RESPONSE TO AMBIENT AIR POLLUTION: FEWER FLOWERS AND SCRAGGLY GROWTH

SCIENTIFIC NAME	COMMON NAME
Lantana camara	LANTANA

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

RESPONSE TO AMBIENT AIR POLLUTION: PALE & SPOTTED LEAVES, REDUCED GROWTH

SCIENTIFIC NAME	COMMON NAME
Apium graveolens var. dulce	CELERY
Aquilegia sp.	COLUMBINE
Asplenium bulbiferum	MOTHER FERN
Coriandrum sativum	CORIANDER
Daucus carota var. sativus	CARROT
Petroselium crispum	PARSLEY
Primula sp.	PRIMROSE

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

RESPONSE TO AMBIENT AIR POLLUTION:
LEAF SPOTS, FEWER FLOWERS, REDUCED GROWTH

SCIENTIFIC NAME	COMMON NAME
Nicotiana tabacum	NICOTIANA
Petunia hybridus	PETUNIA
Viola sp.	VIOLA

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

RESPONSE TO AMBIENT AIR POLLUTION:
FEWER FLOWERS, PALE LEAVES, REDUCED LIFE SPAN

SCIENTIFIC NAME	COMMON NAME
Lobularia matitima	SWEET ALYSSUM

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

RESPONSE TO AMBIENT AIR POLLUTION: FEWER FLOWERS, REDUCED GROWTH & LIFE SPAN

SCIENTIFIC NAME	COMMON NAME
Brachcome iberidifolia	SWAN RIVER DAISY

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

RESPONSE TO AMBIENT AIR POLLUTION: NO INJURY SYMPTOMS SEEN, APRIL-OCTOBER

SCIENTIFIC NAME	COMMON NAME
Camellia japonica	CAMELLIA
Eucalyptus sideroxylon rosea	PINK IRON BARK
Feijoa sellowiana	PINEAPPLE GUAVA
Juniperus chinensis	PFITZER JUNIPER
Magnolia grandiflora	SOUTHERN MAGNOLIA
Nerium oleander	OLEANDER
Pelargonium vulgaris	MARTHA WASHINGTON
Pelargonium vulgaris	GERANIUM
Podocarpus macrophyllis	YEW PINE
Rhapiolepsis indica	INDIAN HAWTHORN
Tulbaghia violaeoea	SOCIETY GARLIC

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

PHOTOGRAPHS OF ORNAMENTALS
FOR WHICH

REDUCED GROWTH

IS THE MOST STRIKING
RESPONSE TO AIR POLLUTION

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 1990-91

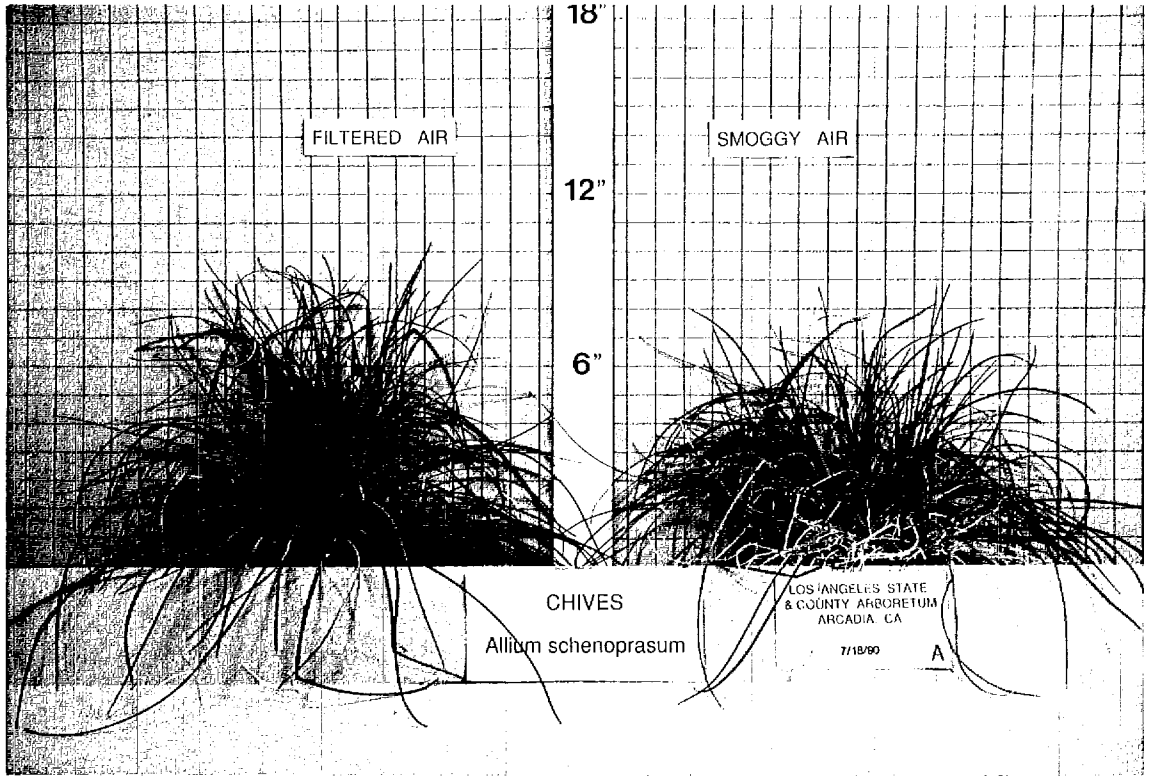
RESPONSE TO AMBIENT AIR POLLUTION: REDUCED GROWTH

SCIENTIFIC NAME	COMMON NAME
Allium cepa	CALIFORNIA RED ONION
Allium schoenoprasum	CHIVES
Centaurea cineraria	DUSTY MILLER
Citrus sinensis	ORANGE
Coleus hybridus	COLEUS
Coreopsis sp.	COREOPSIS
Gazania sp.	GAZANIA
Helichrysum congustifolium	CURRY PLANT
Lavendula sp.	LAVENDER
Ligustrum japonicum	WAX LEAF PRIVET
Origanum vulgare	OREGANO
Pelargonium	LEMON BALM
Pittosporum tobria	MOCK ORANGE
Rosa sp.	BONICA ROSE
Rosa sp.	PLAYBOY ROSE
Rosa sp.	SILVERADO ROSE
Rosmarinus officinalis	ROSEMARY
Washingtonia filfera	CALIFORNIA FAN PALM
Zinnea elegans	ZINNEA

REDUCED GROWTH

CHIVES

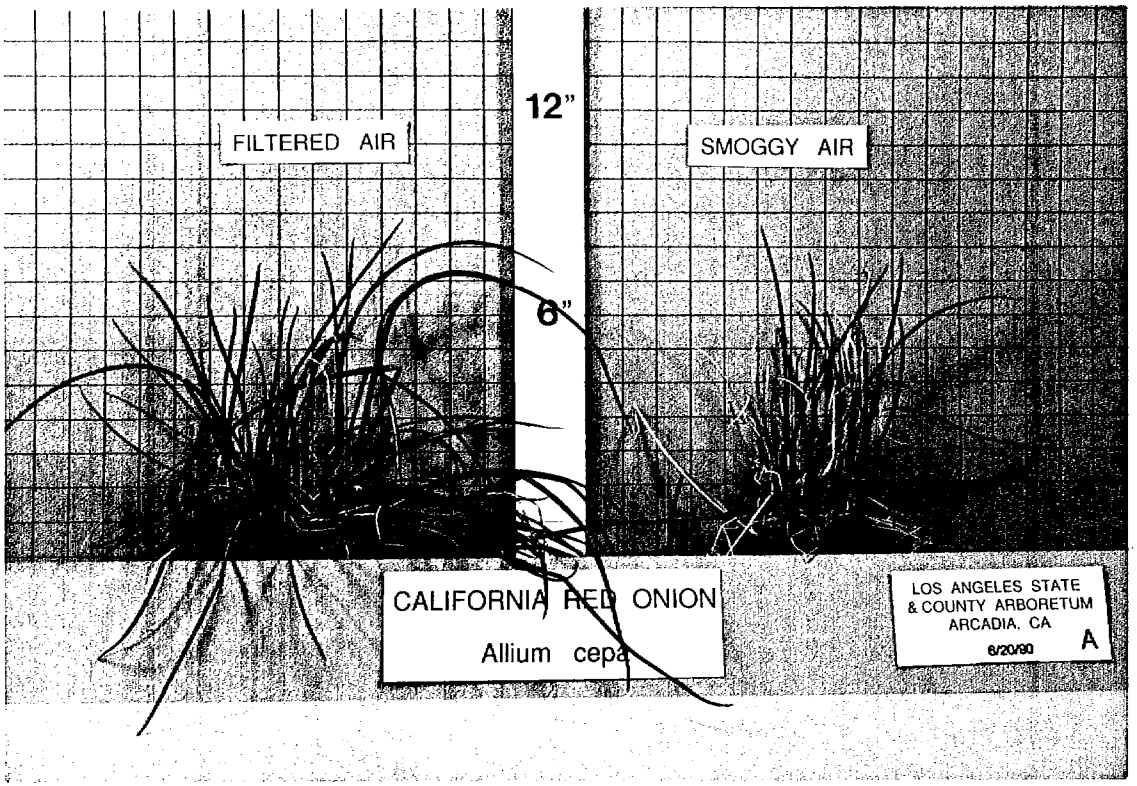
Allium schoenoprasum



REDUCED GROWTH

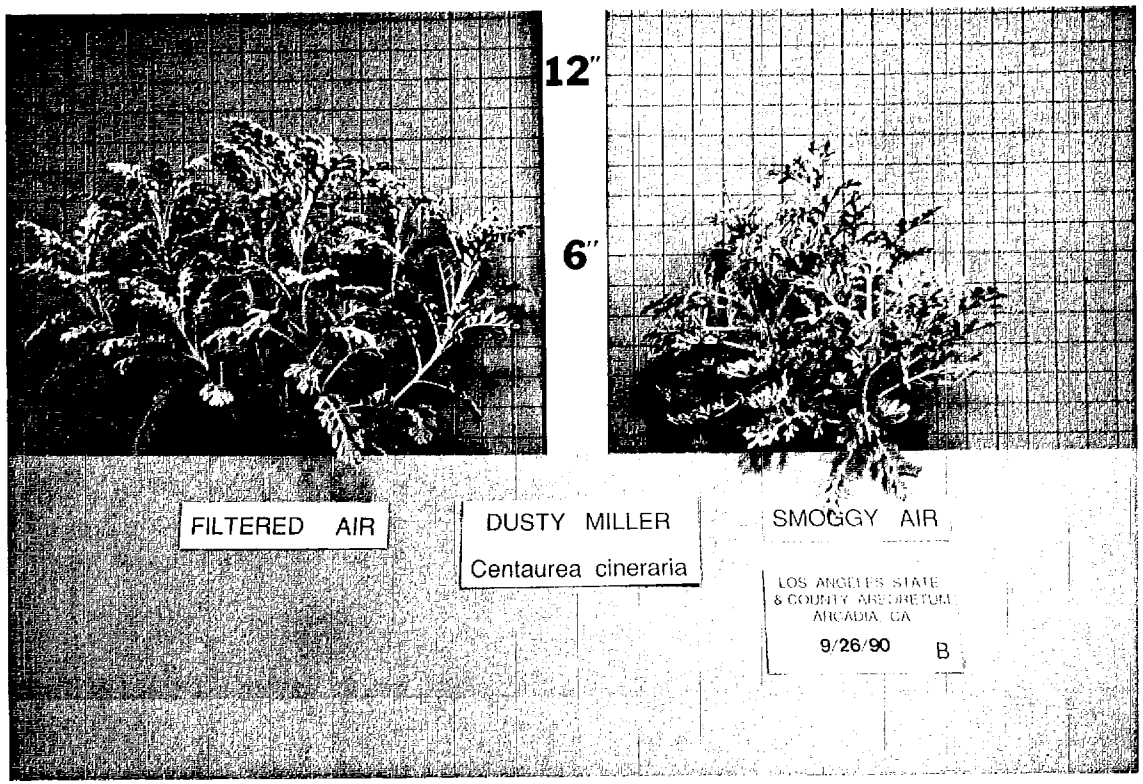
CALIFORNIA RED ONION

Allium cepa



REDUCED GROWTH

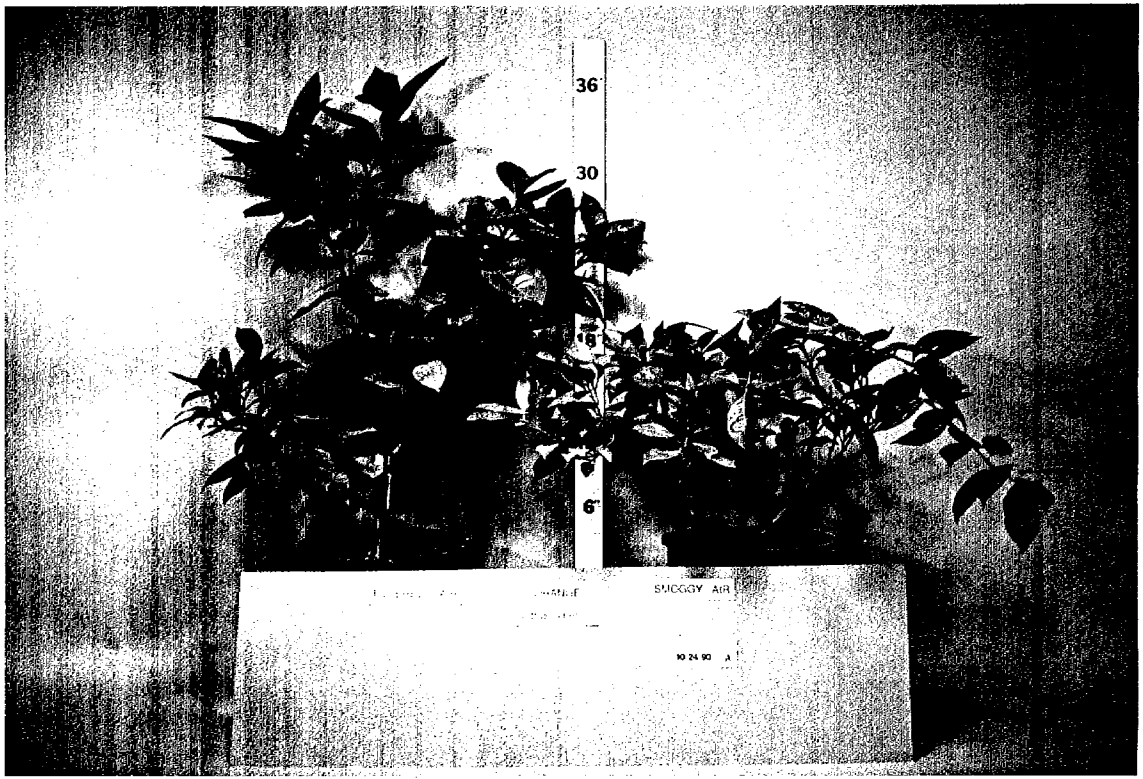
DUSTY MILLER
Centaurea cineraria



REDUCED GROWTH

ORANGE

Citrus sinensis



REDUCED GROWTH

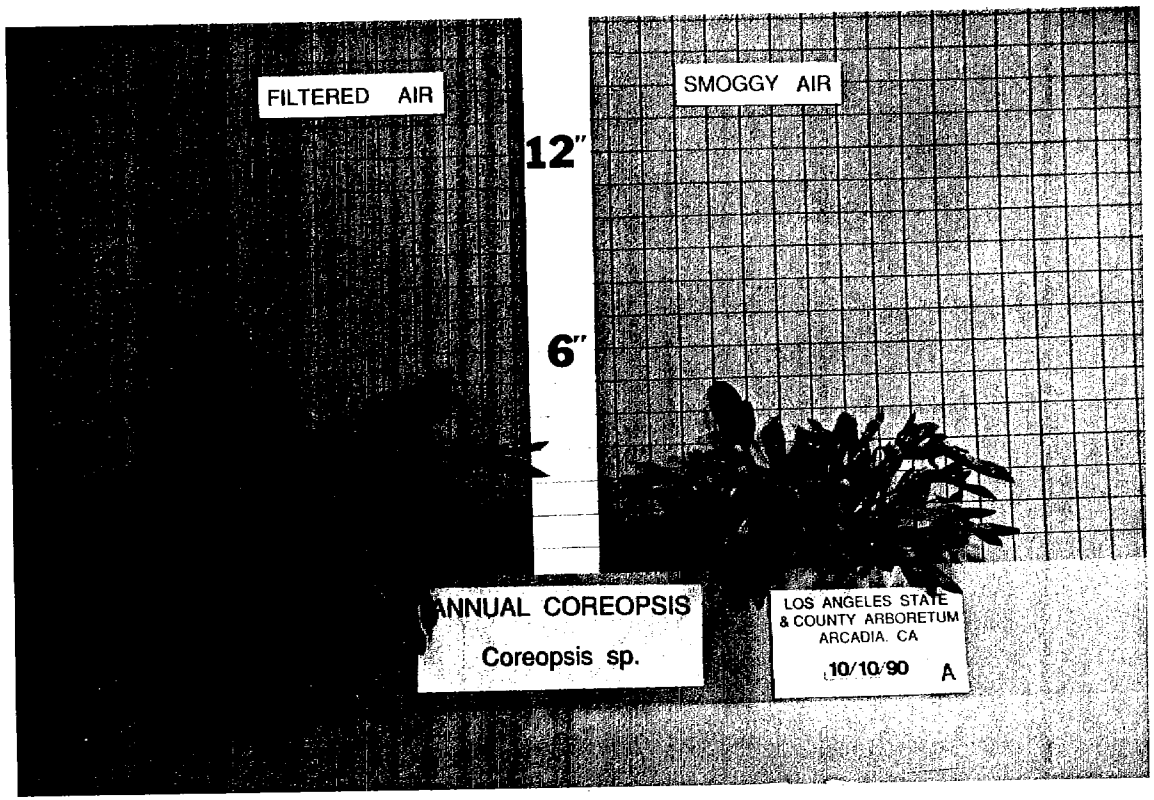
COLEUS

Coleus hybridus

REDUCED GROWTH

COREOPSIS

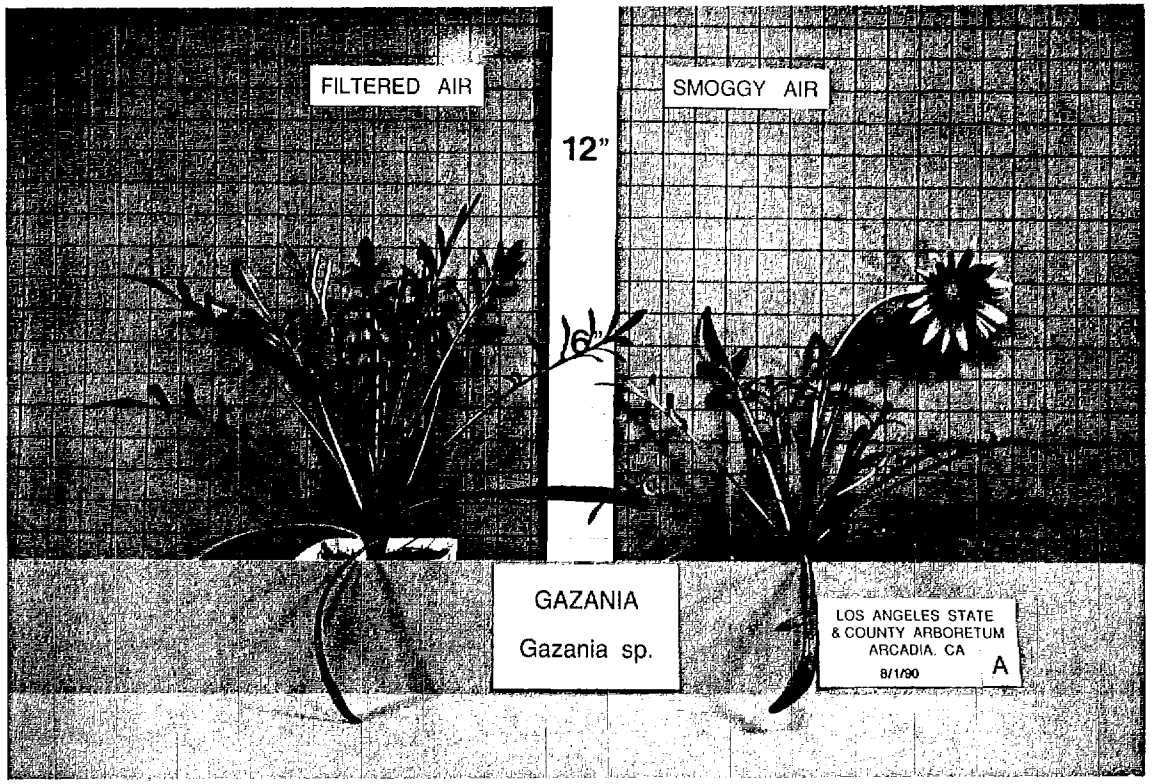
Coreopsis sp.



