

VI. DISEASES OF HERBACEOUS ORNAMENTAL PLANTS

AGERATUM

Yellows (Callistephus virus 1) caused mod. damage to flowers in Assiniboine Park, Winnipeg, Man. (W.L. Gordon).

ALTHAEA - Hollyhock

Rust (Puccinia malvacearum). Heavy infections occurred at Fort Garry, Man. (W.L.G.). Several gardens at Dorval, Que. had tr. -25% rust (D.W. Creelman). It was sev. on specimens received from East Angus and Coaticook, and mod. in several gardens in St. Jean, Que. (R. Crete). Infections were mod-sev. in gardens in Charlottetown, P.E.I. (R.R. Hurst, J.E. Campbell).

ANEMONE

Rust (Tranzchelia pruni-spinosae) occurred on A. coronaria in a garden at Sidney, B.C. Nearby prune trees were heavily infected (W. Newton).

ANTIRRHINUM - Snapdragon

Stem Rot (Botrytis cinerea). A tr. of stem rot was seen at Hamilton, Ont. and some wilting was evident. Botrytis was sporulating on the stem cankers and was isolated from diseased tissue (W.G.K.).

Powdery Mildew (Oidium sp.) was tr. on the lower leaves of a few plants at Hamilton, Ont. (W.G.K.).

ARALIA

Wilt (Verticillium albo-atrum). One infected plant was seen at Victoria, B.C. (W.R. Foster).

ASTER

Rust (Coleosporium asterum = C. solidaginis). Infection was sev. in a 1/4 acre planting at Bowmanville, Ont. (H.S. Thompson).

BEGONIA

Powdery Mildew (Erysiphe cichoracearum) was noted at Saskatoon, Sask. (T.C. Vanterpool). Mildew infection varied from sl. - sev. on 25/150 tuberous begonias observed at Hamilton, Ont. (W.G.K.). Specimens were received from Charlesbourg, Que. (D. Leblond).

Ring Spot (virus). Numerous chlorotic rings were observed on the foliage of a single potted tuberous begonia at Grantham, Ont. Juice extract from the leaves when rubbed on cucumber produced chlorotic rings on the true leaves. The virus has not been identified. Similar symptoms were seen on 2/150 plants in a commercial greenhouse at Hamilton, Ont. (W.G.K.).

Oedema (excess water) was mod. on specimens received from Pointe Fortune, Que. (D.L.).

CALENDULA

Aster yellow (Callistephus virus 1) caused mod. flower damage in a garden in Winnipeg, Man. (W.L.G.). Infection was light in gardens at Kentville, N.S. (K.A. Harrison).

CALLISTEPHUS - China Aster

Wilt (Fusarium oxysporum f. sp. callistephi) was sev. in greenhouses at Ayer's Cliff, Que. (D.L.).

Yellows (Callistephus virus 1) caused sev. damage to a planting in Winnipeg, Man. (W.L.G.).

CANNA

Gray Mold (Botrytis cinerea) affected plants moved from a greenhouse at Tecumseh, Ont. (R.W. Walsh).

CATTLEYA

Sobralia Blight (Glomerella cincta). One diseased plant was received from Penticton, B.C. Two stems and the attached leaves were affected (G.E. Woolliams).

CELOSIA - Cockscomb

Leaf Spot (Phyllosticta sp.) was sl. on C. argentea var. cristata at Quebec City, Que. (D.L.).

CHRYSANTHEMUM

Ray Blight (Botrytis cinerea). Tr. infections were seen on outdoor plants at Saanichton, B.C. (W. Newton).

Leaf Spot (Botrytis cinerea). Lower leaves of a few plants of Indianapolis White were sl. infected at Leamington, Ont. The fungus was sporulating on the affected areas (W.G.K.).

Leaf Spot (Septoria sp.). White and Yellow Shasta were found mod. infected at Sarnia, Ont. Leaf spot was also prevalent on the lower leaves of Delaware, Oregon and Bonnafon Deluxe in a greenhouse at Hamilton (W.G.K.).

