we manufactured a lawn fertilizer called "Turf Special". This fertilizer contained 75% of the nitrogen from urea formaldehyde sources, and all of the potash from sulphate of potash. Chemical nitrogen sources, such as urea and ammonium nitrate can "burn", as can muriate of potash. However, urea formaldehyde is a perfectly safe nitrogen source as is sulphate of potash for potassium. Thus these high quality lawn fertilizers were ideal if you desired to avoid burning damage. Perhaps it may be easier to explain this damage by using the term "salt damage" with which you are familiar. The two ingredients

mentioned have a low salt index. Because these turf fertilizers had grades such as 10-6-4, the numbers became copied by those seeking a cheap tree fertilizer, without realizing the safety benefit of the brand name product. Since 7-7-7 was also appearing on the home market as a cheap fertilizer this grade also was used for tree fertilization. Experience with orchard crops as well as horticultural practices showed that the cheaper product could be applied safely if bare roots were not contacted, and if the trees were healthy to start with. In addition, the soil had to be of a low soluble salt content.

However, recent research has pointed out the NPK is not enough for top fruit production or healthy growth of woody plants.

Many agricultural colleges discovered the need for iron and zinc in tree growth. Others identify manganese and boron as being equally necessary. The secondary elements such as sulphur and magnesium were long known to have benefit, but these were present in the old days of granulated fertilizers. With the advent of bulk blending, magnesium and sulphur were no longer included in the fertilizer, unless by deliberate intention. Thus it is now necessary to formulate a product to include all of the secondary and trace elements. Some consideration should also be given to the safety factors mentioned earlier.

New Products

14-7-14 - This fertilizer will have a base of organic nitrogen for safety, as well as guaranteeing the secondary and micro nutrients as follows:-

Magnesium	1.0%
Sulphur	5.0%
Iron	1.0%
Zinc	0.08%
Manganese	0.08%
Copper	0.05%
Boron	0.02%
Molybdenum	0.0005%

Since some forms of trace elements (micro nutrients) can be toxic to young plants especially seedlings, they should be incorporated as frits. A frit is a slowly available source being released over the growing season and thus avoiding toxicity problems.

As you can imagine, these ingredients cost more money than just cheap NPK fertilizers, but where valuable shade trees and fruit trees are involved are well worth the extra money. Winter hardiness and disease resistance are two benefits resulting from such a balance of nutrients.

There are two methods to apply such a tree fertilizer. The traditional drip line feeding is still the most effective. Punch holes with a crowbar, small auger or golf course cup cutter about 1-2 feet apart under the drip line. Of the three, the cup cutter is preferred as it restores the turf and eliminates surge spots. They
continued on page 40

SENSATION LEAF BLOWER VAC

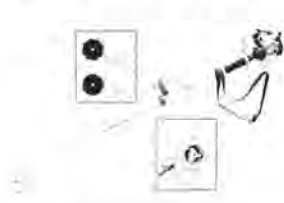


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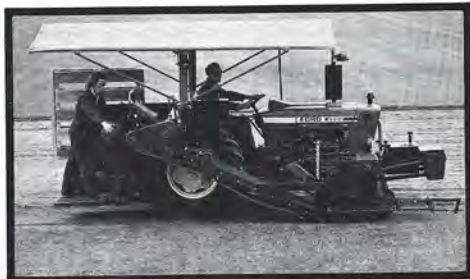
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INDUSTRY ACTIVITIES

Ag-Turf Chemicals established

Rod Hermitage has recently resigned from Green Cross Products in order to establish a new company called Ag-Turf Chemicals Inc. Ag-Turf Chemicals will aim to service specialty markets, including seed treating and the turfgrass markets exclusively. It will represent Uniroyal Chemical and W.A. Cleary Chemical Corporation throughout the Canadian market place.



Rod Hermitage

Staalduinen Named General Manager, Ball Superior

Max O'Brien of Ball Superior, Ltd., a subsidiary of Geo. J. Ball, Inc., recently announced the promotion of Ray Staalduinen to the position of General Manager and Chief Operating Officer of the Mississauga, Ontario, facility.

