SOME GUYS HAVE ALL THE LUCK

Henry Bass accepting the T. A. Weston Award for the best Commercial Exhibit of cut flowers at the Philadelphia Flower Show. The award was given to Roses, Inc. and was staged by George Robertson & Sons. Presenting the trophy was Miss Barbara Bass, Henry's daughter.
EDITOR'S NOTE

The complete list of contributors to the 1969 Dillon Research Fund was published in the January, 1970 PFG Bulletin. Because of the length of this list, 13 names were listed on a separate page. Unfortunately, some of our readers may have missed the last few names because of their position in the bulletin (pages 2 and 9).

To be certain that everyone who contributed to the 1969 Dillon Research Fund be recognized, the complete list has been reprinted in this issue on pages 4 and 5.

Again, may we express our sincere thanks for your support of the Dillon Research Fund and the research that it makes possible.

YOUR EDITOR

GREENHOUSE CLIMATE CONTROL HANDBOOK AVAILABLE

The most advanced information concerning new concepts in heating, cooling and ventilation of greenhouses is comprehensively presented in, “The Greenhouse Climate Control Handbook”, a new technical publication just released by Acme Engineering and Manufacturing Corporation of Muskogee, Oklahoma.

Authoritatively prepared and written by Norman D. Augsburger, Hoy R. Bohanon and James L. Calhoun, nearly all phases of creating adequate environment for optimum plant growth are specifically covered in this 32 page handbook.

Following a very informative introduction to the fundamental principles of greenhouse thermodynamics, psychometrics and aerodynamics; equipment and design techniques for cooling, ventilating and heating system layouts and their controls are thoroughly explained.

The data and procedures recommended are based on actual results obtained over the past fifteen years by Acme engineers Augsburger, Bohanon and Calhoun, from their research and development projects in the interest of all-season climatic stabilization for professional horticulturists.

Copies of “The Greenhouse Climate Control Handbook” may be obtained by writing to Acme Engineering and Manufacturing Corporation, P.O. Box 978, Muskogee, Oklahoma or by contacting the Acme representative in your area.

CONTROLLING WHITE FLY

KARL NISSILA
Hancock, Michigan
Reprinted from Michigan Florist

This spring a number of the growers have been fighting a losing battle with the pesky white fly. We’d like to review the life cycle to point out the importance of the control measures you are using.

LIFE CYCLE: Adults lay eggs within a few hours after becoming an adult. Work at U.S.D.A. has shown that the white fly responds to temperature and at 70°F the life cycle can be completed in 29-40 days. This means that control measures must be very strictly timed in order to achieve any kill.

CONTROL MEASURES: Clean up, throw out, get rid of the weeds in the greenhouse. After the bedding plant season is finished, discard the old plants—especially if white fly has been a problem.

Insecticides—Vapona aerosol every 5 days and continue for 4 to 5 weeks to control the pest. Vapona aerosol will give some residual effect for the adults and nymphs.

Vapona concentrate can be soaked into ground comcobs or coarse vermiculite, and the mixture is then hung in the greenhouse. What you actually are doing is to make your own plastic or resin strips.

Vapona is very volatile and the fumes are given off for about two weeks. This means that the cobs or vermiculite will have to be recharged with Vapona.

Use one ounce of the Vapona concentrate per 1000 cu. ft. of greenhouse area: To prepare the mixture, dump part of the cobs or vermiculite in a wide-mouth gallon glass bottle add some insecticide, shake and repeat the process until both materials are thoroughly mixed. Dump the Vapona treated cobs or vermiculite into a porous netting type container, such as a plastic window screen or an old nylon stocking.

Suspend the material over the plants, only after working hours. The reason for the 5 P.M. to 8 a.m. hours is that Vapona is very volatile and at high temperatures it will be wasted out the vents. Store the plastic bag in a tight metal or glass container. Don’t use a plastic bottle as the fumes can go through the plastic.

PENNSYLVANIA FLOWER GROWERS BULLETIN 229 APRIL, 1970

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THE LATEST ON . . .

PLANT DISEASES

Les Nichols
Plant Pathology Extension

PREVENTING BOTRYTIS BLIGHT ON GERANIUMS

Growers who have not already spaced their geraniums after moving out the Easter pot plants should do so at once. During the spacing operation be sure to remove all old yellow or injured leaves. The Botrytis fungus may become established on these leaves and during periods of cloudy wet weather may invade the stems and render the plants unfit for sale. Continue weekly applications of Termil or Exotherm Termil to maintain a protective coating of fungicide on the rapidly developing leaf and stem tissue so that Botrytis spores coming in contact with the plants will be killed before infection can take place. Some growers cannot use the Termil fungicides due to the presence of Termil sensitive crops growing in the same house with the geraniums or because of a relatively small number of geraniums being grown in a large volume greenhouse. They should use weekly sprays of Daconil 2787 to prevent Botrytis infection. Daconil 2787 contains the same fungicide ingredients as the Termil materials. It is a wettable powder formulation designed to be applied as a spray.