Wilt (Verticillium albo-atrum) was tr. in beds of Gold Lace and Queen's Lace at Leamington, Ont. The pathogen was recovered from 11/25 plants from the same greenhouse submitted to the laboratory for diagnosis (W.G.K.).

Foliar nematode (Aphelanchoides sp.). Chrysanthemums in a home garden in Maidstone Twp., Essex Co., Ont. were 50% defoliated. Most varieties were infected. Three sprays of parathion will control this pest (R.W. Walsh).

Petal Scorch. A small number of blooms were scorched by the sun in a Leamington, Ont. greenhouse (W.G.K.).

COSMOS

Aster Yellows (*Callistephus virus 1*) was sev. in gardens at Winnipeg, Man. (W.L.G.).

DAHLIA

Aster Yellows (*Callistephus virus 1*) was injurious to dahlias in a Winnipeg garden (W.E. Sackston).

DELPHINIUM

Powdery Mildew (*Erysiphe polygoni*). A heavy infection caused sev. damage in a garden at Charlottetown, P.E.I. (R.R. Hurst).

Bacterial Blight (*Pseudomonas delphinii*) was tr. in Queens Co., P.E.I. (R.R.H.).

DIANTHUS - Carnation

Branch Rot (*Alternaria dianthi*) affected a few plants in a small commercial greenhouse at Amherstburg, and was found in a bed of Harvest Moon at London, Ont. (W.G.K.).

Flower Blight (*Botrytis* sp.) was extremely sev. on White Apollo and Athena near Ridgeville, Ont. Cloudy weather and high humidity favored disease development. Sl. infections were also seen at Grantham, Ont. (W.G.K.).

Wilt (*Fusarium* sp.) appeared in patches throughout a greenhouse in Sarnia, Ont. (W.G.K.).

Stem Rot (*Fusarium* sp.). An entire bed of 1400 young carnation plants at Sarnia, Ont. was lost from stem rot. The cuttings had been propagated from a previous crop believed to be disease-free (W.G.K.).

Stem Rot (*Rhizoctonia solani*). *R. solani* was isolated from affected plants received from Brampton, Ont. (W.G.K.).

Rust (*Uromyces dianthi* = *U. carophyllinus*). Midas was sev. infected at London, Ont. whereas Harvest Moon showed only a tr. of rust. Carnations in 4 Sarnia greenhouses were rusted. Red Sim was heavily infected in 1 house. Apollo was mod. infected at Leamington, Ont. (W.G.K.).

Twig and Bud Blight (various fungi). *Vermicularia herbarum*, *Fusarium scirpi* f. *acuminatum* and *Botrytis cinerea* were found associated with the disease which was mod. at Quebec City, Que. (D.L.).

Aster Yellows (*Callistephus virus 1*). Sl. infections were observed on a few plants at Winnipeg, Man. (W.L.G.).

DIEFFENBACHIA

Bacterial Leaf Spot (Xanthomonas dieffenbachiae). A single houseplant was affected at Ottawa. Diseased leaves yellow and die. Bacterial exudate was prominent on the lesions. The disease as observed on this plant differs from the description by McCulloch and Pirone (Phytopath. 29: 956, 1939) in that lesions were also present on the petioles. There is some evidence that the petiole lesions followed mite damage (D.W. Creelman).

EPIGAEA

Powdery Mildew (Microsphaeraalni var. vaccinii). Tr. infections were observed on E. repens at Nictaux, N.S. (C.O. Gourley).

EUPHORBIA - Poinsettia

Stem Rot (Rhizoctonia solani) affected a few poinsettias grown in pans at Niagara Falls, Ont. Cankers developed at soil level (W.G.K.).

GALANTHUS - Snowdrop

Stem and Bulb Rot (Rhizoctonia solani) occurred on G. elwesii at Gordon Head, B.C. (W. Newton).