REDUCED GROWTH

GAZANIA

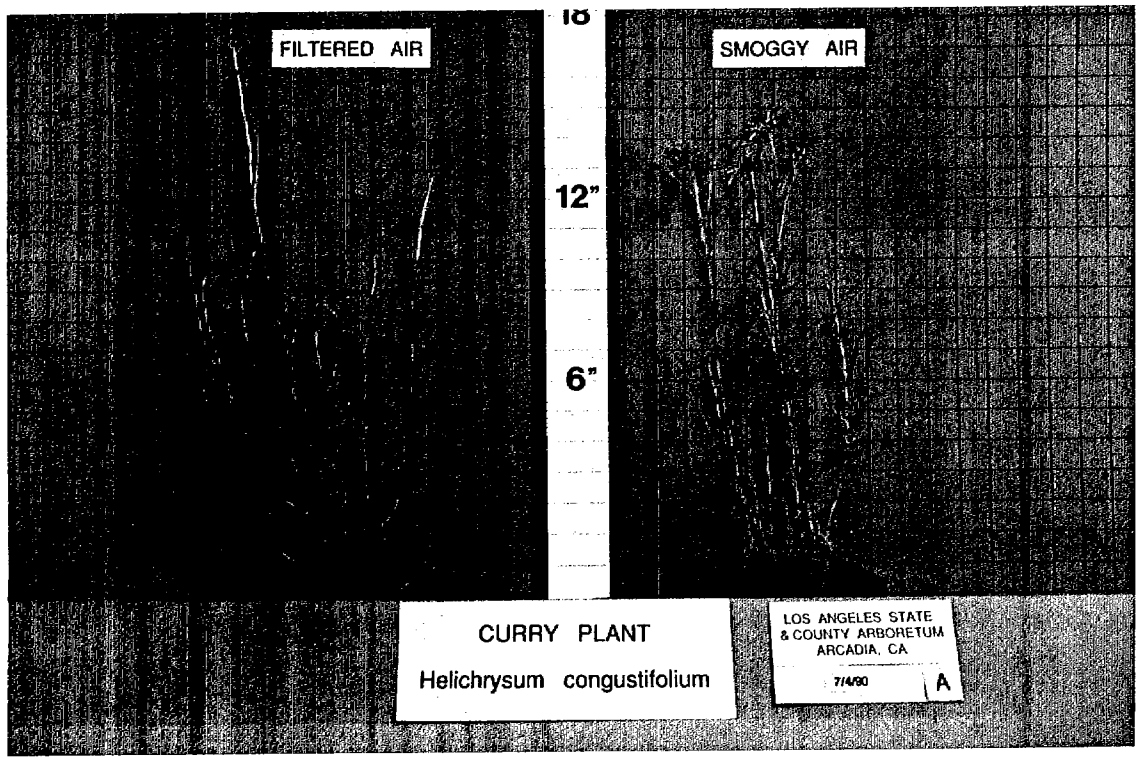
Gazania sp.



REDUCED GROWTH

CURRY PLANT

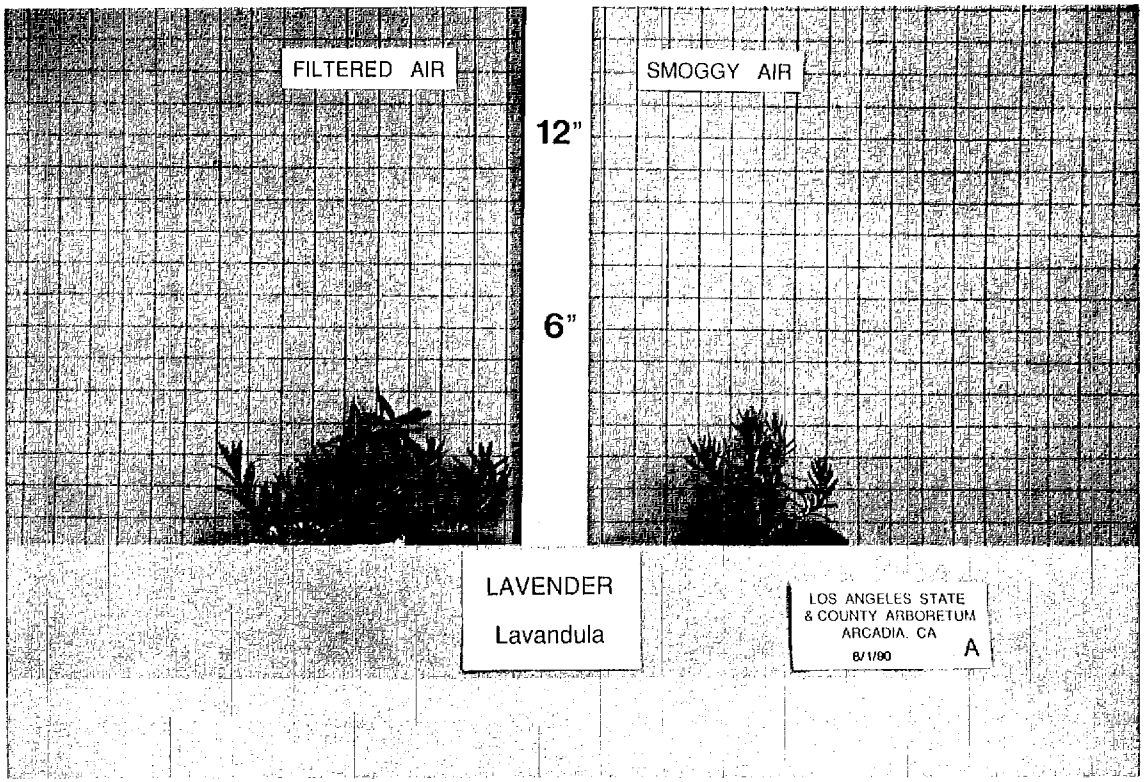
Helichrysum congustifolium



REDUCED GROWTH

LAVENDER

Lavendula sp.



REDUCED GROWTH

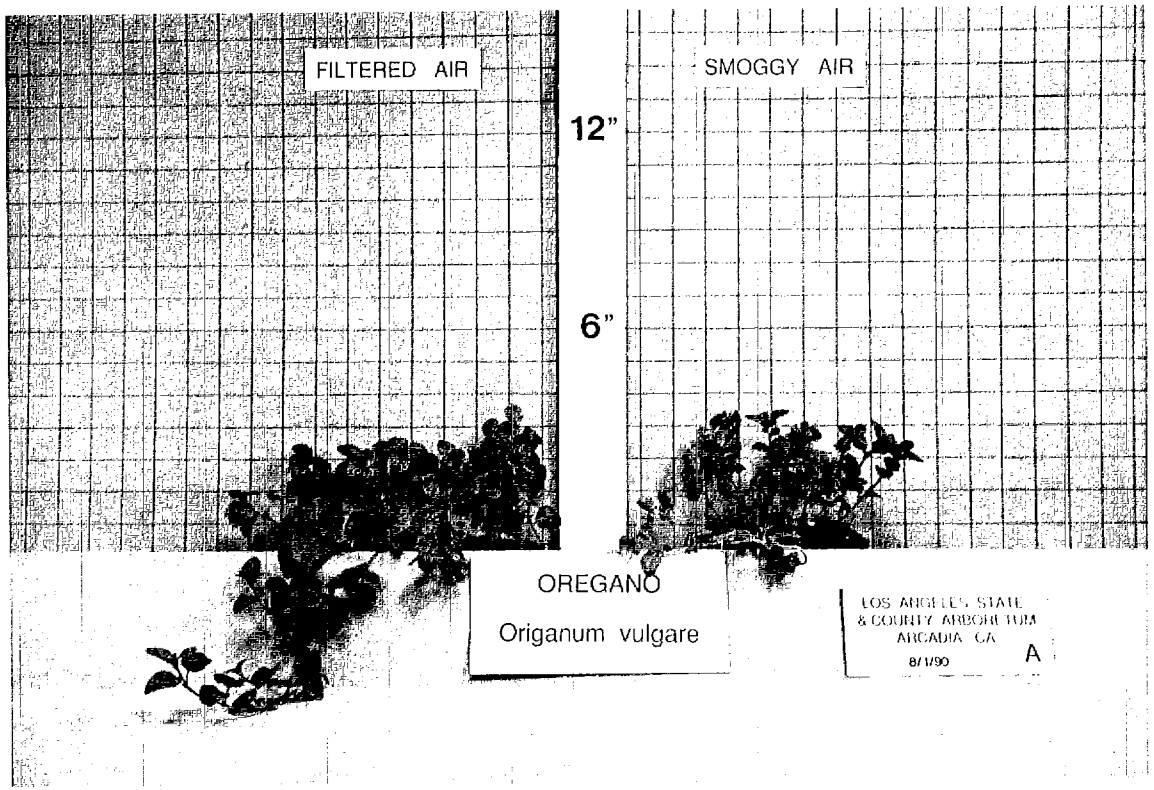
WAX LEAF PRIVET

Ligustrum japonicum

REDUCED GROWTH

OREGANO

Origanum vulgare



REDUCED GROWTH

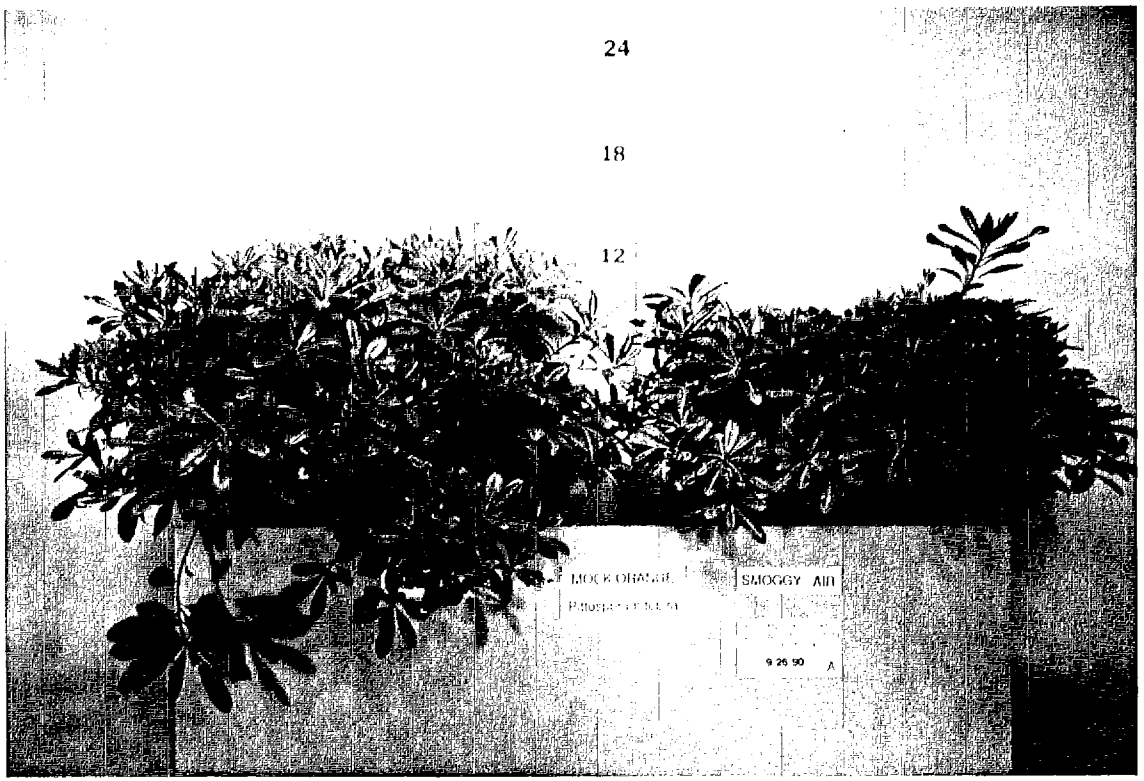
LEMON BALM

Pelargonium vulgaris

REDUCED GROWTH

MOCK ORANGE

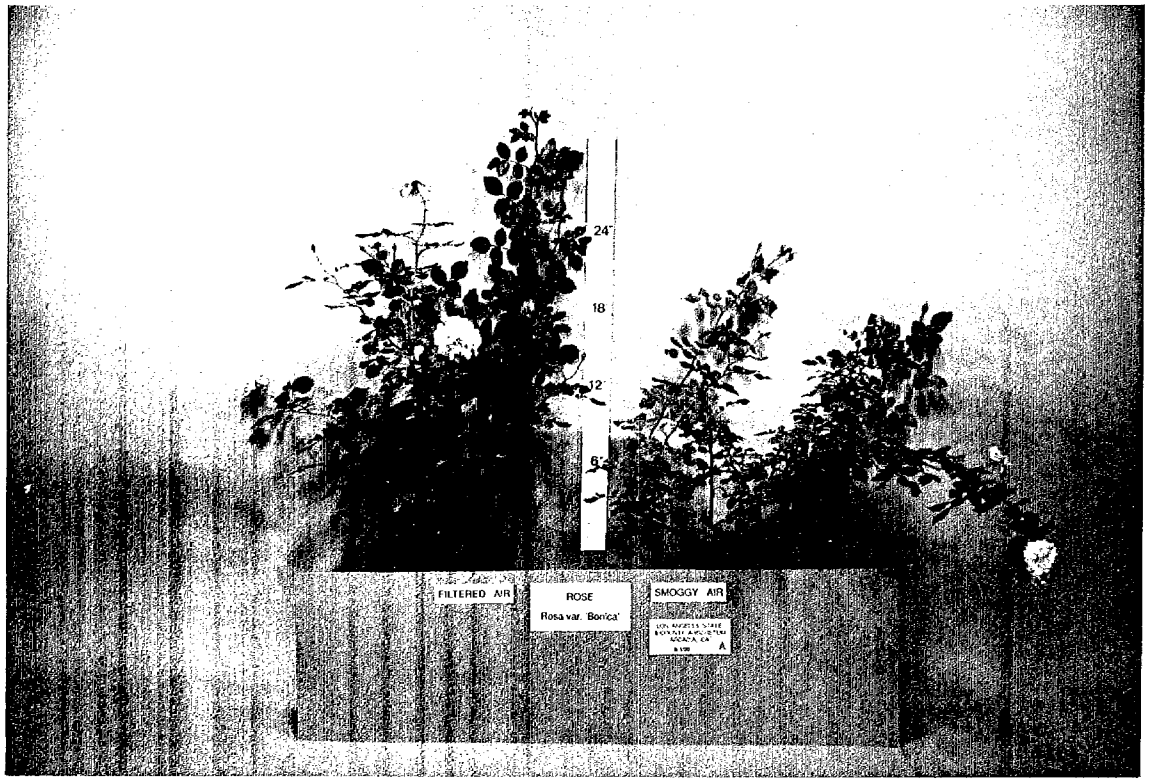
Pittosporum tobria



REDUCED GROWTH

BONICA ROSE

Rosa sp.



REDUCED GROWTH

PLAYBOY ROSE

Rosa sp.

REDUCED GROWTH

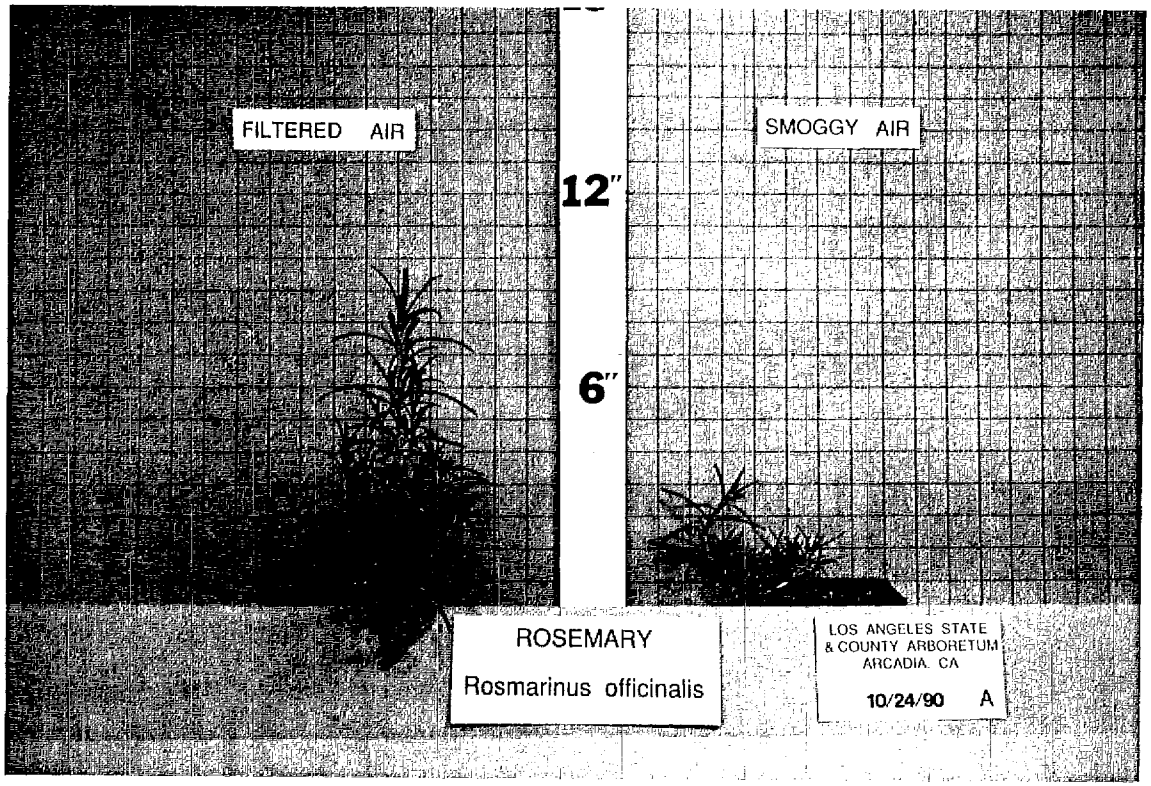
SILVERADO ROSE

Rosa sp.