Mr. Staalduinen joined the Ball Superior organization in 1973 as Sales Manager. His entire career has been spent in horticulture, including experience in mum production, horticultural sales and management of horticultural wholesale op-



Ray Staalduinen

erations. Mr. Staalduinen is a Director-at-large of the National Board of Flowers Canada, a Director of Bedding Plants, Inc., for the Canadian region and Secretary-Treasurer of the Canadian Greenhouse Conference.

Max O'Brien will assume new responsibilities as Chairman of the Board of Ball Superior. His extensive horticultural background spans over 50 years of management experience in the Canadian horticultural industry.



Max O'Brien



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New Post for Landscape Planner

Mine Waste Reclamation Ltd. President Edward M. Watkin has announced the appointment of Mr. Harold C. Spence as Manager of Technical Development.

A graduate of the Niagara Parks School of Horticulture, Mr. Spence brings more than 30 years of both private and government experience in land management and environmental control to his new position.

Mine Waste Reclamation Ltd. specializes in the establishment of grasses and legumes on mine trailings, rock wastes, subsoils and other disturbed land areas and on most inaccessible sites. The company provides technical services to government agencies and private companies by supervising and guiding the reclamation of mine waste through revegetation.

Mr. Spence will be responsible for marketing new methods of erosion control, species selection and hydro-seeding techniques in Canada and the United States.



Harold C. Spence

continued on page 34

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Oseco appointments

Oseco Inc., Brampton, Ontario, recently announced the following appointments: Zeb Talach as Sales Manager, Robert Thom as Manager -Wholesale, Domestic and International, and Judy Stewart as Head Analyst of their Seed Testing Laboratory.

Mr. Talach had previously worked at Pfizer C & G Inc. where he held a number of management positions in

their agricultural chemical and seed corn business.

Mr. Thom will be based in Brampton and has some 17 years' experience in the seed trade in Scotland, Australia and Canada.

Ms. Stewart, formerly a senior analyst at the New Zealand Government Laboratory in Palmerston North, has since passed the Canadian Government Senior Examina-

tion in seed testing, enabling her to become a senior member of the Commercial Seed Analyst Association of Canada.

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Zeb Talach



Robert Thom



Judy Stewart

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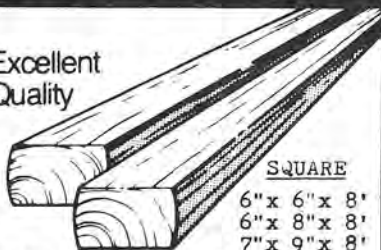
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Manderley Sod

Overwintering Nursery Container Stock Under Polystructure and Blanket Protection

By

Dr. Calvin Chong
Department of Plant Science
Macdonald Campus of McGill University
Ste-Anne-de-Bellevue, Quebec

and

Dr. R.L. Desjardins
Agrometeorology Research Service
Land Resource Research Institute
Agriculture Canada, Ottawa

Research we initiated at Ottawa to evaluate and to introduce new methods of protecting container nursery stock during the winter has generated much interest. Over the years we have communicated our results to the nursery community at various conferences and in relevant trade and scientific journals (1,2,3,4,5,6,7).

During the winter of 1975-76, we initially evaluated two types of unheated plastic structures and compared their effectiveness with that of the structureless thermoblanket (Microfoam) technique. In fact, as a result of this test, we demonstrated that the thermoblanket technique has relevance for nursery application in Canada. The response from members of the nursery-landscape community, extension specialists, and researchers from across Canada and the U.S.A. have been very encouraging. Tests have since been conducted or are being planned in other areas across Canada including Nova Scotia, Ontario, Alberta and British Columbia. Several nurseries, to our knowledge, have used it.

At a Landscape Ontario Congress (4) and at a Journ e Horticoles Ornamentales Conference, Ste-Hyacinthe, Quebec (6), we indicated the initiation of a large-scale testing program in which we were comparing a total of 19 different overwintering environments. This trial conducted during the winter of 1976-77 included a total of 4000 container plants, over 600 of which were generously supplied by the McConnell Nursery Co. Ltd., Port Burwell, Ontario. Notwithstanding Dr.