GLADIOLUS

Core Rot, (Botryotinia draytoni). Sev. foliar and floral infections caused the loss of thousands of blooms at Quebec City, Champigny and Ste. Foy, Que. (D.L.).

Yellows (Fusarium oxysporum f. gladioli) was more widespread and destructive in Man. than in any previous year. The average loss to growers was estimated at 20% (B. Peturson). Mod. infections were noted at Ste. Foy, Disraeli and Boischatel, Que. (D.L.). Yellows sev. affected several varieties in a large planting in Queens Co., P.E.I. (R.R. Hurst).

Scab (Pseudomonas marginata) was sl. at Ste. Foy, Que. (D.L.).

Dry Rot (Stromatinia gladioli). Mod. infections were seen at Ste. Foy, Loretteville and Boischatel, Que. (D.L.) Dry rot caused the complete loss of a planting at St. John, N.B. (S.R. Colpitts). Up to 10% of the plants were affected in some areas of a commercial planting at Rockland, N.S. (J.F. Hockey).

Root Rot (various pathogens) caused a yellowing, often followed by a browning of leaves and ultimately the death of the plants at Saskatoon, Sask. Symptoms were sev. following hot weather 22-31 July. Isolations from affected plants yielded Fusarium, Pythium and Rhizoctonia spp. (T.C. Vanterpool).

Aster Yellows (Callistephus virus 1). Plants with symptoms characteristic of aster yellows occurred to the extent of about 1% in a planting at Fort Garry, Man. (B. Peturson).

GLOXINIA

Root-knot nematodes (Meliodogyne incognita) were found in one tuber at Cowichan Station, B.C. The plant was stunted with distorted crown leaves and petioles (J.E. Bosher).

HESPERIS - Dame's Rocket

Mosaic (virus) was mod. on H. matronalis at Rimouski, Que. (D.L.).

HIBISCUS - Rose-of-Sharon

Powdery Mildew (Erysiphe cichoracearum). Sl. infections occurred on H. syriacus at Boischatel, Que. (D.L.).

Leaf Spot (Phyllosticta syriaca) was mod. on H. syriacus at Boischatel, Que. (D.L.).

HYACINTHUS - Hyacinth

Bulb Nematodes (Ditylenchus dipsaci) were present in one planting at Gordon Head, B.C. (J.E.B.).

Soft Rot (Erwinia carotovora) was sl. both in the field and in storage at Metchosin and Gordon Head, B.C. (W. Newton).

HYDRANGEA

Powdery Mildew (Oidium sp.). Mildew affected 90% of 300 hydrangeas in a commercial greenhouse in Hamilton, Ont. Infections ranged from tr.-sev. The plants were tightly spaced on the bench and air circulation was generally poor (W.G.K.).

Oedema (excess water) occurred in H. paniculata at Quebec City, Que. (D.L.).

IRIS

Leaf Spot (Didymellina macrospora). Specimens received from the Ottawa, Ont. district were heavily infected. All plants in the garden were affected (H.S. Thompson). Leaf spot was general and heavy in gardens in Charlottetown, P.E.I. (R.R. Hurst).

Bulb Nematodes (Ditylenchus destructor) infected 5% of approximately 1/2 million bulbs at Gordon Head, B.C. (J.E. Bosher).

Soft Rot (Erwinia carotovora) was sev. in 2 gardens at Charlottetown, P.E.I. (R.R. H.).

Crown Rot (Sclerotium delphinii) appeared in trays in heat chambers preparatory to forcing. The bulbs were matted together by mycelium and profuse masses of sclerotia, causing the loss of 20,000 bulbs. Tr. infections were found in the field from which the bulbs were taken. The identification was confirmed by Dr. M. Pantidou (W.N.).

KALANCHOE

Leaf blight (Botrytis cinerea) caused sev. injury to leaves of plants in a greenhouse at Brentwood, B.C. (W.N.).