DAMPING-OFF AND THE USE OF FUNGISTATIC DRENCHES

If all of the recommendations aimed at the prevention of damping-off have been followed this disease should not be a problem at this time. However, growers are only human and they still continue to place steamed soil in unsteamed flats, they forget to hang the end of the watering hose up off the walks, and they still insist on watering the flats of seedlings in the evening. Consequently it is not unusual to find damping-off occurring in flats of bedding plants now. The further spread of the damping-off in the flats may be prevented by the use of fungistatic drenches such as captan, Terraclor, or Dexon or combinations of captan and Terraclor or Terraclor and Dexon. Remember, however, that these materials used in this manner act as fungistats and not as fungicides. This means that they do not kill the damping-off fungi but merely suppress their growth and hinder their spread to healthy plants in other parts of the flat. Depending on the material used the fungistatic action will disappear in a short time and the fungus will resume its spread through the soil. Terraclor is a rather persistent material and one application will last until the plants have matured to the point where they are not so susceptible to damping-off. Captan and Dexon are less persistent in the soil and drenches may have to be repeated every 2 weeks until damping-off no longer is a problem.

WATCH FOR GARDENIA CANKER

If dead branches appear on potted gardenia plants, cankers formed by the Phomopsis fungus may be present on the stems where they join the main stem or on the main stem at or just above the soil line. The cankers are enlarged corky areas containing longitudinal cracks (Fig. 1). Cutting into the corky tissue of the surface of the canker will show bright yellow or orange tissue underneath. Severely affected plants should be destroyed. If only one or two cankers are present on smaller branches well above the soil line they may be pruned two or three inches below the canker. The (continued on page 7)
OUR THANKS
AND APPRECIATION
FOR YOUR SUPPORT

Allyn & Allyn, West Palm Beach, Florida
Anderson's Greenhouse, Franklin
Geo. J. Ball, Inc., West Chicago, Illinois
Blind's Flowers, Pittsburgh
Brighton By-Products Co., Inc., New Brighton
Bryfogle's, Inc., Muncey
Bresch Greenhouses, Pittsburgh
Buzas Greenhouses, Easton
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Drayer Florists & Greenhouses, Reynoldsville
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Kuhl's Flowers, Mansfield
Herman Lederer Sons, Parker Ford
S. Loehr & Son, Pittsburgh
Linn C. Longenecker, Manheim
Robert J. Loughead, Warmister
Martin's Flowers & Greenhouses, Galax, Virginia
J. H. Marx, Mendenhall
Warren L. Mathies, American Can Co., Hershey
May Greenhouses, Encinitas, California
McCurio Florists, Inc., Pittsburgh
McFadden Greenhouses, Inc., Oxford
Mercer Greenhouses, Inc., Fredonia
Henry F. Michell Co., King of Prussia
Paul H. Mikkelsen, Henry F. Michell Co., King of Prussia
Clint Miller, Allentown
Miller's Greenhouse, Landisville
Miller's Wholesale Florists, Altoona
Nace's Greenhouses, Perkasie
Nevill's Flowers, Montoursville
Niessner's Flowers, Johnstown
Northwest Pennsylvania Florist Association, Grove City
Oelschig's Nursery, Inc., Savannah, Georgia
Oglee Floral Company, Connellsville
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H. Stanford Roberts, Newtown
Robinson's Greenhouse, Philadelphia
Rough Bros, Inc., Cincinnati, Ohio
Royer's Flower Shop, Lebanon
CARNATIONS

LESTER P. NICHOLS AND PAUL E. NELSON
Department of Plant Pathology
The Pennsylvania State University

PRODUCTION PRACTICE

I. Preparation for Planting
A. Remove and destroy large roots, stems, and other debris of previous crop. Prepare soil for planting, adding sphagnum peat moss or other amendments.
B. Clean all soil from hoses of the Gates watering system and tie above benches clear of steaming operations (check with supplier, some plastic hose can be left in place during steaming). Before reuse, wipe well with LF-10 1:200, Roccal, or Hyamine 2389. Hurdles which cannot be steamed should be cleaned of soil and wiped with the LF-10, Roccal, or Hyamine 2389.
C. Place planting tools and hurdles on bench, cover bench with steam cover, and steam-treat at 180°F for ½ hour at coolest point.

To Control
Fusarium Wilt
Bacterial Wilt
Rhizoctonia Stem Rot
Fusarium Stem Rot
Alternaria Leaf Spot and Branch Rot
Rust
Greasy Blotch
Bacterial Slow Wilt or Stunt

II. Planting
A. Purchase pathogen-free rooted cuttings from a specialist propagator.
B. Plant directly from shipping container into production bench.
C. Wash hands thoroughly before planting rooted cuttings or pinching young plants. Rinse hands in LF-10 1:200 (3 oz./5 gal. Water).
D. Hang watering hose so that nozzle does not touch floor.