Chong's appointment in 1977 at Macdonald College, McGill University, we have continued over the years to analyze the large amount of data gathered and stored in our computerized data bank. We wish to summarize our results to the nursery trade.

Experimental Procedure

In this trial, we monitored air and container soil temperatures of the overwintering environments using two automated data loggers. As illustrated in Figure 1, there were: six modified environments under a conventional single-layer quonset structure (E_1 to E_6); six under a double-layer Filclair (now Great Northwest Greenhouses, Goodwood, Ontario) structure (E_7 to E_{12}); six under various structureless, blanket protection (E_{13} to E_{18}); and an unprotected control with container plants standing upright without artificial protection (E_{19}). The roof of the polyhouses or external cover (clear plastic overlay) of all protected environments were shaded with white latex paint since this is beneficial in moderating temperature fluctuations.

Under Plastic Structure. Each polyhouse was sub-divided into three sections, separated by twin polyethylene-covered wooden partitions with tightly fitting doors. During the third week of November 1976, similar groups of plants with a wide assortment of species in 9- or 18-litre containers were placed upright in each environment. Within each group, there were four indicator cultivars, with three plants of each in every environment (Table 1).

Although there was an assortment of a least 10 other species (including over 20 other cultivars), sufficient numbers of these were not available for evaluation in all 19 environments.

During the first week of December, the middle section of the polyhouses were fitted under the roof with a layer of air bubble-type plastic AirCap Insulation (1.5-m wide, D-240-48; Sealed Air of Canada Ltd., Montreal). Groups of plants on the left in each polyhouse section (E_1 , E_7 , and E_{13}) in the single-layer polyhouse and E_5 , E_9 , and E_{11} in the double-layer polyhouse) were covered with extra over-the-canopy Microfoam insulation (6.5-mm thick, 3-m wide; Casselman Co. Ltd., Toronto)¹ consisting of two 1.5-m wide strips taped together with masking tape and held in place near ground level with a string around each group of plants. The extra over-the-canopy Microfoam was removed on March 21, 1977. Throughout the winter, snow was swept from the roofs of polyhouse sections adjacent to the roadway (enclosing E_5 , E_9 , E_{11} , and E_{13}) (Fig. 1). The polyethylene from ends and subdivisions of both polyhouses was removed on April 10.

Under Blanket Protection. Plants under blanket protection (E_{13} to E_{18}) were laid on their sides on the ground, tightly packed 3 or 4 abreast in 18- or 9-litre containers, respectively. Plants in E_{13} and E_{18} were

¹ For more information on Microfoam contact: Dufoam (Canada), 920 Alness St., Downsview, Ontario, M3J 2H7.

covered with a layer of 1.5-m wide Microfoam overlaid with 8-mil polyethylene, to prevent weathering and tearing of the Microfoam; those in E₁₆ and E₁₇ with 1.5-m AirCap and polyethylene; and those in E₁₅ and E₁₈ with polyethylene only. The edges of the blanket covers and polyethylene were sealed to the ground with soil. On April 10, 1977, the blanket protection was lifted and plants were placed upright, watered, and further protected with snow fence material for one week because of potential risk of cold damage at this time.

Environment and Plant Evaluation

The average and extreme minimum air temperature(s) recorded in the various environments in January, 1977, are shown in Figure 1. These indicate the relative effectiveness of the various environments in modifying the minimum air temperature. In comparison with the more moderate temperatures recorded in environments with snow

cover both under plastic structure and under blanket cover, there were more extreme minimum air temperatures in environments without snow cover. In fact, as shown by the postwinter storage conditions of the four indicator cultivars in Table 1, all environments with snow cover under plastic structure or under blanket protection provided relatively good winter protection. *Taxus media* 'Brownii' showed more damage than the other cultivars.