REDUCED GROWTH

ROSEMARY

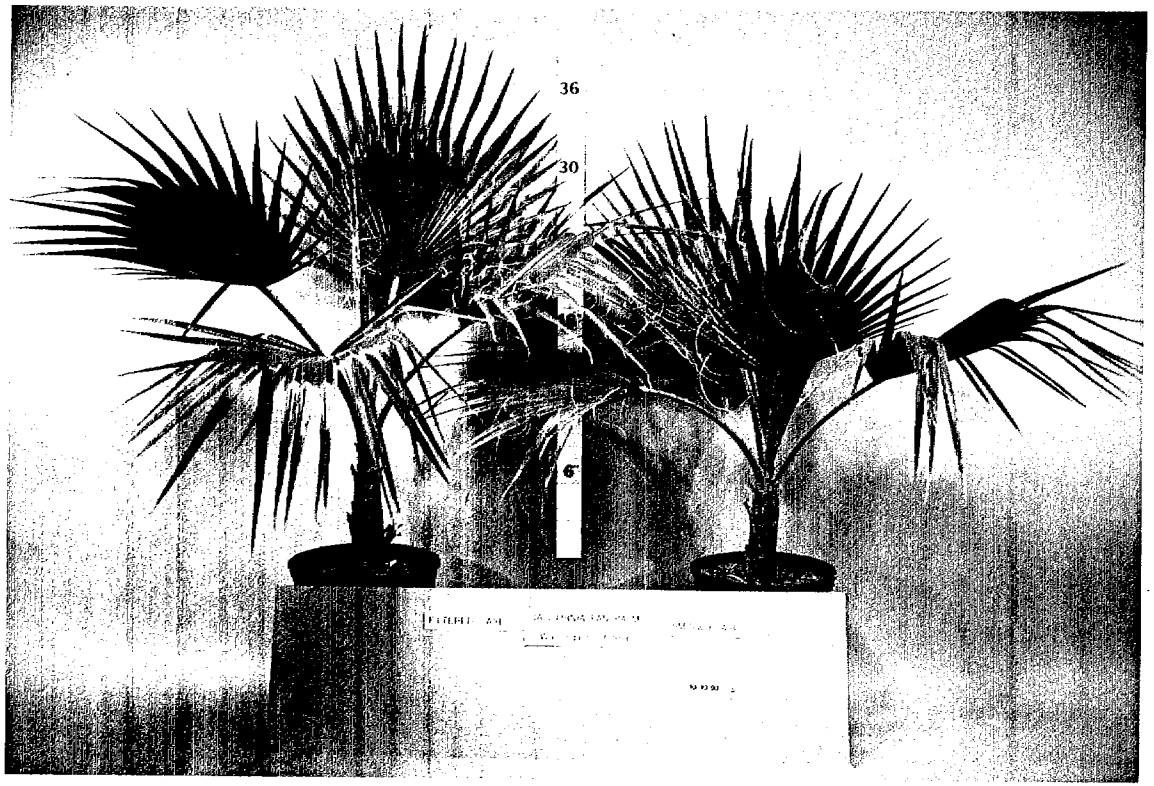
Rosmarinus officinalis



REDUCED GROWTH

CALIFORNIA FAN PALM

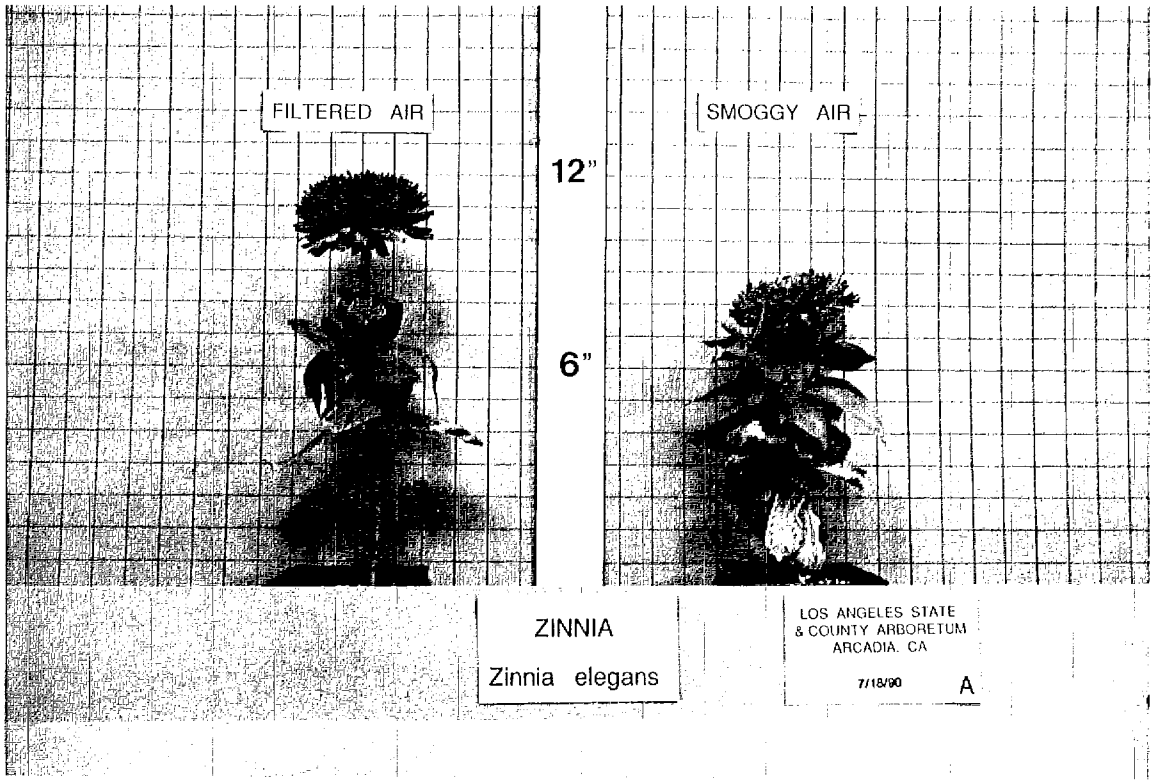
Washingtonia filifera



REDUCED GROWTH

ZINNIA

Zinnia elegans



PHOTOGRAPHS OF ORNAMENTALS
FOR WHICH

LEAF INJURY

IS THE MOST STRIKING
RESPONSE TO AIR POLLUTION

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 1990-91

RESPONSE TO AMBIENT AIR POLLUTION: LEAF INJURY SYMPTOMS, APRIL-OCTOBER

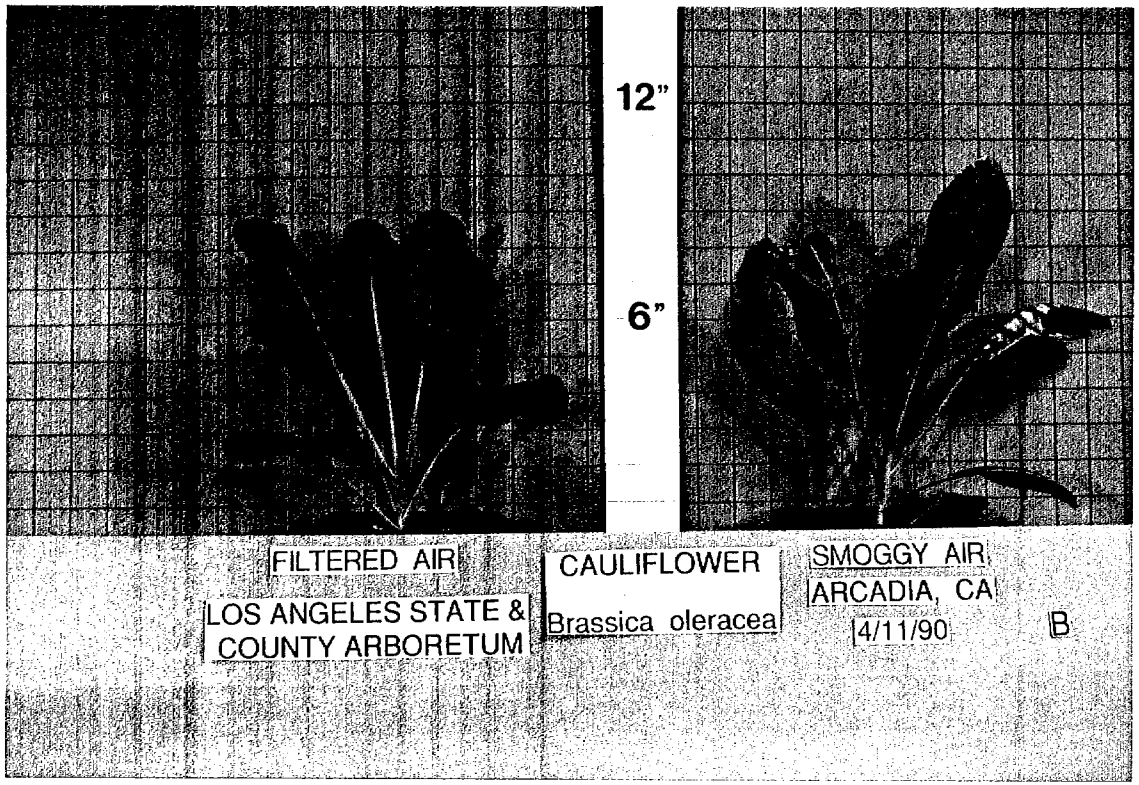
SCIENTIFIC NAME	COMMON NAME
Brassica oleracea	CAULIFLOWER
Dianthus sp.	CARNATION
Gomphrena globosa	GLOBE AMARANTH
Mentha pulegium	PENNYROYAL
Rumex scutatus	SORREL
Schinus molle	CALIFORNIA PEPPER TREE

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

LEAF SPOTS

CAULIFLOWER

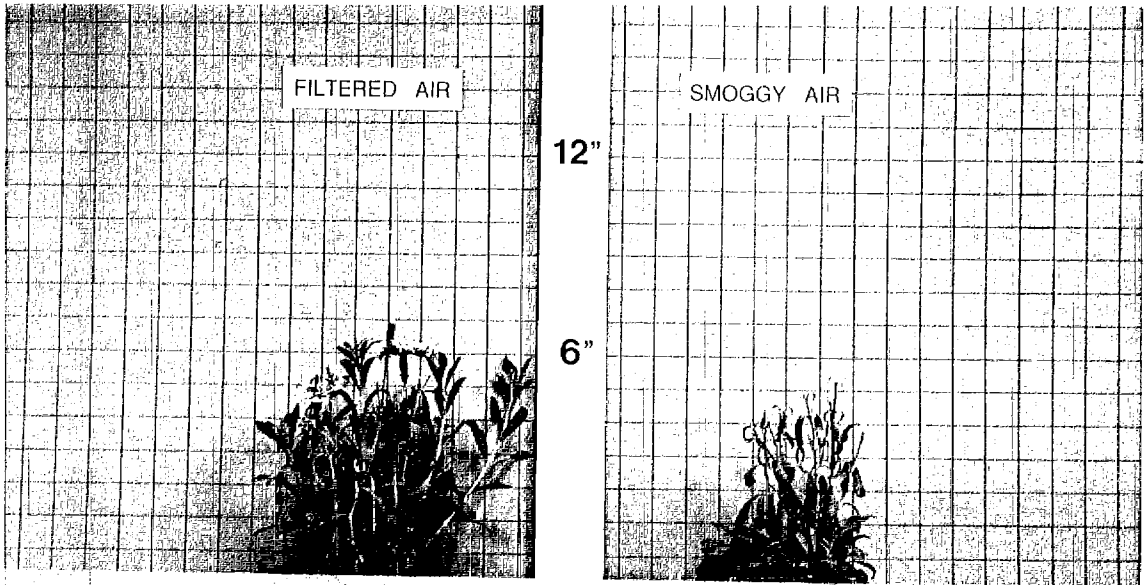
Brassica oleracea



LEAF SPOTS

CARNATION

Dianthus sp.



CARNATION

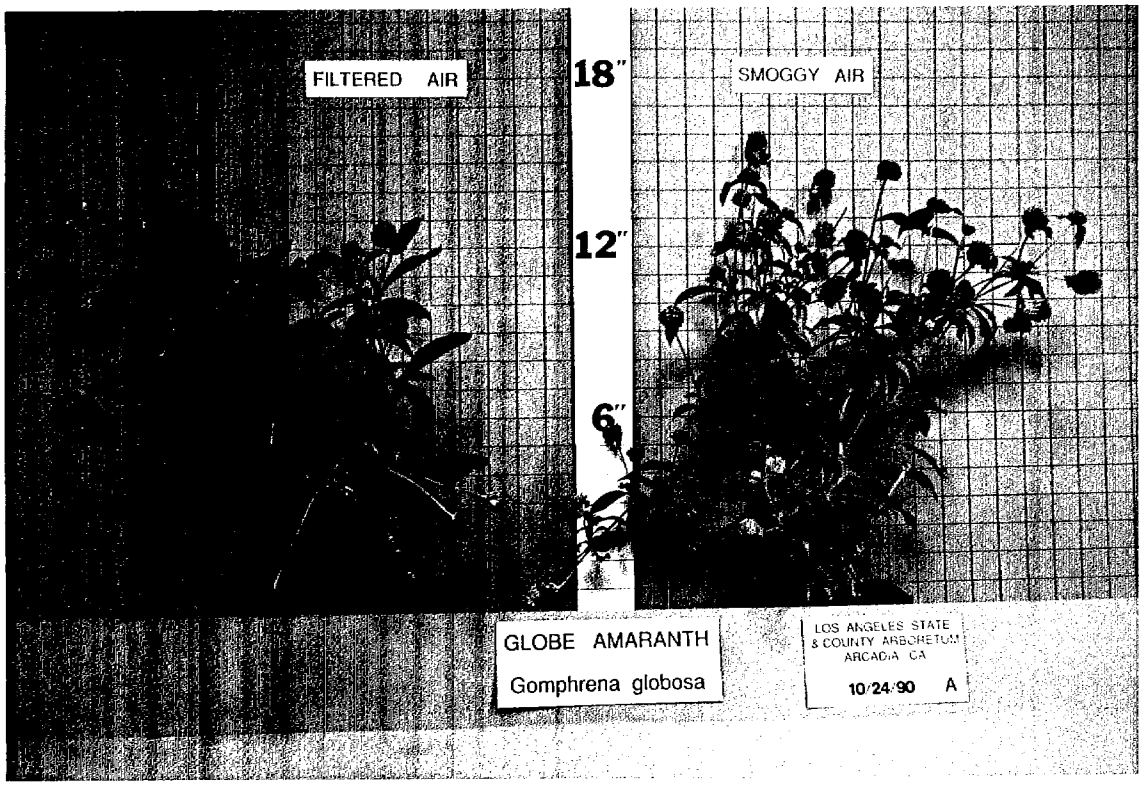
Dianthus sp.