LATHYRUS

Leaf Spot (Ascochyta pisi). Sl. infection was seen on L. latifolius in Quebec City, Que. (D. Leblond).

Mosaic (virus). A small planting of L. odoratus was destroyed by mosaic at Kentville, N.S. Nearby garden peas were sev. infected (K.A. Harrison).

LILIUM - Lily

Blight (Botrytis elliptica). Specimens received from Magog, Que. showed tr. infection (R. Crete). Blight caused sev. defoliation in a patch of Regal lilies at Kentville, N.S. (K.A.H.).

LOBULARIA - Sweet Alyssum

Wilt (Fusarium sp.) was tr. on sweet alyssum at Disraeli, Que. (D.L.).

MATTHIOLA - Stocks

Foot Rot (Rhizoctonia solani) killed 50% of the plants in a garden at Fort Garry, Man. (W.L. Gordon).

Wilt (Sclerotinia sclerotiorum). Tr. infections were observed in a greenhouse at Sidney, B.C. (W. Newton).

NARCISSUS

Smoulder (Botrytis narcissicola). Badly rotted bulbs were received from Virgil, Ont. The grower estimated the loss of 125/500 bulbs of the variety Easter Flower. Other varieties were relatively free of the disease (W.G.K.).

Bulb Nematode (Ditylenchus dipsaci). The variety Actaea was sev. infected in a small planting at Gordon Head, B.C. The forcing varieties King Edward and Sir Watkin were sl. infected in a Victoria greenhouse (J.E. Boshier).

PAEONIA - Peony

Blight (Botrytis paeoniae) caused mod. damage on several plants in a Lethbridge, Alta. garden (M.W. Cormack). Specimens were received from Saskatoon, Sask. (T.C. Vanterpool). Extremely sev. foliage infections developed soon after blooming at Kentville, N.S. on a pink variety. Old fashioned red peonies nearby remained free from Botrytis (J.F. Hockey).

Ring Spot (virus) was sev. at Ottawa, Ont. on one plant which failed to bloom (H.N. Racicot).

PELARGONIUM - Geranium

Crown Gall (Agrobacterium tumefaciens) was sl. on geraniums at Brentwood, B.C. (W. Newton).

Gray Mold (Botrytis cinerea) destroyed a large bed of geraniums at Tecumseh, Ont. (R.W. Walsh).

Leaf Spot (Botrytis cinerea) was tr. on 23/50 stock plants of the variety George Tassel at Dunnville, Ont. (W.G.K.).

Cutting Rot (Botrytis cinerea). Approximately half of some 10,000 leaf bud cuttings were destroyed by Botrytis in a greenhouse at Dunnville, Ont. The pathogen was isolated consistently from diseased tissue. The propagation house was low and narrow and air circulation was extremely poor (W.G.K.).

Stem Rot (Botrytis cinerea) caused a 10% loss of 500 plants at Waterloo, Ont. (H.S. Thompson).

Crinkle (virus). Circular chlorotic spots were found in abundance at Dunnville, Ont. on the younger leaves of 50 stock plants of each of the varieties Olympic Red and George Tassel (W.G.K.).

Oedema (physiological). A single geranium plant from Dunnville, Ont. showed corky ridges developing on the stems. This condition usually occurs when excessive watering and high humidity in a greenhouse accompany cloudy weather (W.G.K.).

PETUNIA

Sclerotinia Wilt (S. sclerotiorum) affected 50% of the plants in a large bed at North Hatley, Que. (H.S. Thompson).

Aster Yellows (Callistephus virus 1). Flowers and stems were distorted in a Winnipeg, Man. garden, and a mod. infection occurred in Assiniboine Park (W.L. Gordon).

PHLOX

Powdery Mildew (Erysiphe cichoracearum) caused sev. disfigurement of foliage in several Vancouver, B.C. gardens (H.N.W. Toms). It was common on phlox in Que. nurseries (J. Ringuet). Specimens were seen from Dorval (D. Creelman), and from Drummondville and Rouyn (D. Leblond). Heavy infections occurred in plantings in Charlottetown, P.E.I. (J.E. Campbell).