While there was little or no difference in the protective advantage between the single-layer and the double-layer structure and use of under-the-roof AirCap plastic, there was still a measurable difference of temperature which could be significant some years. The extra over-the-canopy Microfoam contributed a very significant protection, that is 3 to 6°C. It was particularly beneficial under plastic structure for environments without snow cover (E₈ and E₁₁). Note that E₁₈, which is only a shaded (white) plastic overlay, gave good protection because of the ex-

cellent snow cover, that is, greater than 10 cm during most of the winter under study.

Studies have indicated that excessive build-up of heat which occur during sub-freezing temperatures accompanied with sunshine is a major and frequent cause of desiccation or leaf burn. Under such conditions, leaves may warm up but stem or container soil remain frozen thus preventing movement of water to the plant tops. The environments without snow cover under plastic structure (E₈ and E₁₁) and under blanket cover (Microfoam + polyethylene overlay, AirCap + polyethylene overlay, and polyethylene overlay) largely reflected this situation, providing evidence that damage to plants in some winter environments may be due to factors other than to low temperatures. In the case of AirCap + polyethylene overlay (E₁₁), this situation was most exaggerated and injury was more pronounced than in all other protected environments without snow cover (E₈ and E₁₁). However, it is recommended that this cover be applied and kept on only during the coldest months.

Application of Our Research to Specific Areas

Container nursery stock is overwintered in many different environments. Removing the snow cover from certain environments allowed us to generate a set of conditions which exist in certain locations across Canada in certain years. For instance, many regions of Ontario and Quebec have experienced a virtually snow-less winter in 1979-80, an occurrence that is unusual in this region. Based on this study at one location and environmental data for many years for various locations, these results can be used to extrapolate the findings on these 18 environments for the whole country. For example, in Figure 2, we have indicated the minimum air temperature we would observe under extra-over-the-canopy Microfoam cover in a single layer polyhouse less than 1 percent of the time. The temperature is likely to be warmer in regions with a more consistent snow cover. The information required to estimate the temperature for the other environments indicated in Figure 1, was presented in a recent publication (8). This should serve as an indicator of what overwintering environments are likely to be successful in different locations across Canada.

continued on page 38

Overwintering Environment		<i>Juniperus chinensis</i> 'Pitzeriana'	<i>Thuja occidentalis</i> 'Little Champion'	<i>Thuja occidentalis</i> 'Fastigiata'	<i>Taxus media</i> 'Brownii'
No.	Description				
Single-layer Polyhouse					
E ₁₁	Snow cover, Microfoam canopy	5.0	5.0	5.0	4.5
E ₁₂	Snow cover	5.0	4.8	4.9	4.0
E ₁₃	Snow cover, Microfoam canopy, under-the-roof AirCap	5.0	4.8	5.0	4.0
E ₁₇	Snow cover, under-the-roof AirCap	5.0	4.9	5.0	4.5
E ₁₈	No snow cover, Microfoam canopy	5.0	4.7	4.7	4.0
E ₈	No snow cover	4.5	4.6	4.0	3.6
Double-layer Polyhouse					
E ₉	Snow cover, Microfoam canopy	5.0	5.0	5.0	4.7
E ₁₀	Snow cover	5.0	4.5	4.8	4.3
E ₆	Snow cover, Microfoam canopy, under-the-roof AirCap	4.8	4.1	4.5	4.5
E ₁₅	Snow cover, Microfoam canopy	4.7	4.3	4.8	3.7
E ₁₆	No snow cover, Microfoam canopy	5.0	4.8	4.6	4.2
E ₁₄	No snow cover	5.0	3.3	3.8	4.3
Structureless Blanket					
E ₁₂	No snow cover Microfoam + polyethylene	4.8	4.2	4.2	4.2
E ₁₄	No snow cover, AirCap + polyethylene	3.0	2.0	1.5	2.6
E ₁₃	No snow cover, polyethylene	4.0	3.6	4.0	3.2
E ₁₆	Snow cover, Microfoam + polyethylene	4.8	4.5	5.0	4.4
E ₁₇	Snow cover, AirCap + polyethylene	5.0	4.0	4.4	4.5
E ₁₁	Snow cover, polyethylene	4.8	4.7	4.8	4.1
Control					
E ₁₈	No artificial cover	2.7	2.8	2.7	0.3