LOS ANGELES STATE
& COUNTY ARBORETUM
ARCADIA, CA
8/1/90 C

PALE LEAF COLOR

GLOBE AMARANTH

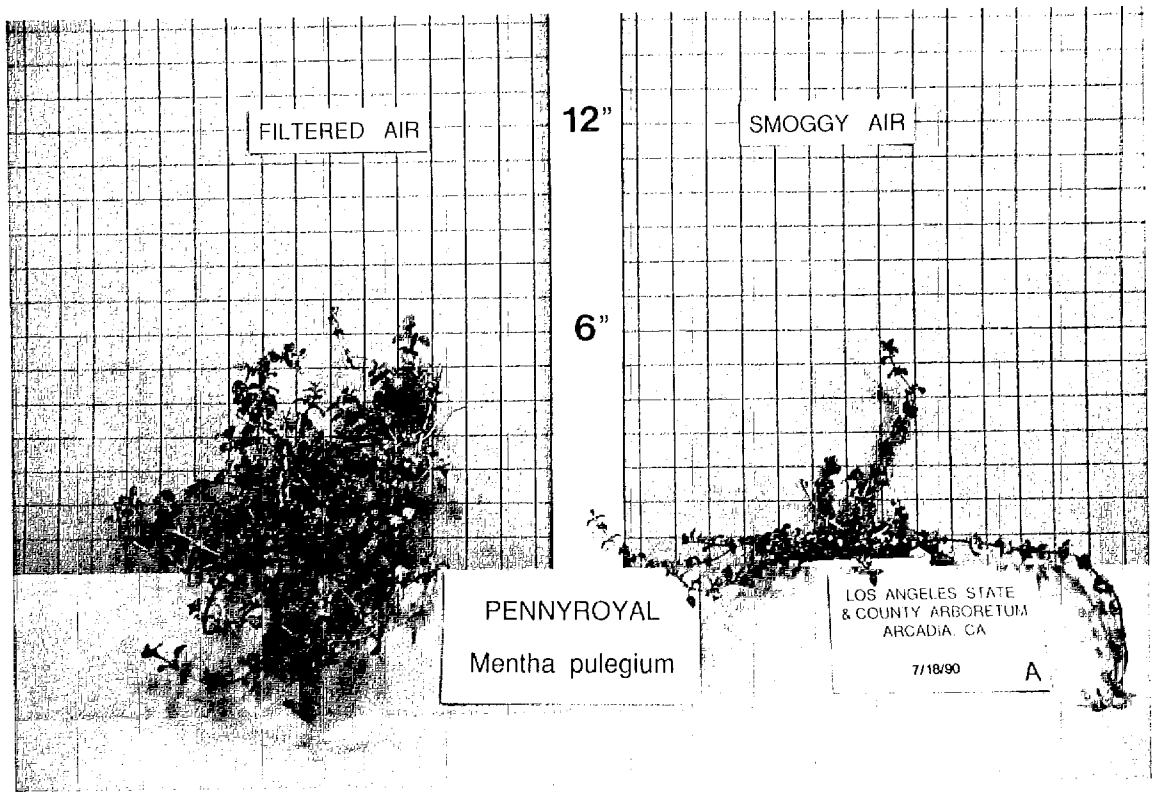
Gomphrena globosa



PALE LEAF COLOR

PENNYROYAL

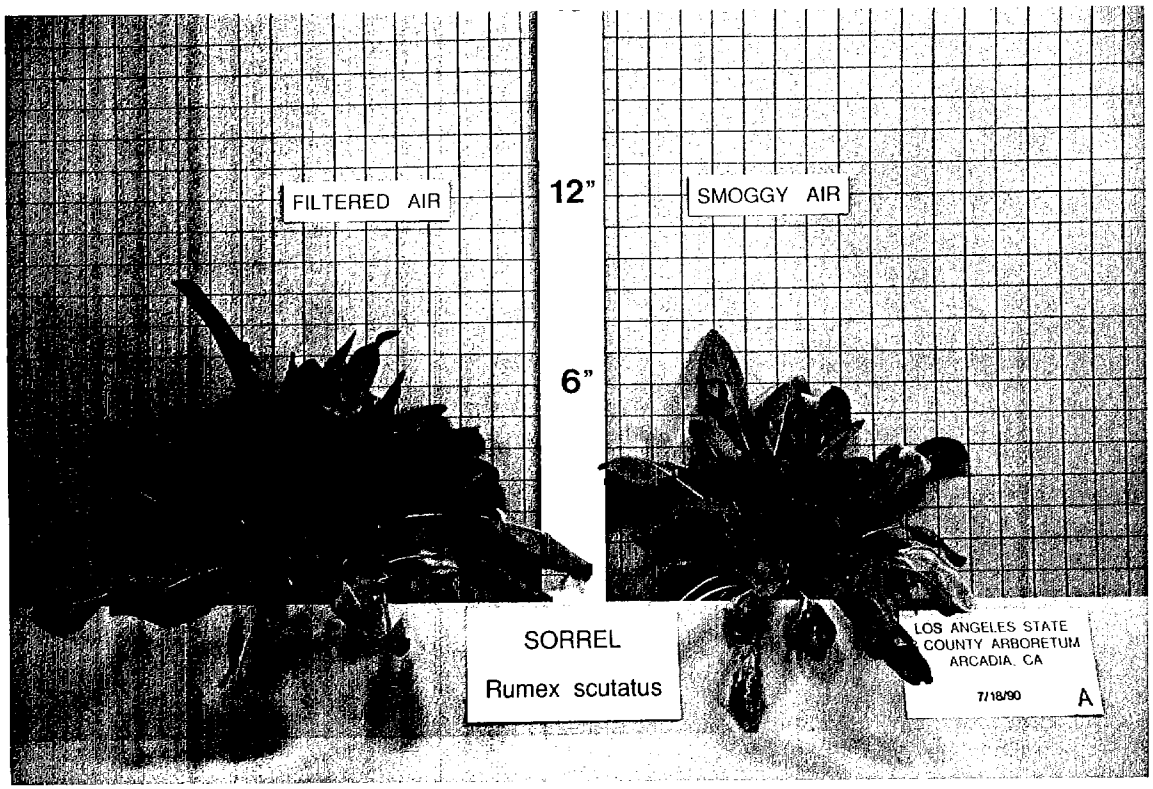
Mentha pulegium



LEAF SPOTS

SORREL

Rumex scutatus



LEAF SPOTS

CALIFORNIA PEPPER TREE

Schinus molle

PHOTOGRAPHS OF ORNAMENTALS
FOR WHICH A

SHORTER LIFE SPAN

IS THE MOST STRIKING
RESPONSE TO AIR POLLUTION

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 1990-91

RESPONSE TO AMBIENT AIR POLLUTION: SHORTER LIFE SPAN

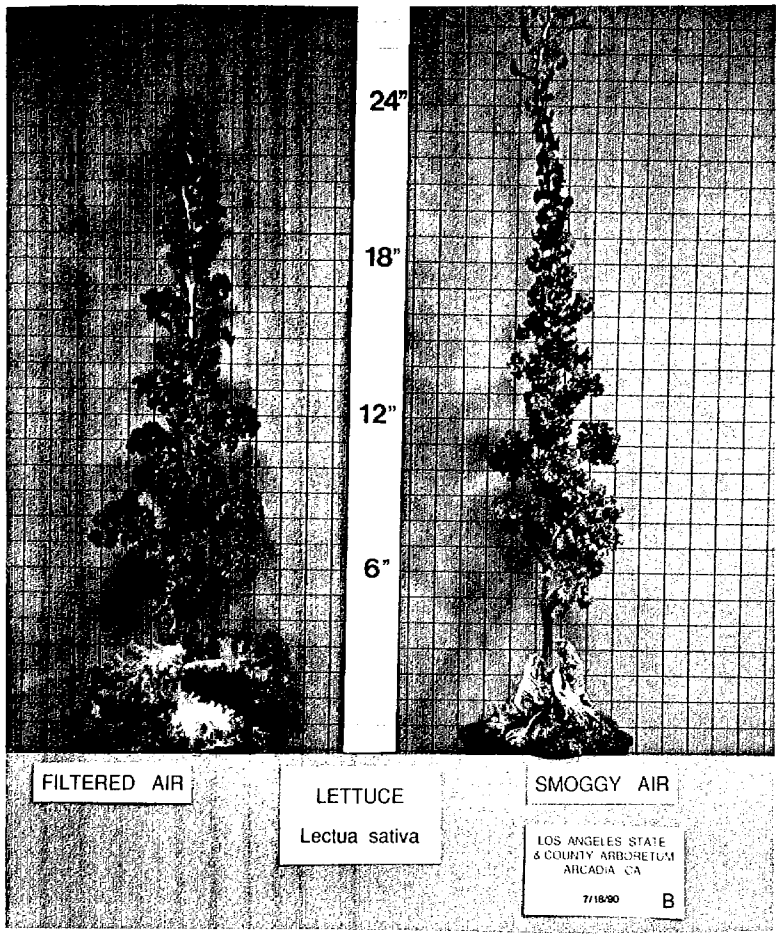
SCIENTIFIC NAME	COMMON NAME
Lectua sativa	LETTUCE

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

DIES SOONER

LETTUCE

Lectua sativa



PHOTOGRAPHS OF ORNAMENTALS
WHICH SHOWED

MORE THAN ONE

STRIKING RESPONSE
TO AIR POLLUTION

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 1990-91

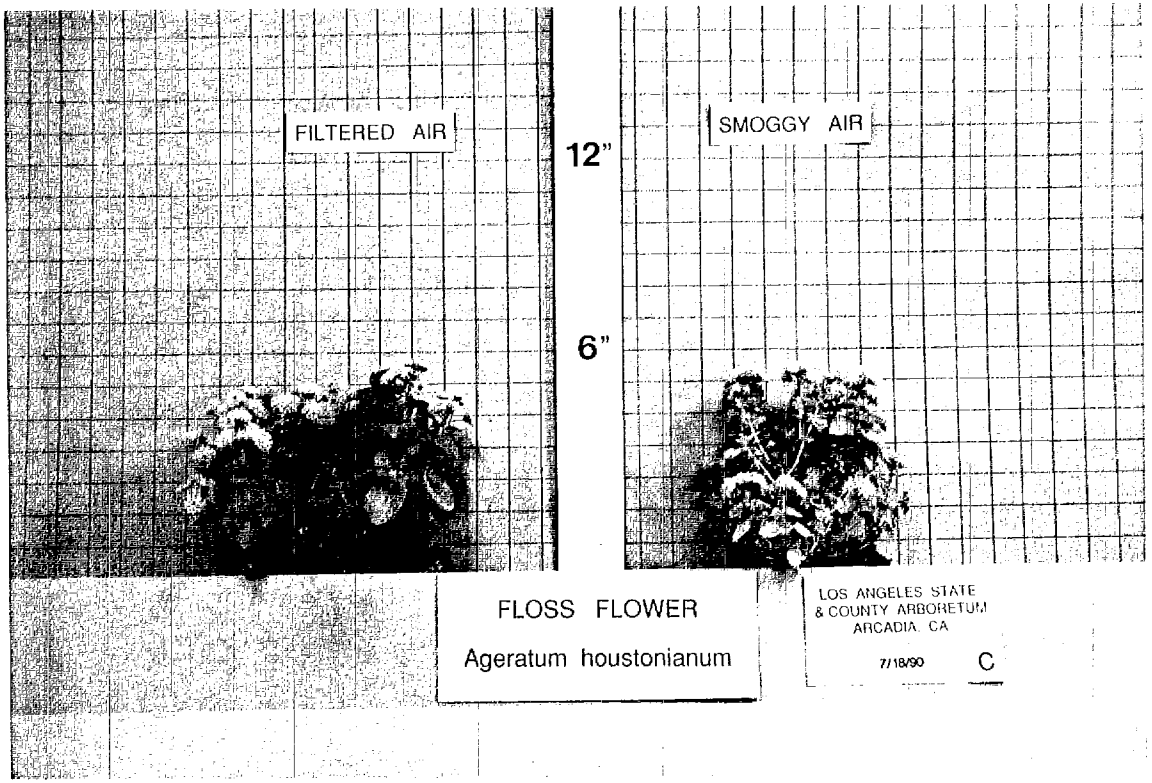
RESPONSE TO AMBIENT AIR POLLUTION: PALE LEAVES AND REDUCED GROWTH

SCIENTIFIC NAME	COMMON NAME
Ageratum houstonianum	FLOSS FLOWER
Capsicum annum	PEPPER
Celosia plumeria	COCKSCOMB
Cucumis sativus	CUCUMBER
Dahlia hybridus	DAHLIA
Gardenia sp.	GARDENIA
Lycopersicon lycopersicum	PATIO TOMATO
Lycopersicon lycopersicum	PRESIDENT TOMATO
Mentha piperita	PEPPERMINT
Ociumum basilicum	BASIL
Saliva splendens	SCARLET SAGE
Solanum melongena	EGGPLANT
Tanacetum vulgaris	COMMON TANSY

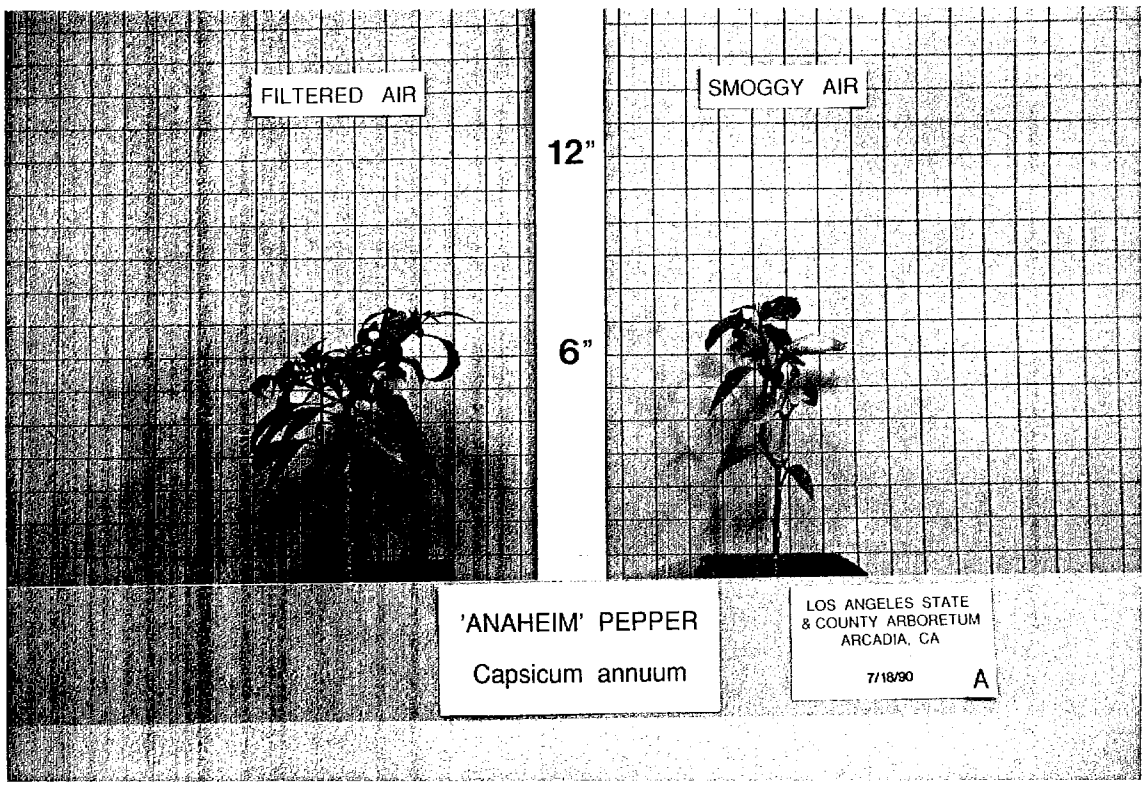
LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