To Control
Fusarium Wilt

III. Growing Plants
A. 1. Seven to 10 days after planting, drench as required with TERRACLOR 75% WP (1/4 lb./100 gal. water, applied to 400 sq. ft. of bed) (one application only).
2. Two to 3 weeks after planting, drench lower portion of plants with FERBAM 76% WP plus CAPTAN 50% WP (1/6 lb. of each per 100 gal. of water). Applied to 400 sq. ft. of bed.
B. Spray, covering leaves and stems, on a 7-14 day schedule alternating between CAPTAN 50% WP (1 1/2 lb./100 gal.) and ZINEB 75% WP (1 1/2 lb./100 gal.). If spray droplets do not spread evenly over foliage, add wetting agent to the spray tank until even coverage is obtained. Do not overspray; spray only until the suspension begins to drip from leaves.

To Control
Rhizoctonia Stem Rot

PLANT DISEASES

(continued from page 3)

To Control
Fusarium Wilt
Alternaria Leaf Spot and Branch Rot
Rust
Greasy Blotch

IV. Flowering
A. When flower buds begin to show color, vent and heat until after sun down. This is particularly important during Spring and Fall.
B. Mist spray flowers on a 3-7 day schedule with CAPTAN 50% WP or ZINEB 75% WP (V2 lb./100 gal.).

To Control
Botrytis Petal Blight

V. Flowering
A. Control measures for flower rots in storage or shipment must be applied in the greenhouse. Before cutting flowers, mist spray with CAPTAN 50% WP or ZINEB 75% WP (1/2 lb./100 gal.).

To Control
Botrytis Petal Blight

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PROGRAMMED DISEASE CONTROL

CHRYSANTHEMUMS-GREENHOUSE CUT FLOWERS

LESTER P. NICHOLS AND PAUL E. NELSON
Department of Plant Pathology
The Pennsylvania State University

PRODUCTION PRACTICE

I. Preparation for Planting

A. Hang hose nozzle so that it does not touch greenhouse floor.
B. Remove and destroy large roots and stems and other debris from previous crop.
C. Prepare soil for planting. Allow for good aeration. Check soluble salts level.
D. Steam treat benches, soil, tools at 180°F for 1/2 hour at coolest point.

or Fumigate soil with CHLOROPICRIN at 3 ml. on 10-in. staggered centers (Chloropicrin is the most effective fumigant treatment for control of Verticillium Wilt).

or Fumigate benches, soil, and tools with METHYL BROMIDE at 2-4 lb./100 sq. ft. (When using soil fumigants follow manufacturer's directions carefully).

To Control
Verticillium Wilt
Bacterial Blight
Pythium Root and Basal Stem Rot
Rhizoctonia Basal Stem Rot
Sclerotinia Rot

II. Planting

A. Purchase pathogen-free rooted cuttings from a specialist propagator. Plant directly from shipping carton. Always wash hands thoroughly before planting or pinching young plants.

To Control
Virus Diseases and other diseases as listed above

III. Young Plants

A. Drench, as required, with soil fungicides. DEXON 35% WP (1 1/2 lb.) plus TERRACLOR WP (3 3/4 lb.)/100 gal. of water. Apply to 400 sq. ft. of bed (one application only). If Pythium continues, make an additional drench of DEXON alone in 30 days.

To Control
Rhizoctonia Basal Stem Rot
Pythium Root and Basal Stem Rot
Sclerotinia Rot

IV. Growing Plants

A. Spray growing plants on a 7- to 14-day schedule, covering both leaf surfaces with FERBAM 76% WP (1 1/2 lb./gal. water). Avoid overhead watering.

For powdery mildew, use KARATHANE 22.5% (4 oz./100 gal. water).

To Control
Septoria Leaf Spot
Ascochyta Ray Blight
Stemphylium Ray Speck
Powdery Mildew

V. Flowering

A. When flower buds begin to show color:
1. Reduce relative humidity by venting and heating at sundown.
2. Mist spray on a 3-7 day schedule with ZINEB 75% WP or CAPTAN 50% WP (1/2 lb./100 gal. water).

or Thermal dust weekly with Termil at manufacturer's recommendations (for Botrytis Petal Blight only).

To Control
Botrytis Petal Blight
Ascochyta Ray Blight
Stemphylium Ray Speck

VI. Flower Storage

A. Control measures for flower rot in storage or shipment must be applied in the greenhouse. Mist spray before cutting with ZINEB 75% WP or CAPTAN 50% WP (1/2 lb./gal. water).

To Control
Botrytis Petal Blight
Ascochyta Ray Blight
Stemphylium Ray Speck

HENRY F. MICHELL CO. KING OF PRUSSIA, PA.