Table 1

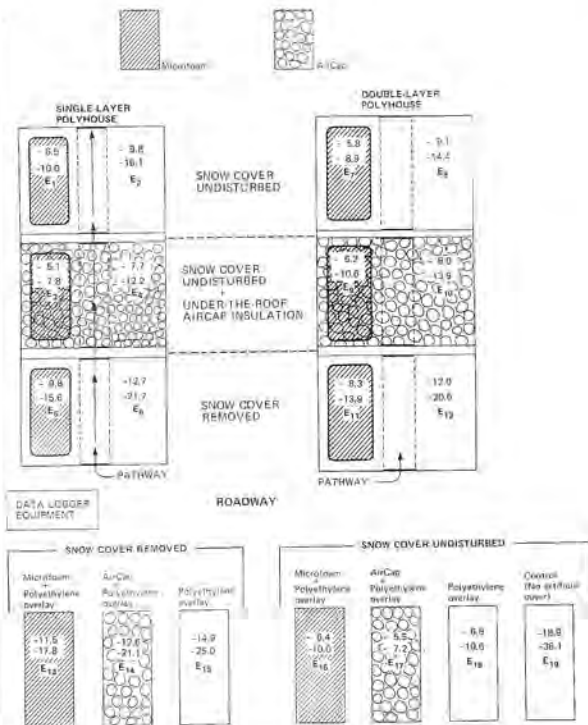
Post-winter storage condition of indicator plants (three per cultivar) measured on a scale 0 (dead) to 5 (excellent) at the end of May 1977.

continued from page 37

The success of this research program is to a large extent attributed to those in the nursery community who over the years contributed materials to this program. It is noteworthy that in related investigations, one-year-old containerized plants of *Cotoneaster dammeri* and Hetzi juniper packed in a cold frame, covered over with snow fence and with Microfoam + polyethylene overlay on top, survived the winter of 1976-77 in excellent condition. Flats containing freshly rooted cuttings of various sorts in small peat pots also were successfully overwintered in some of the above environment, but more research of this type is required. We hope that this report will be helpful in encouraging future work in this direction. □

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AVERAGE AND EXTREME MINIMUM AIR TEMPERATURE (°C) IN JANUARY 1977 AT OTTAWA IN THE VARIOUS OVERWINTER STORAGE ENVIRONMENTS.

Fig. 1. Diagrammatic representation and layout (not to scale) of the various overwinter storage environments studied during the winter of 1976-77.

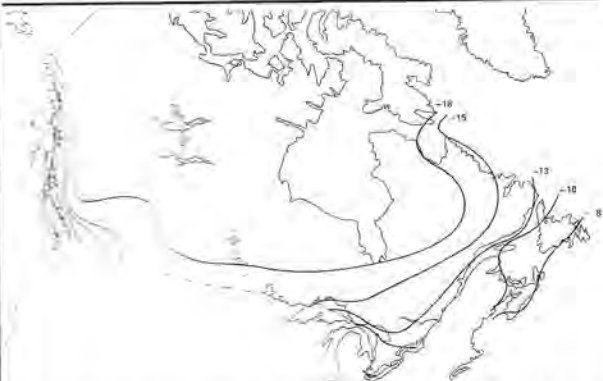


Fig. 2 Isotherms (1% lines) for air temperature in a single-layer polyhouse without snow cover but with extra over-the-canopy Microfoam cover (E₄).

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continued from page 30

should be at least 3 to 6 feet from the tree trunk. Apply half a pound per inch of trunk diameter. Young trees should have holes approximately 6" to 1 foot deep, and large trees 12 to 18 inches deep. Some experts dig their holes in the pattern of an eight to twelve pointed star (16 to 24 holes, depending on tree size).