PALE LEAVES
REDUCED GROWTH

FLOSS FLOWER
Ageratum houstonianum

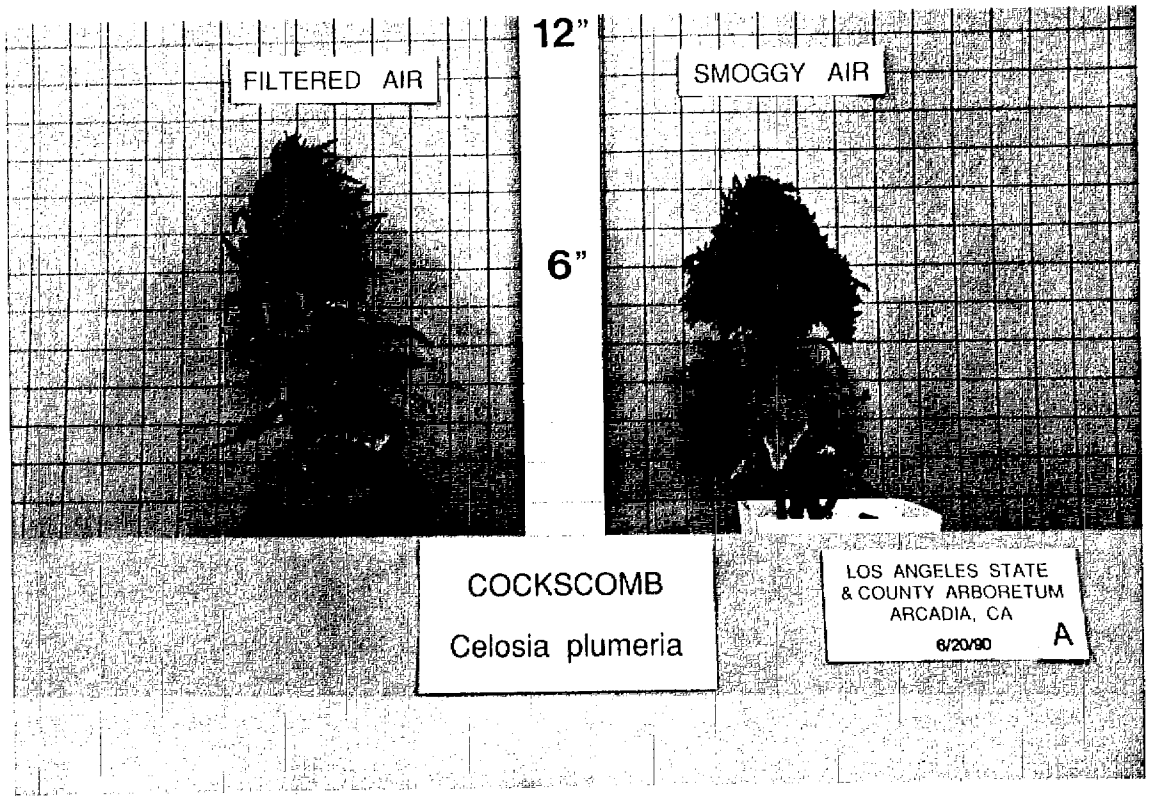


PALE LEAVES
REDUCED GROWTH
PEPPER
Capsicum annuum



PALE LEAVES
REDUCED GROWTH

COCKSCOMB
Celosia plumeria

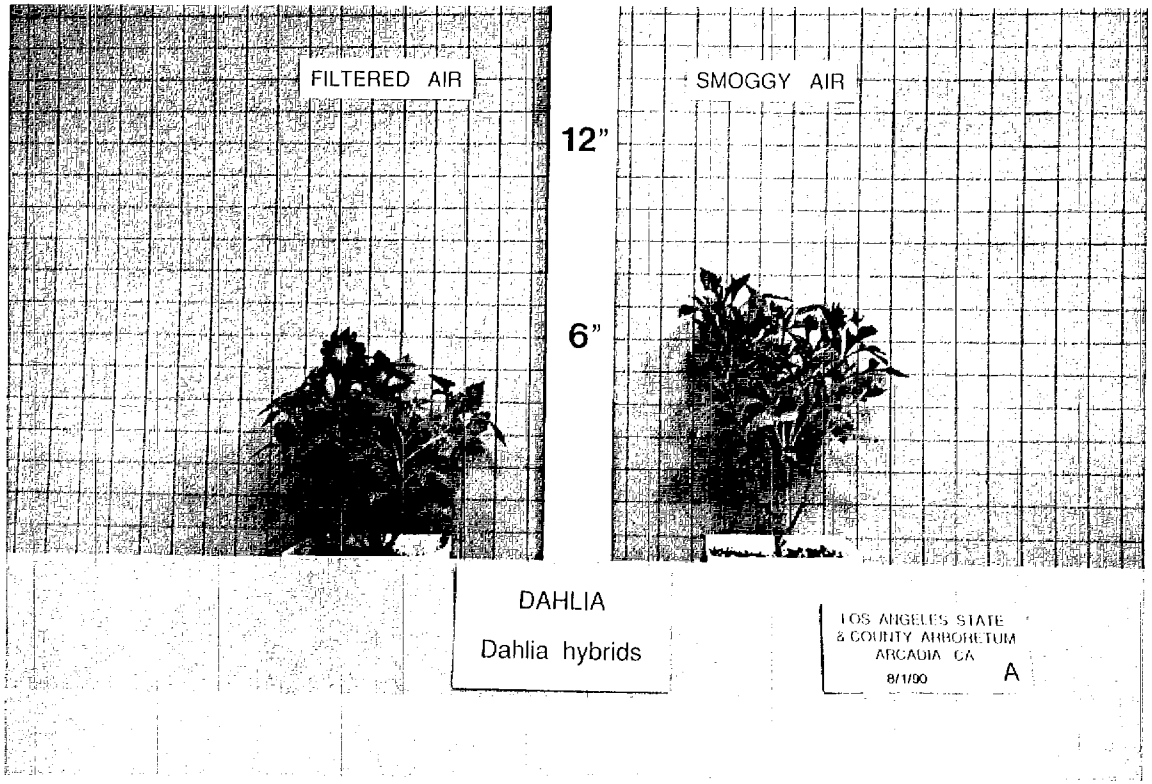


PALE LEAVES
REDUCED GROWTH

CUCUMBER
Cucumis sativus

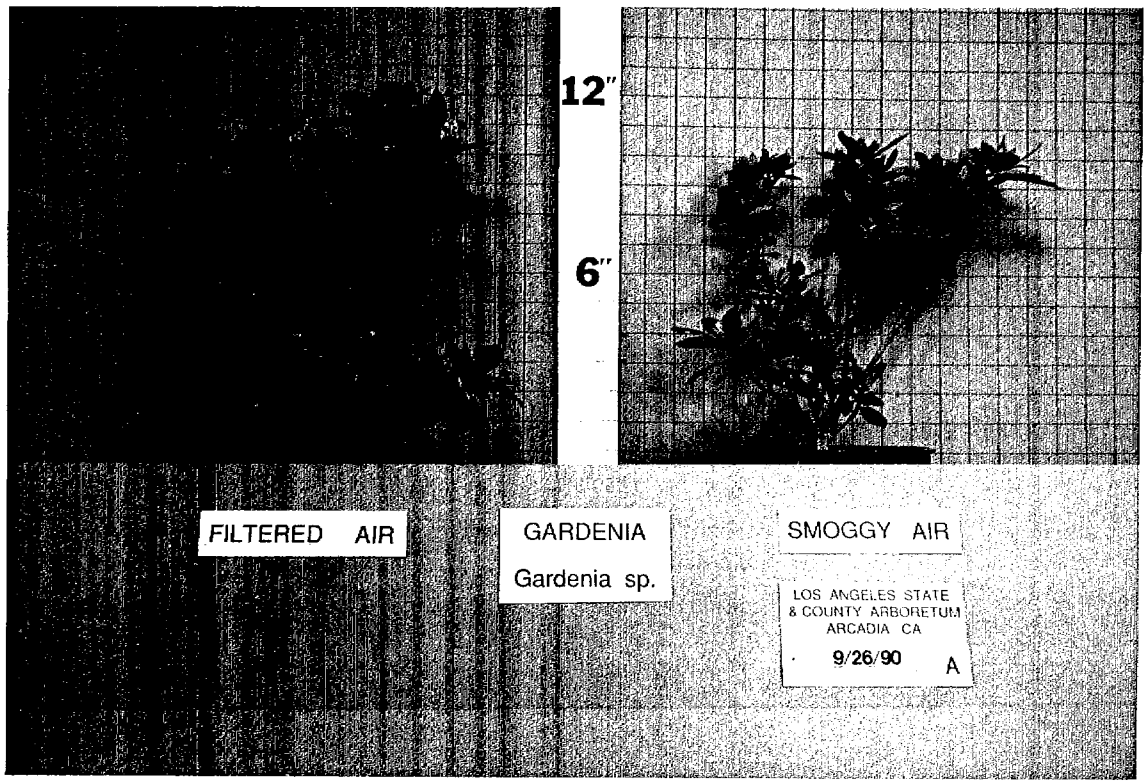
PALE LEAVES
REDUCED GROWTH

DAHLIA
Dahlia hybridus



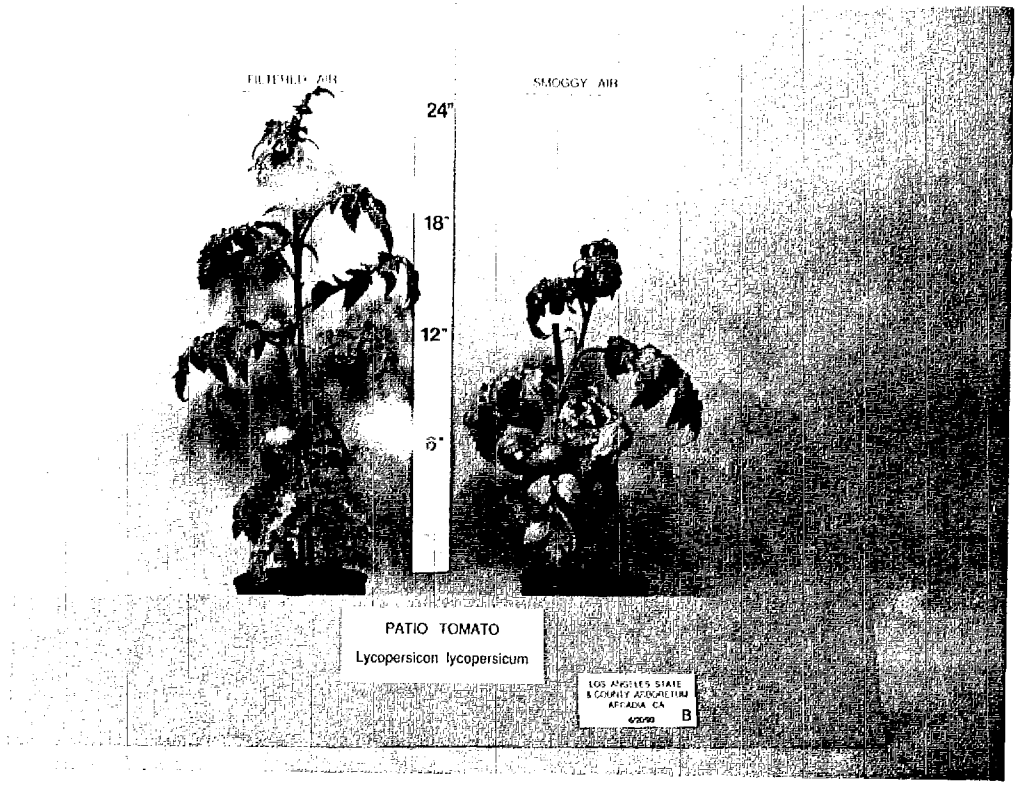
PALE LEAVES
REDUCED GROWTH

GARDENIA
Gardenia sp.