Leaf Spot (Septoria spp.). S. divaricatae was general in Que. nurseries in 1957 (J. Ringuet), and S. drummondii was extremely heavy on Phlox drummondii at Kentville, N.S. It was necessary to replant a bed of phlox because of the serious effects of this disease (J.F. Hockey, D.W.C.).

Blight (virus) was common in Que. almost everywhere perennial phlox were grown (D.L.).

PORTULACA

Blight (Helminthosporium portulacae). Mod. infections developed on P. grandiflora at Ernestown Sta., Ont. The fungus attacked the leaves causing defoliation and the flowers causing a blackening of flower parts. No stem or root rot phase was observed (I.L. Conners, R.A. Shoemaker).

SAINTPAULIA - African Violet

Gray Mold Blight (Botrytis cinerea). The organism was isolated from specimens submitted by a Lethbridge, Alta. grower (M.W. Cormack).

Root Lesion Nematodes (Pratylenchus penetrans, Paratylenchus sp.) Nematodes were found in plants showing stunted growth from Deep Cove, Vancouver and Vernon, B.C. (J.E. Boshier).

Mite Injury (Tarsonemus Mites) caused a characteristic leaf and crown distortion at Saanichton, B.C. (W.N.)

STATICE

Rust (Uromyces limonii). A single plant in a garden near St. Catharines, Ont. bore numerous rust pustules (W.G. Kemp).

TAGETES - Marigold

Leaf Spot (Phyllosticta sp.) was mod. at Ste. Foy. The spots occurred mostly at the tip and the edge of the leaves (D. Leblond).

Aster Yellows (Callistephus virus 1) caused sev. damage to a large border planting at Winnipeg, Man. (W.L. Gordon). Yellows was tr. in a planting at Charlottetown, P.E.I. (R.R. Hurst).

TULIPA - Tulip

Flower and Foliage Spotting (Botrytis tulipae and B. cinerea) caused heavy losses to producers of cut bloom on Vancouver Island, B.C. High humidity and warm weather during flower development accentuated the losses. Roguing of primary infections and spraying with captan, ferbam or zineb cut losses in some cases (W. Newton).

Fire (Botrytis tulipae) was widespread and sev. in s.w. Ont. in 1957. Tulip beds with tr. infections in early spring were soon destroyed even when attempts were made to remove infected plants (R.W. Walsh). Emperor tulips in a planting at Charlottetown, P.E.I. were sev. affected (R.R. Hurst). Infections at Kentville, N.S. were very light even in beds sev. affected in 1956. The season in 1957 was much less favorable (J.F. Hockey).

Topple (physiological). Specimens were received from a private garden in Ottawa, Ont. (H.S. Thompson). About 90% of the plants of Ursa Minor and Paul Richter were affected in a greenhouse at Cap Rouge (H.S.T.), and was sev. on yellow and pink varieties in a greenhouse at Neuville, Que. (D. Leblond).

VERONICA - Speedwell

Leaf Blotch (Gloeosporium sp.) was sev. on V. longifolia var. subsessilis in Battlefields Park, Quebec City, Que. (D.L.).

ZINNIA

Gray Mold (Botrytis cinerea) affected zinnias in a bed at Tecumseh, Ont. (R.W. Walsh).

Bud Blight (Botrytis cinerea). In a greenhouse at St. Catharines, Ont. 151/1500 plants were affected. Infection developed over a damp, humid weekend when drying conditions were poor (W.G. Kemp).

Aster Yellows (Callistephus virus 1), was tr. in a planting in Assiniboine Park, Winnipeg, Man. It was unusually rare on zinnias this year, though common on many other plants (W.L.G.). Fifteen plants were affected in an annual border at Charlottetown, P.E.I. (R.R.H.).