If a mineral or "burning" type of fertilizer is to be used, pre-mix the fertilizer with sand, peat moss or top soil. With a non burning (i.e. slow release) type of fertilizer, apply at the hole bottom and cover with sand or top soil.

Broadcasting the fertilizer over the turf and under the branches will definitely give a response, and is the second application method used. However, arborists still prefer the drip line technique described above.

The high nitrogen grades such as 14-7-14 should be applied in spring, but are safe in early September. Later fall application of a low N high K₂O grade such as 4-9-15 are still safe until freeze up.

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Some of the tree companies have been developing an injection technique for getting the fertilizer into the root zone using a liquid feeding needle. At first soluble fertilizers were used, but some of these were burning due to the nature of the salts used. More recently, using Nitroform Powder Blue and non burning soluble ingredients, safe but effective compromise products are now available. One such tree food is 27-10-13 with 70% of the nitrogen derived from powder blue which is a UF source. Potash can be from either potassium nitrate or potassium phosphate, both of which are soluble but safe. For custom work chelated micro nutrients are added depending on the soil tests. This fertilizer resembles the original turf special in being safe but with ratios more suitable to trees.

One difficulty with all safe, injectable formulae is the slow N release rate. This is caused by bacterial action. In the case of UF. Cooler temperatures and less aeration at the injectable depth can slow down the bacterial action. Thus sometimes it takes up to two years to see the full benefits from an injectable program.

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The author would like to thank Mr. Robert Emond for field research used in the preparation of this article.



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In 1980, 35 years after Canadian forces marched across what were

the soggy fields of Holland, the Dutch are saying thank you.

In May of this year, approximately 2000 Canadian veterans visited Holland on the invitation of the Dutch. They were only a small part of those who fought for the liberation of Holland. For veterans who could not come, the Dutch are sending parcels of 50 tulip bulbs each. In addition to the parcels being sent for the veterans, cities and towns are contributing tulips as well. More than 500 communities in Canada

will receive parcels of 1000 tulips each totalling about 1.5 million bulbs to be distributed throughout Canada.

Many Dutch villages have chosen counterparts in Canada to which they are sending tulip bulbs. Amsterdam, for instance, is the twin city of Toronto, and last spring, as a prelude to plantings throughout Canada, 3000 red, white and blue hyacinths bloomed in Nathan Phillips Square. Photos below tell the story. (photos by Malak) □





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Growers Group Tour Proves Industry Alive & Booming

By D. Burke McNeill

Over 65 nurserymen attended the Landscape Ontario Growers Group's annual nursery tour held on Thursday, September 18, 1980, in the Bowmanville-Newtonville area.

The group congregated at Brookdale-Kingsway Nursery, Bowmanville, in the morning and was conducted on a tour of the propagation areas and storage buildings by Manager Peter Hill-brich and his staff.

Following lunch, which was hosted by Brookdale-Kingsway Ltd., the participants boarded buses, provided by Sheridan Nurseries Ltd., and toured Brookdale-Kingsway's Newtonville farm. Brookdale-Kingsway is specializing in deciduous trees and shrub production and has developed machinery and production techniques that make their operation very efficient.

Sheridan Nurseries Limited's Newtonville farm was the next visit. Sheridan has developed this farm for the production of deciduous trees and the group was impressed

with the quantity and quality of the stock being produced.

It was a very interesting and productive day for the participants and one of the interesting observations was the youthfulness of the group. The large majority of those attending were young people and it is a sign that this industry is alive and

booming.

The executive of the Landscape Ontario Growers Group is grateful for the good attendance and is especially grateful for the hospitality provided by Brookdale-Kingsway Limited and Sheridan Nurseries Limited which made the day a tremendous success.