PALE LEAVES
REDUCED GROWTH

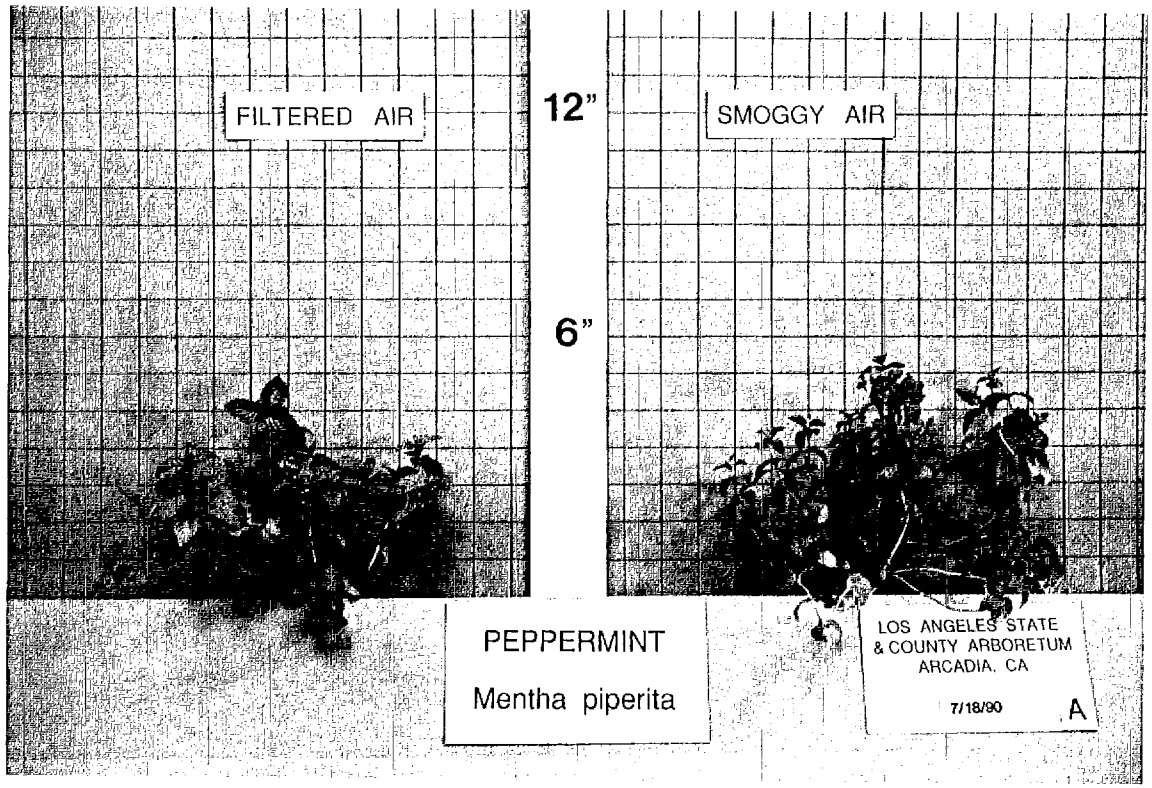
PATIO TOMATO
Lycopersicon lycopersicum



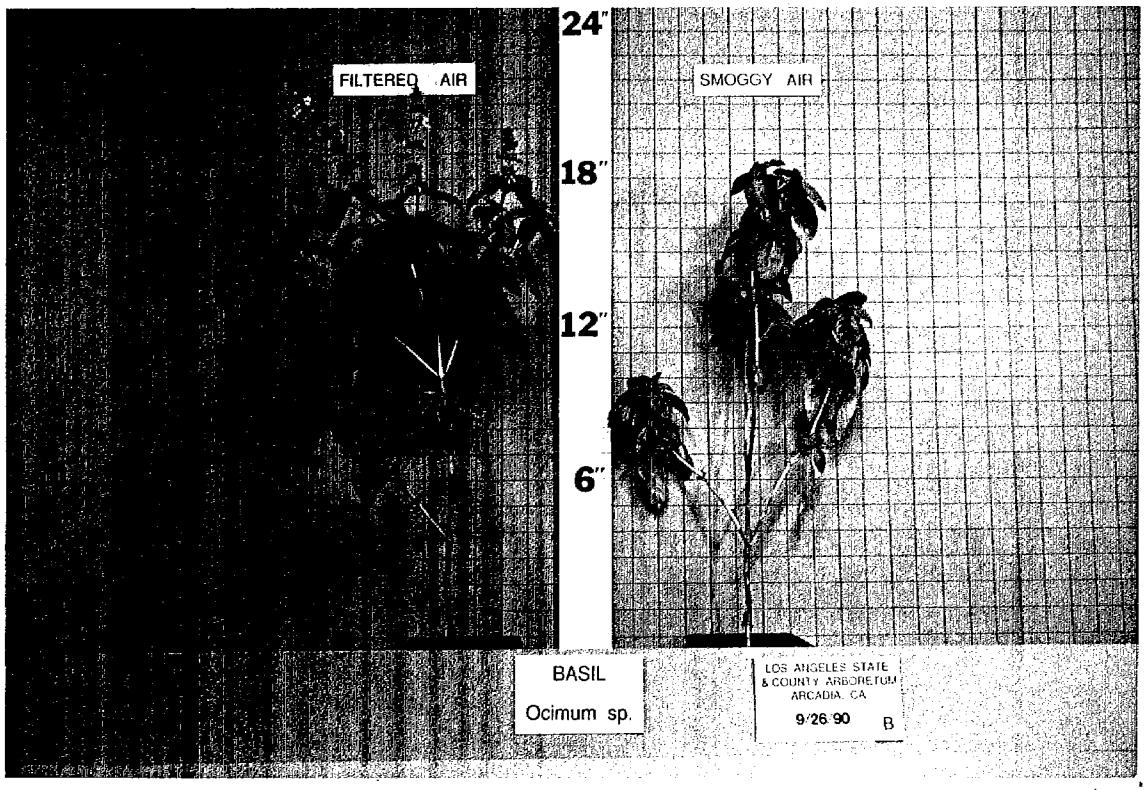
PALE LEAVES
REDUCED GROWTH

PRESIDENT TOMATO
Lycopersicon lycopersicum

PALE LEAVES
REDUCED GROWTH
PEPPERMINT
Mentha piperita

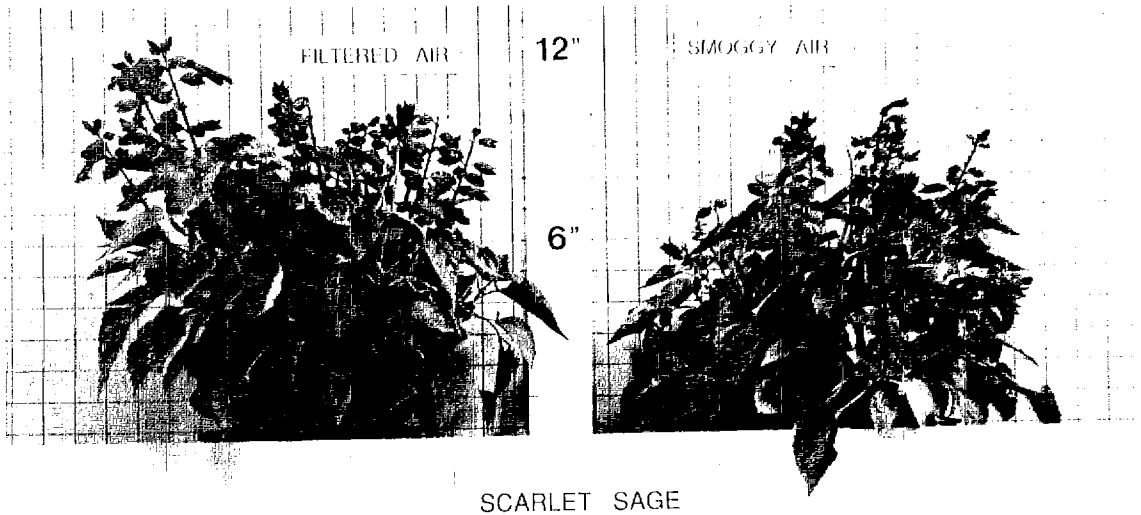


PALE LEAVES
REDUCED GROWTH
BASIL
Ociumum basilicum



PALE LEAVES
REDUCED GROWTH

SCARELT SAGE
Salvia splendens



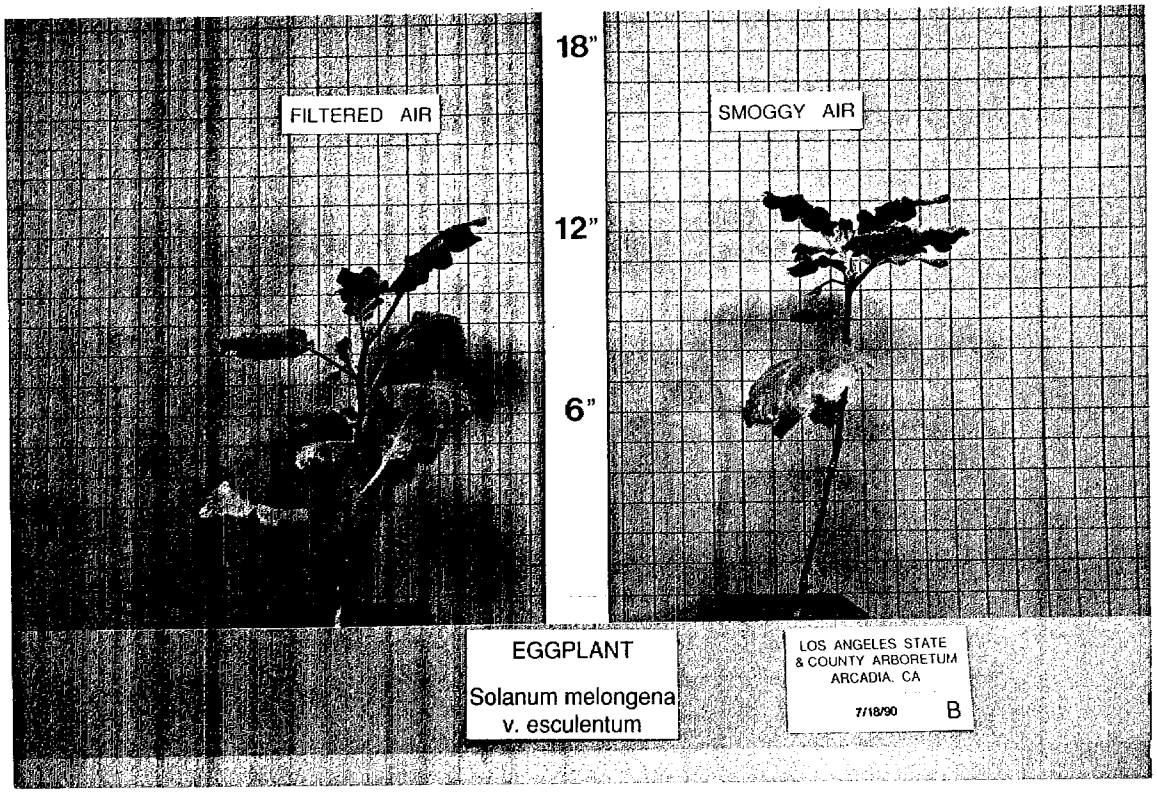
SCARLET SAGE

salvia splendens

LOS ANGELES STATE
6/20/90

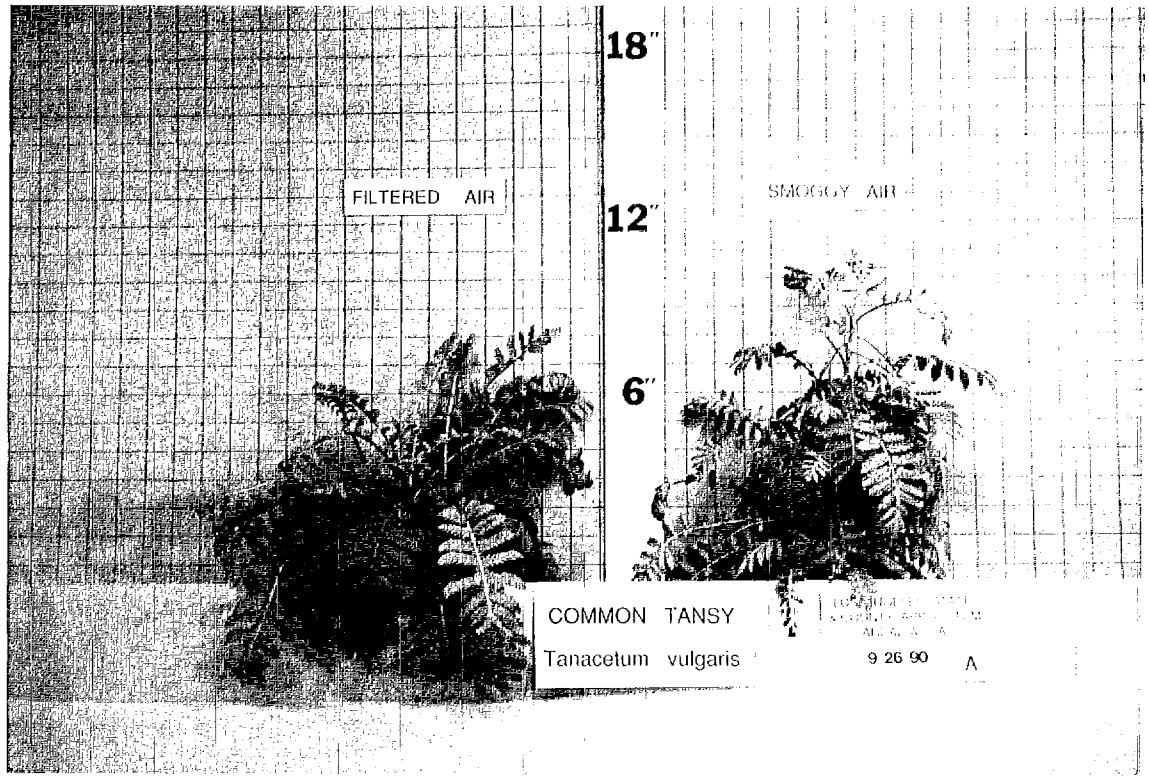
A

PALE LEAVES
REDUCED GROWTH
EGGPLANT
Solanum melongena



PALE LEAVES
REDUCED GROWTH

COMMON TANSY
Tanacetum vulgaris



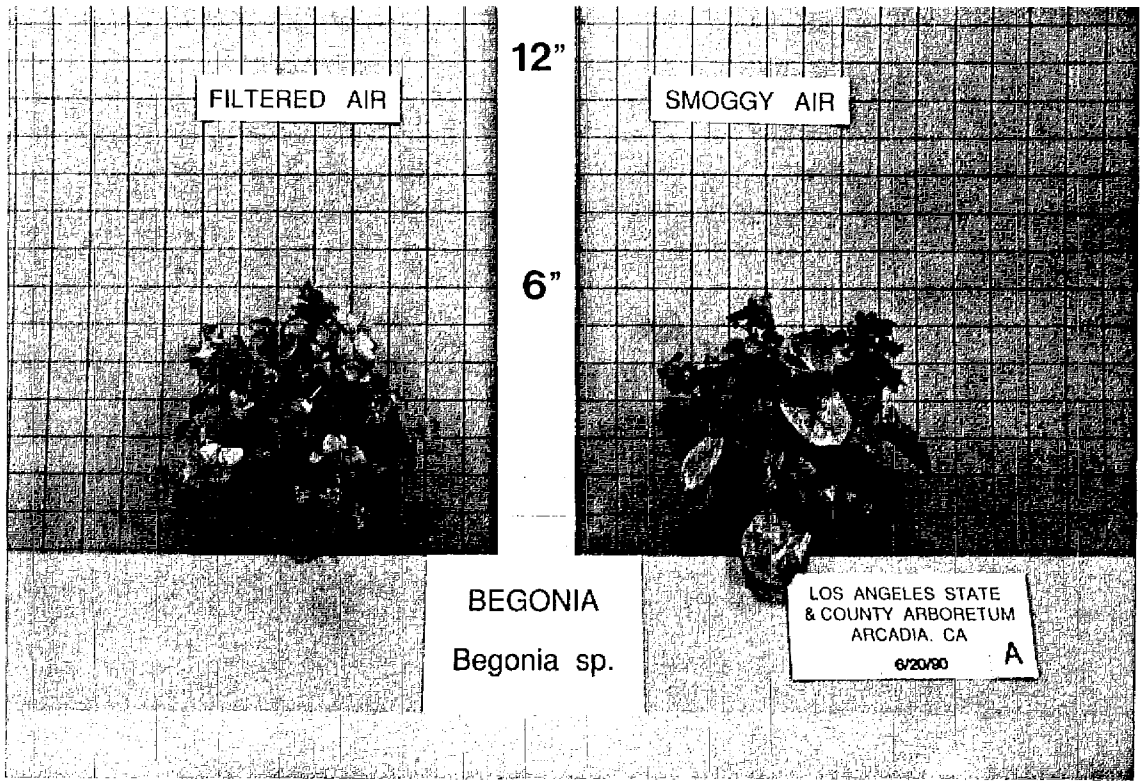
RESPONSE TO AMBIENT AIR POLLUTION: SPOTTED LEAVES AND REDUCED GROWTH

SCIENTIFIC NAME	COMMON NAME
Begonia sp.	BEGONIA
Phaseolis vulgaris	BUSH BEAN
Phaseolis vulgaris	KENTUCKY BLUE BEAN
Phaseolis vulgaris	PINTO BEAN
Raphanus sativus	RADISH
Vitus sp.	NIAGRA GRAPE
Zea mays	CORN

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

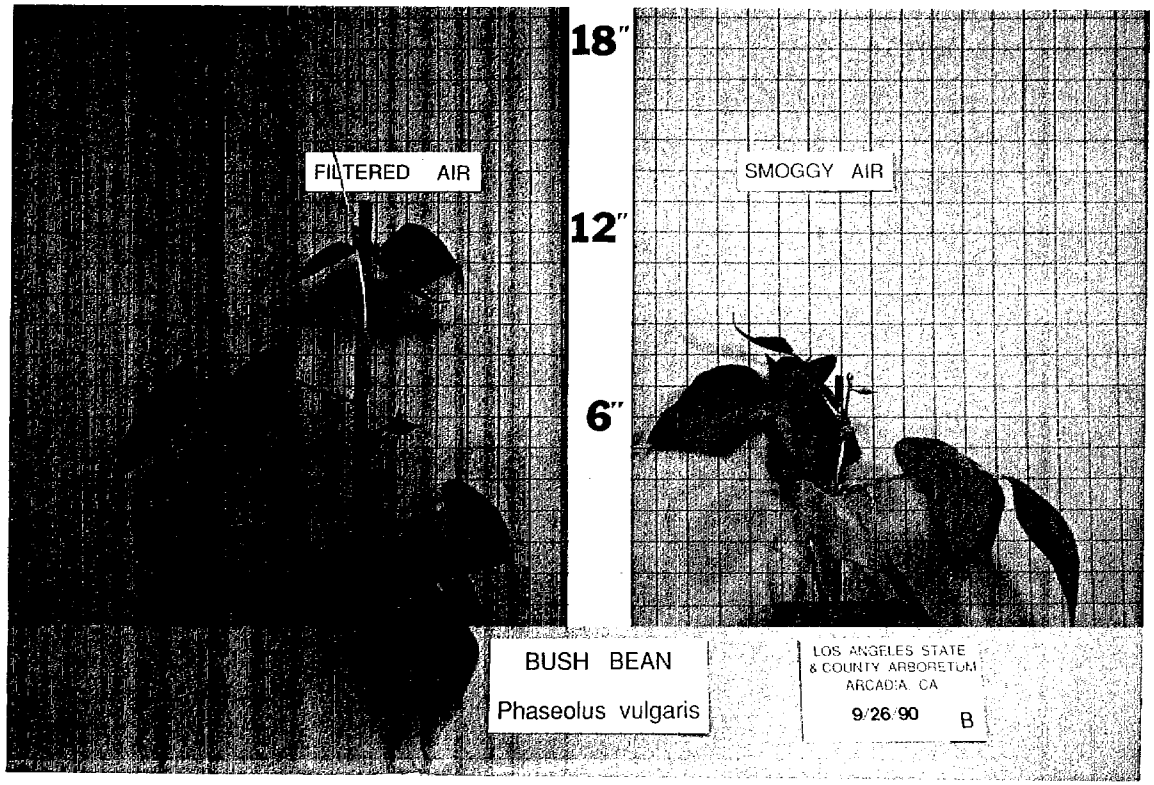
SPOTTED LEAVES
REDUCED GROWTH

BEGONIA
Begonia sp.



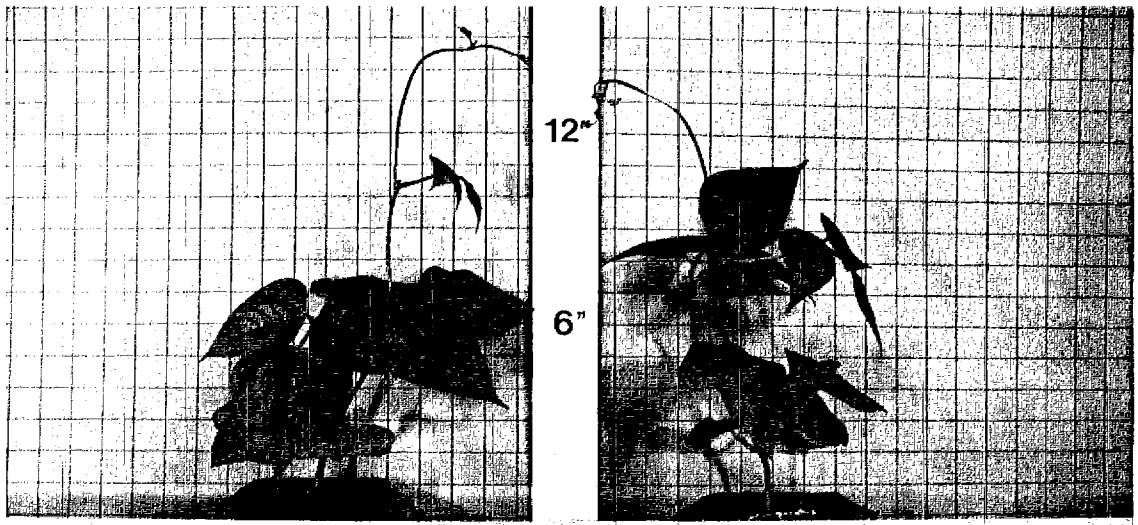
SPOTTED LEAVES
REDUCED GROWTH

BUSH BEAN
Phaseolus vulgaris



SPOTTED LEAVES
REDUCED GROWTH

KENTUCKY BLUE BEAN
Phaseolus vulgaris



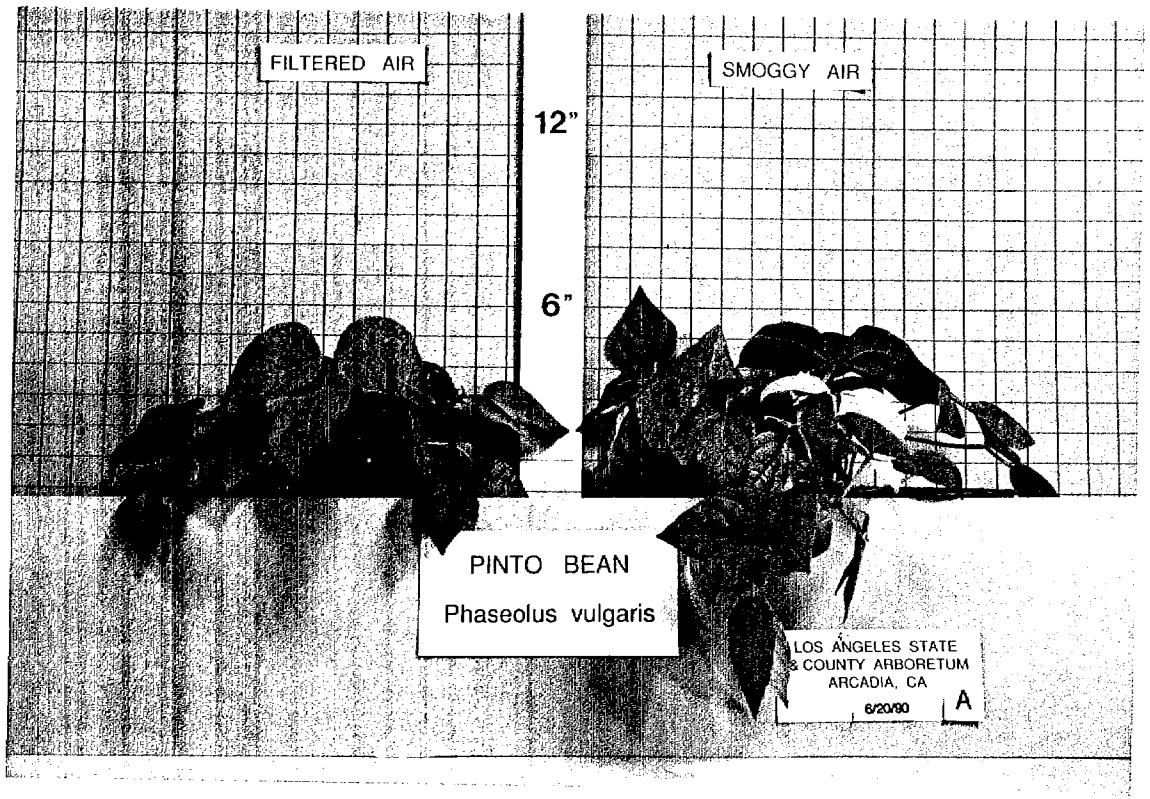
FILTERED AIR
LOS ANGELES STATE & COUNTY ARBORETUM

KENTUCKY BLUE BEAN
Phaseolus vulgaris

SMOGGY AIR
ARCADIA, CA
4/11/90 B

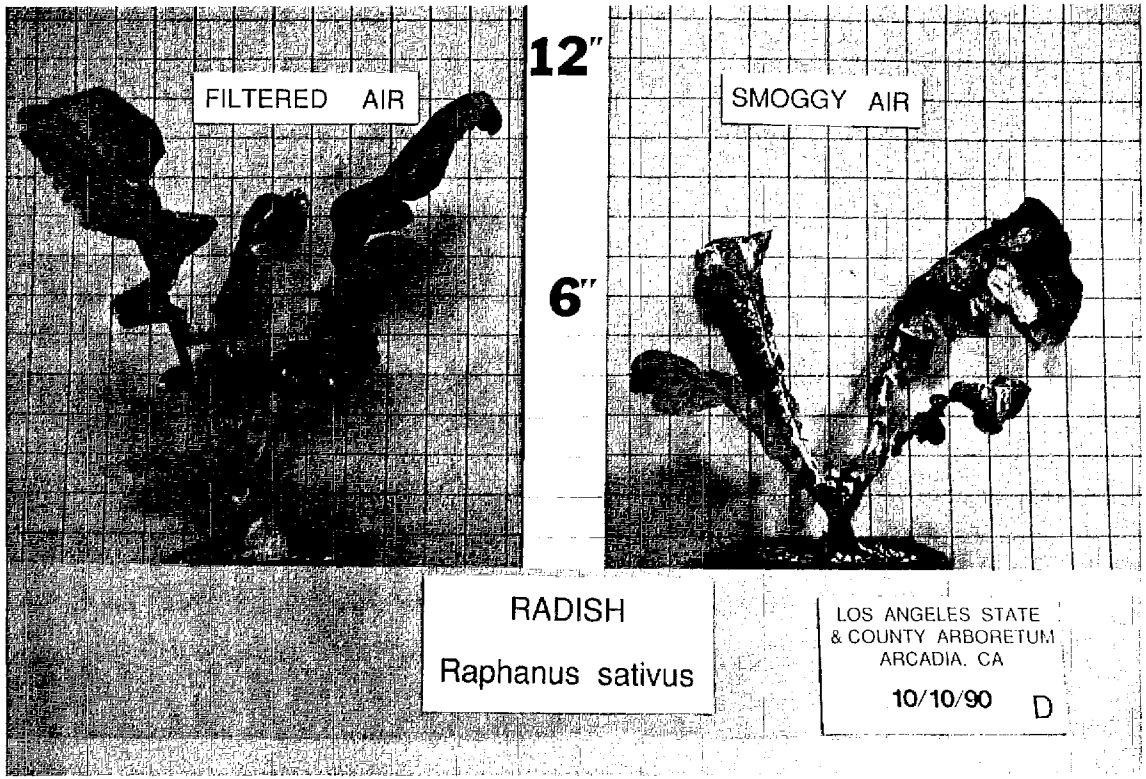
SPOTTED LEAVES
REDUCED GROWTH

PINTO BEAN
Phaseolus vulgaris



SPOTTED LEAVES
REDUCED GROWTH

RADISH
Raphanus sativus

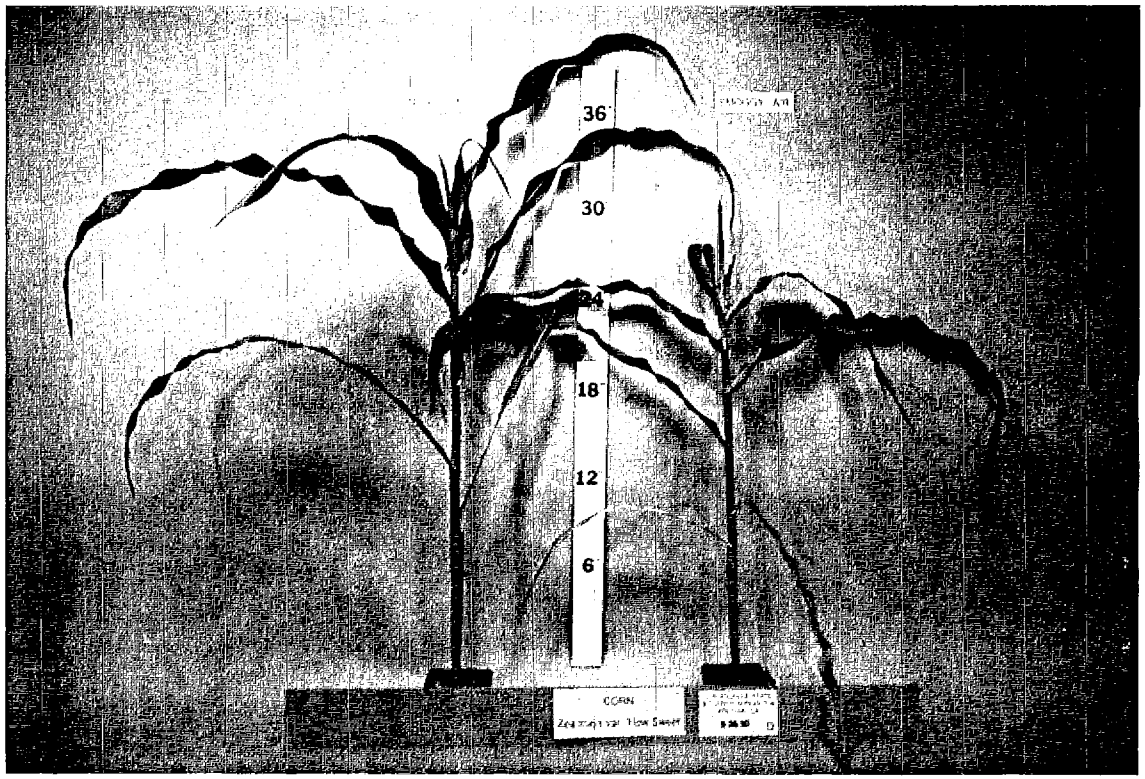


SPOTTED LEAVES
REDUCED GROWTH

NIAGRA GRAPE
Vitis sp.

SPOTTED LEAVES
REDUCED GROWTH

CORN
Zea mays



RESPONSE TO AMBIENT AIR POLLUTION: FEWER LEAVES AND REDUCED GROWTH

SCIENTIFIC NAME	COMMON NAME
Bougainvillea sp.	BOUGAINVILLEA
Cyclamen sp.	FLOREST'S CYCLAMEN
Impatiens sp.	BUSY LIZZIE

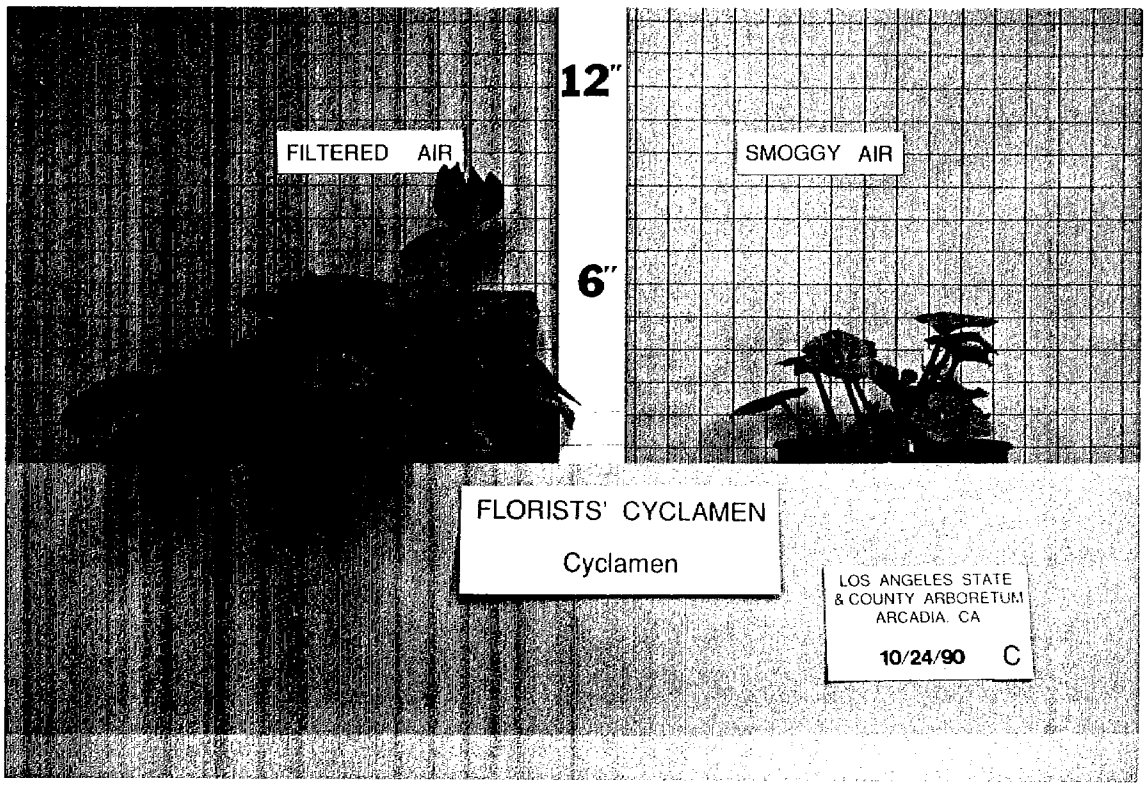
LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

FEWER FLOWERS
REDUCED GROWTH

BOUGAINVILLEA
Bougainvillea sp.

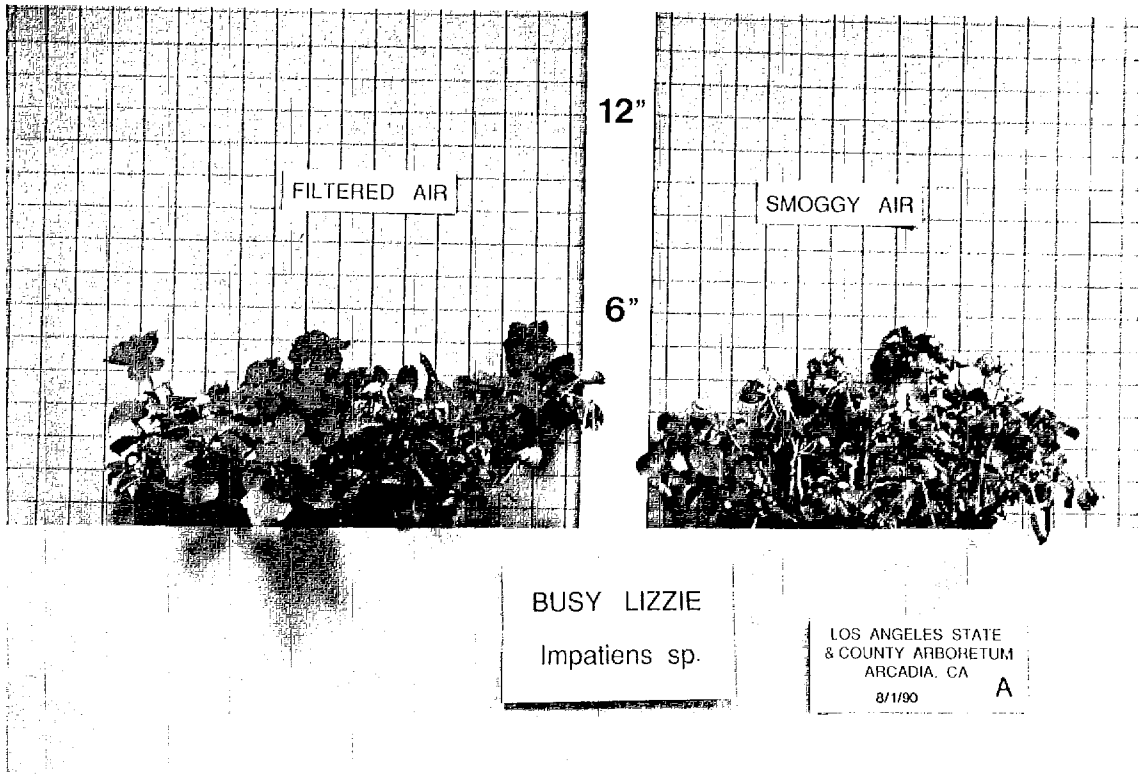
FEWER FLOWERS
REDUCED GROWTH

CYCLAMEN
Cyclamen sp.



FEWER FLOWERS
REDUCED GROWTH

BUSY LIZZIE
Impatiens sp.



RESPONSE TO AMBIENT AIR POLLUTION: FEWER FRUITS AND REDUCED GROWTH

SCIENTIFIC NAME	COMMON NAME
Ficus carica	FIG

FEWER FRUIT
REDUCED GROWTH

FIG
Ficus carica

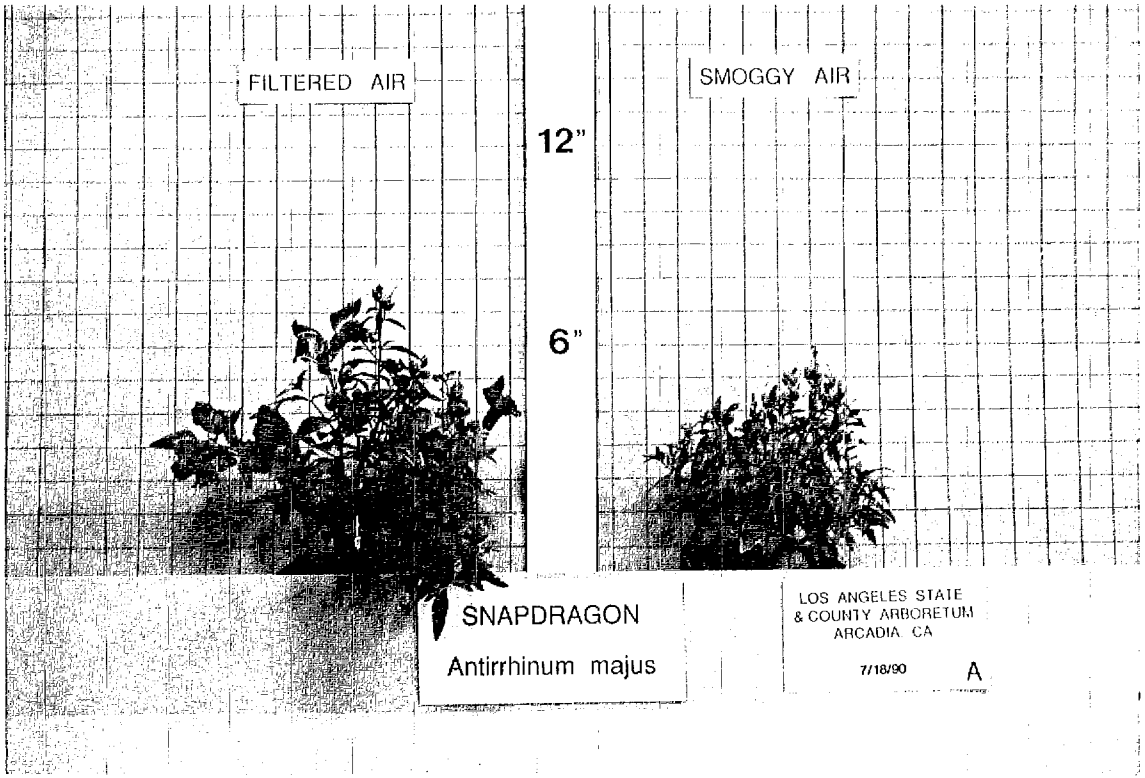
RESPONSE TO AMBIENT AIR POLLUTION: FEWER FLOWERS AND REDUCED LIFE SPAN

SCIENTIFIC NAME	COMMON NAME
Antirrhinum majus	SNAPDRAGON

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

FEWER FLOWERS
DIES SOONER

SNAPDRAGON
Antirrhinum majus



RESPONSE TO AMBIENT AIR POLLUTION: REDUCED GROWTH AND REDUCED LIFE SPAN

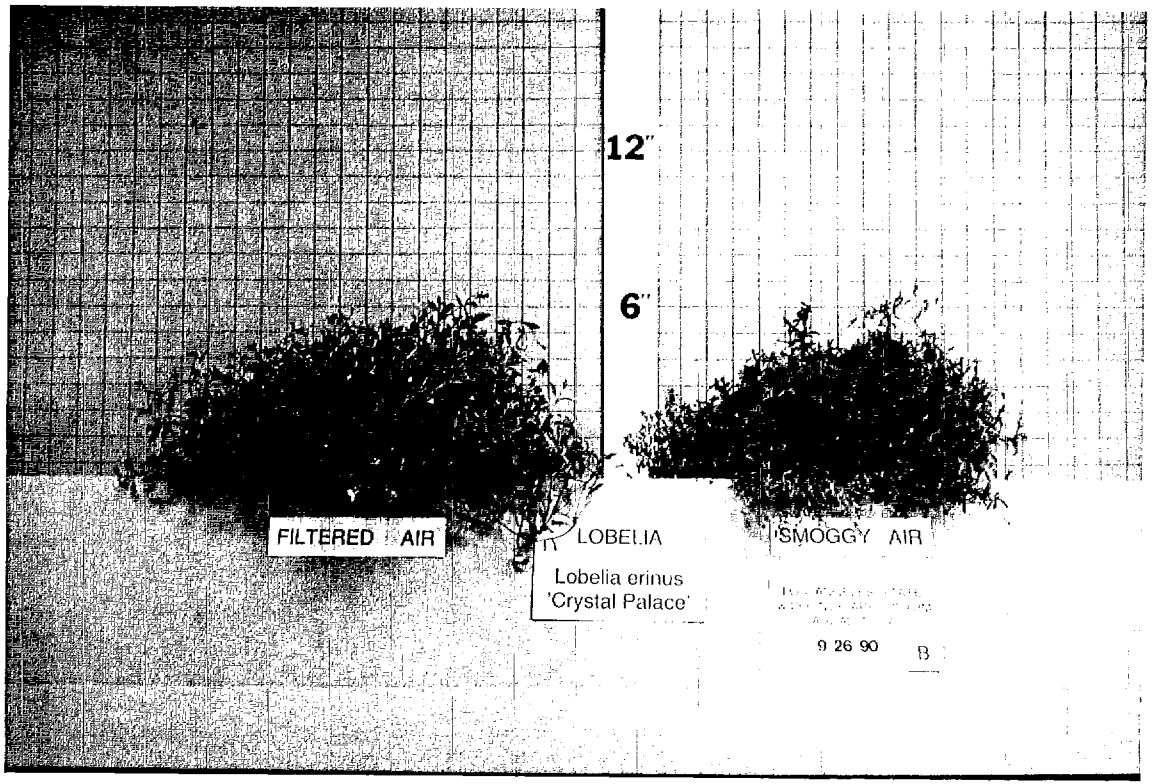
SCIENTIFIC NAME	COMMON NAME
Lobelia erinus	CRYSTAL PALACE LOBELIA

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

REDUCED GROWTH DIES SOONER

CRYSTAL PALACE LOBELIA

Lobelia erinus



RESPONSE TO AMBIENT AIR POLLUTION: LEAF SPOTS AND REDUCED LIFE SPAN

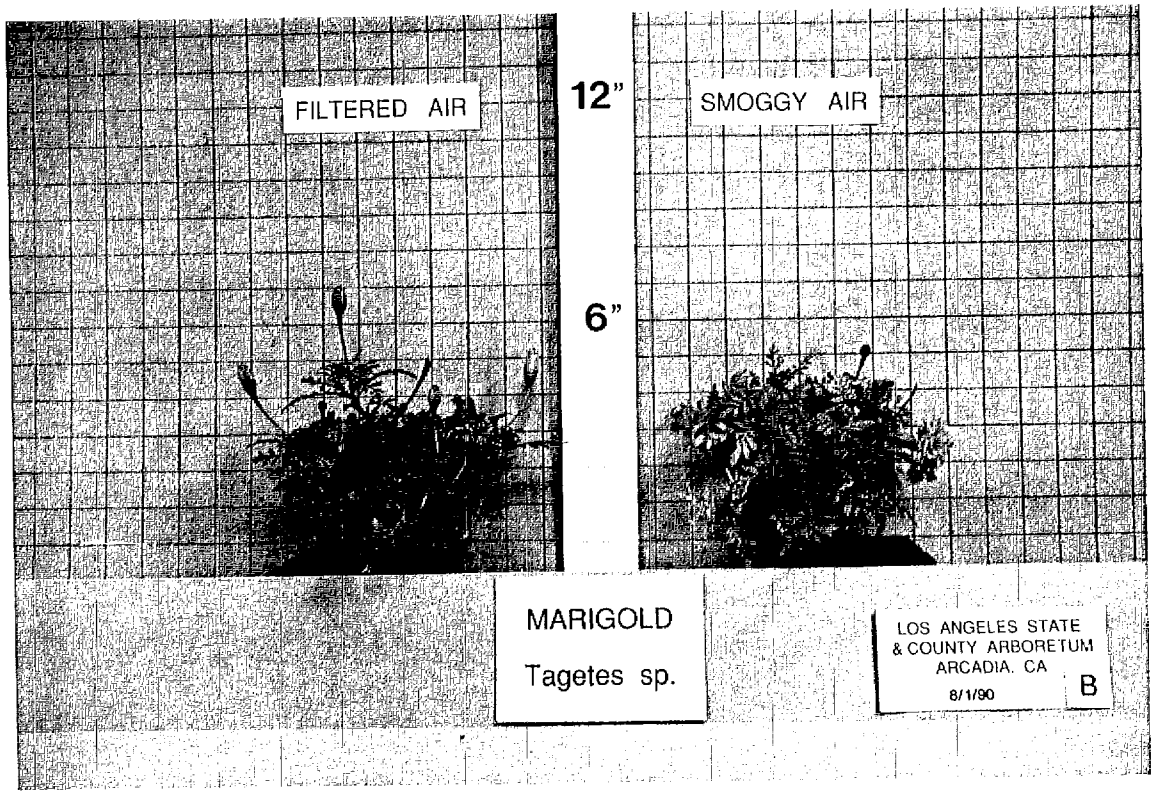
SCIENTIFIC NAME	COMMON NAME
Tagetes sp.	MARIGOLD

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

LEAF SPOTS DIES SOONER

MARIGOLD

Tagetes sp.



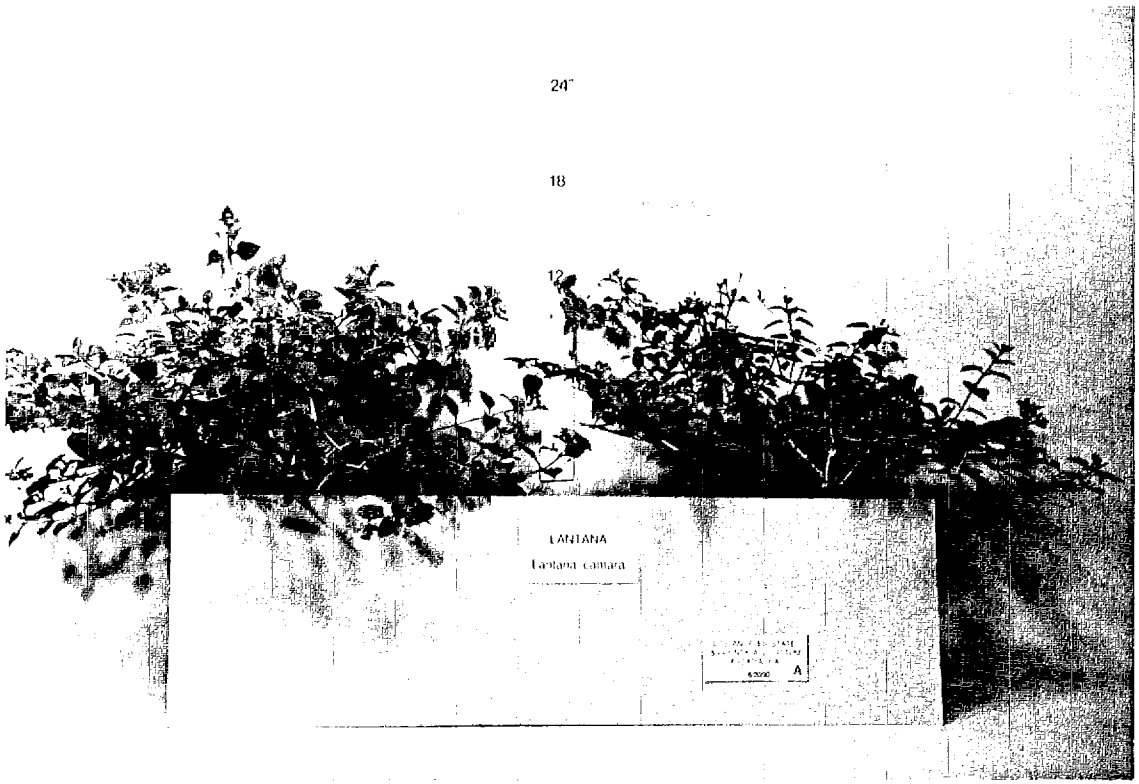
RESPONSE TO AMBIENT AIR POLLUTION: FEWER FLOWERS AND SCRAGGLY GROWTH

SCIENTIFIC NAME	COMMON NAME
Lantana camara	LANTANA

FEWER FLOWERS
SCRAGGLY GROWTH

LANTANA

Lantana sp.