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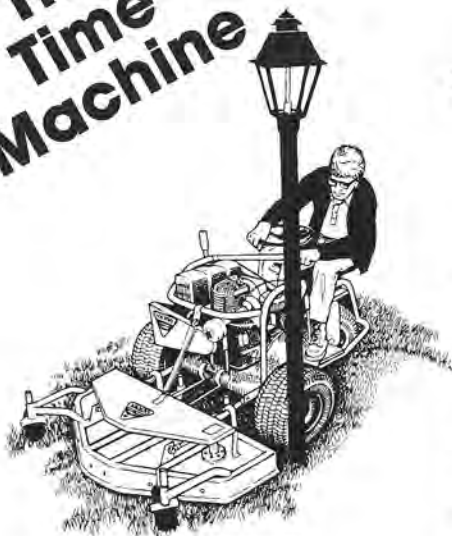
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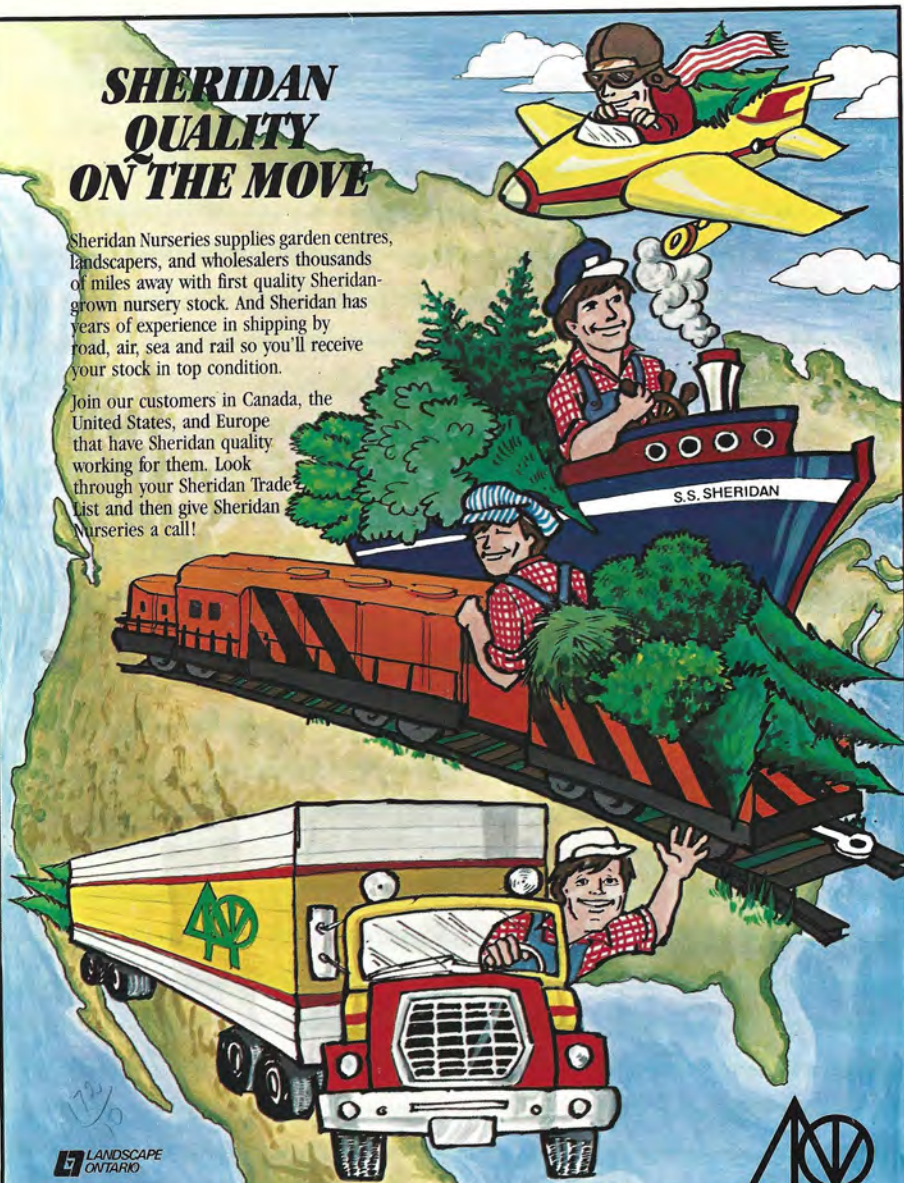
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