RESPONSE TO AMBIENT AIR POLLUTION: PALE & SPOTTED LEAVES, REDUCED GROWTH

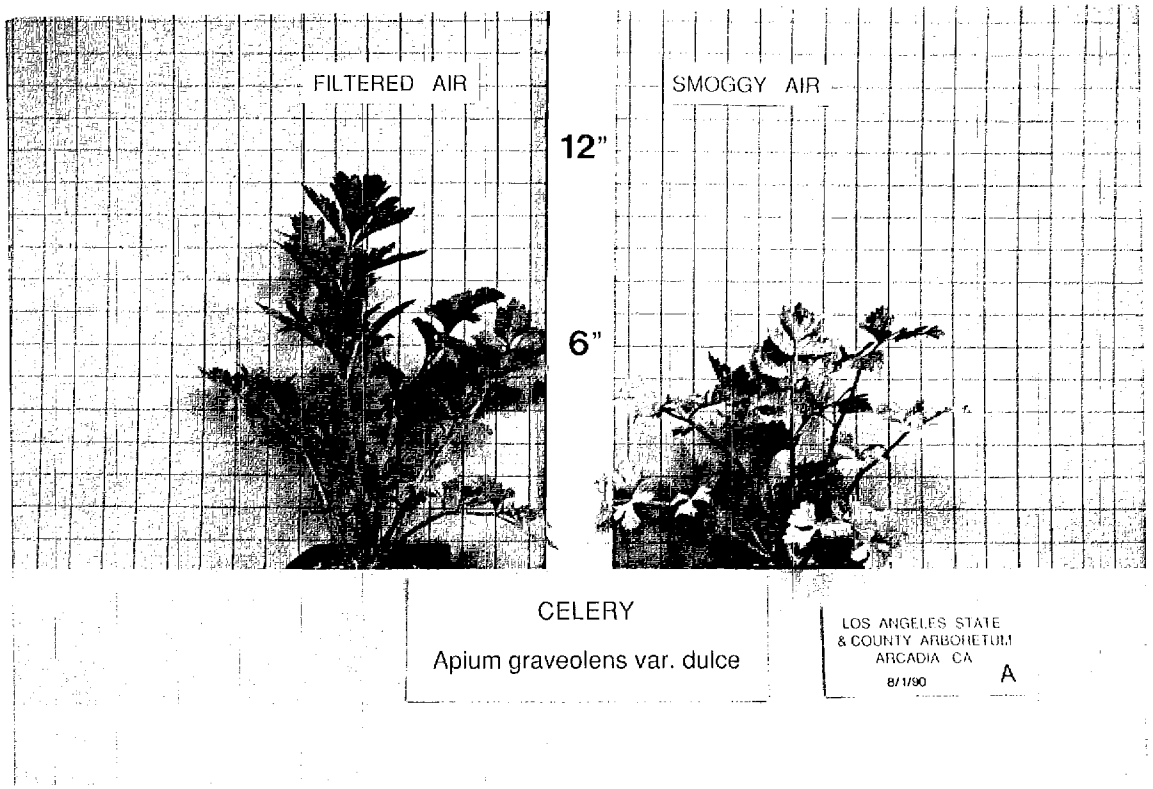
SCIENTIFIC NAME	COMMON NAME
Apium graveolens var. dulce	CELERY
Aquilegia sp.	COLUMBINE
Asplenium bulbiferum	MOTHER FERN
Coriandrum sativum	CORIANDER
Daucus carota var. sativus	CARROT
Petroselium crispum	PARSLEY
Primula sp.	PRIMROSE

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

PALE, SPOTTED LEAVES
REDUCED GROWTH

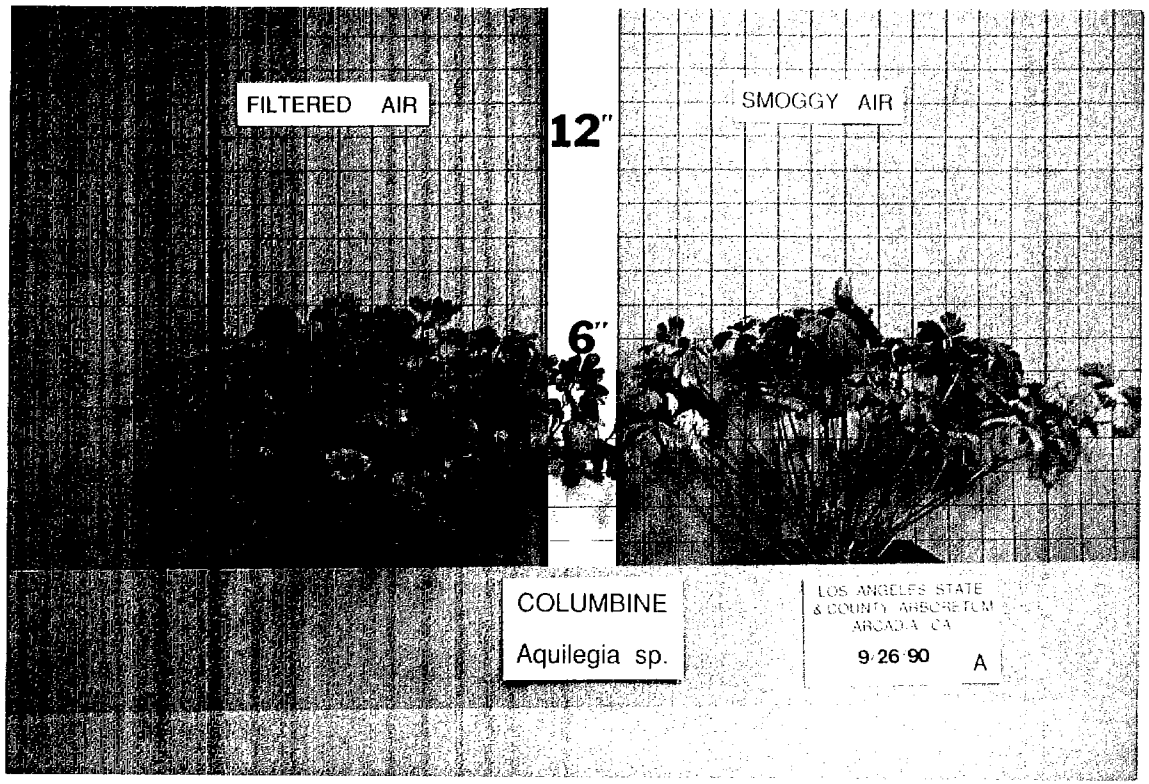
CELERY

Apium graveolens var. dulce



PALE, SPOTTED LEAVES
REDUCED GROWTH

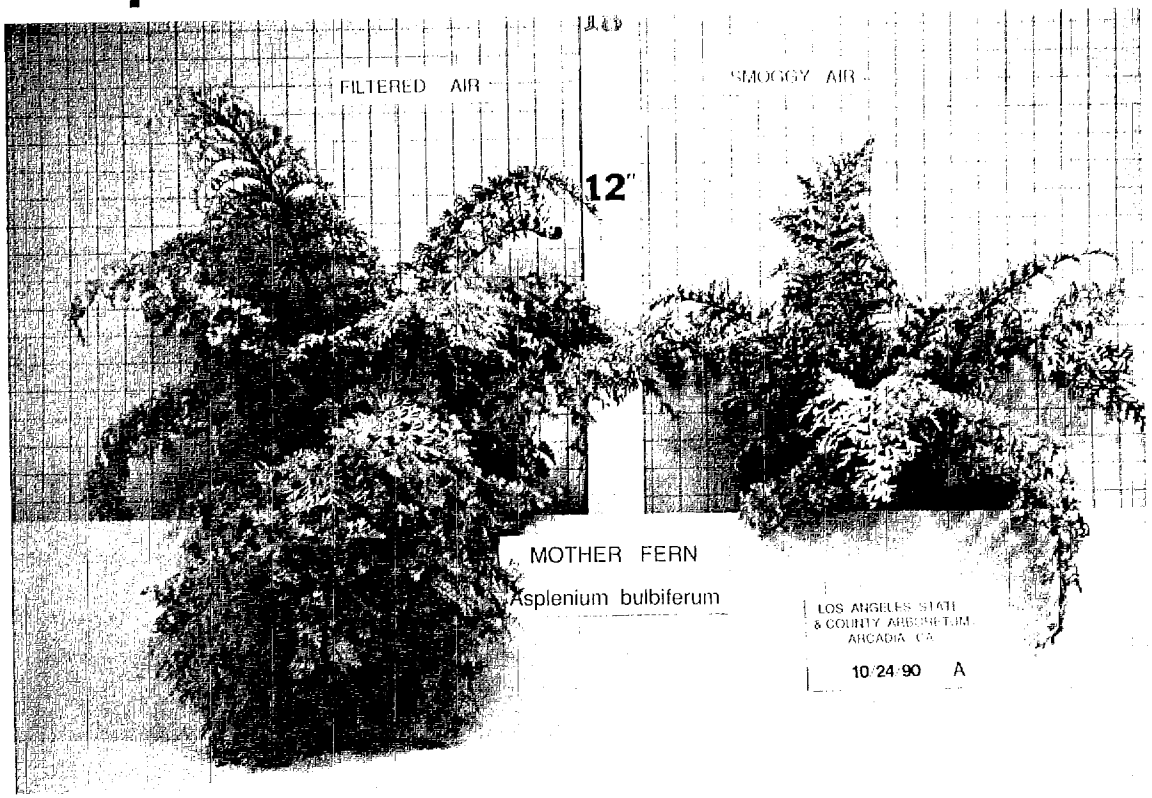
COLUMBINE
Aquilegia sp.



PALE, SPOTTED LEAVES REDUCED GROWTH

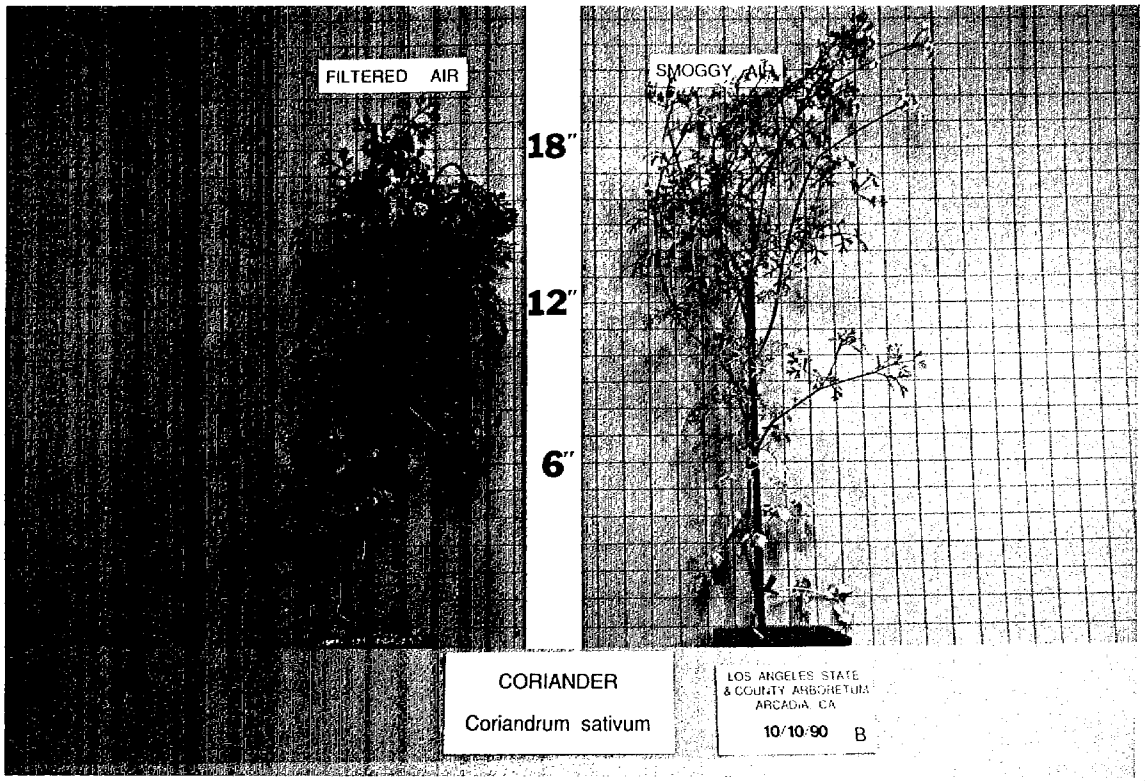
MOTHER FERN

Asplenium bulbiferum



PALE, SPOTTED LEAVES
REDUCED GROWTH

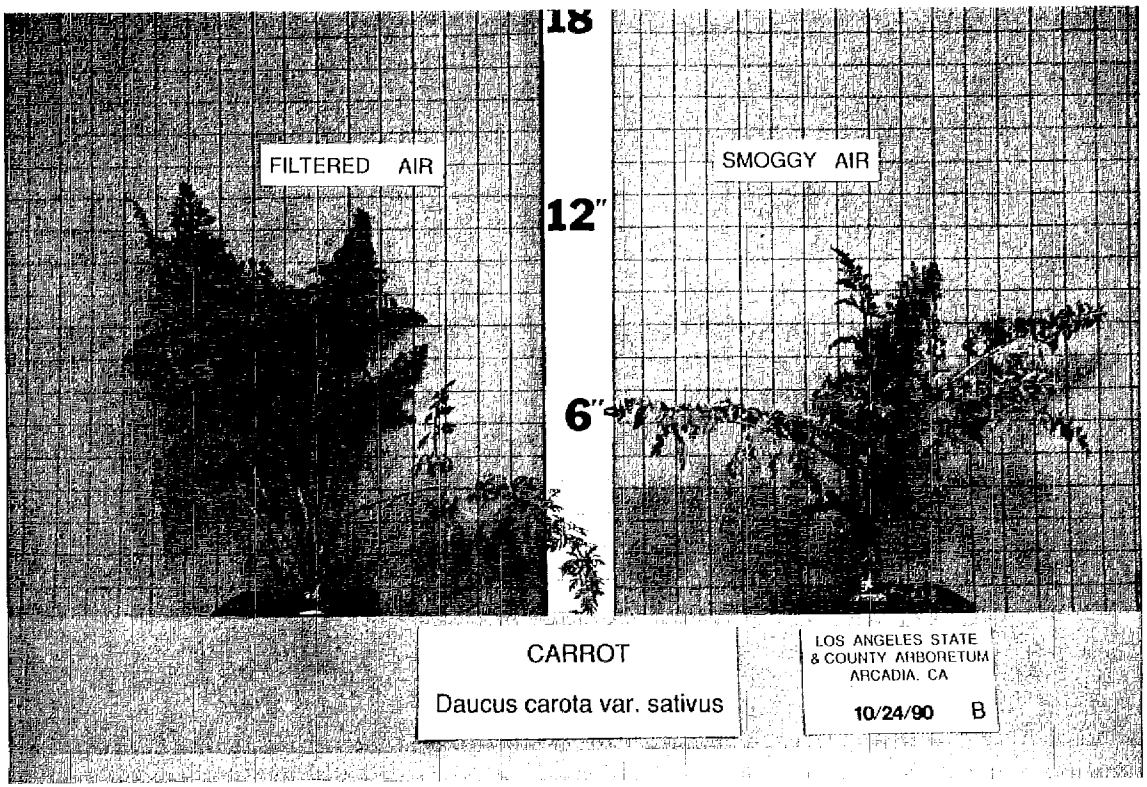
CORIANDER
Coriandrum sativum



PALE, SPOTTED LEAVES
REDUCED GROWTH

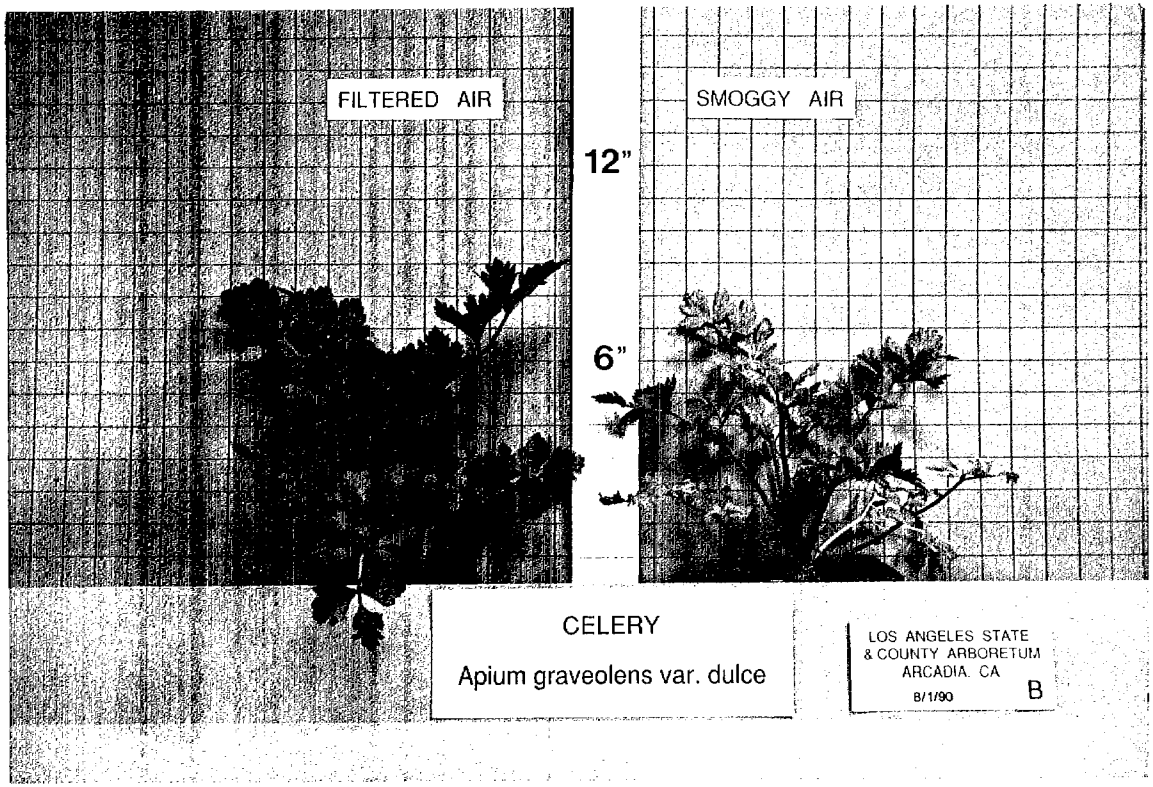
CARROT

Daucus carota var. sativus



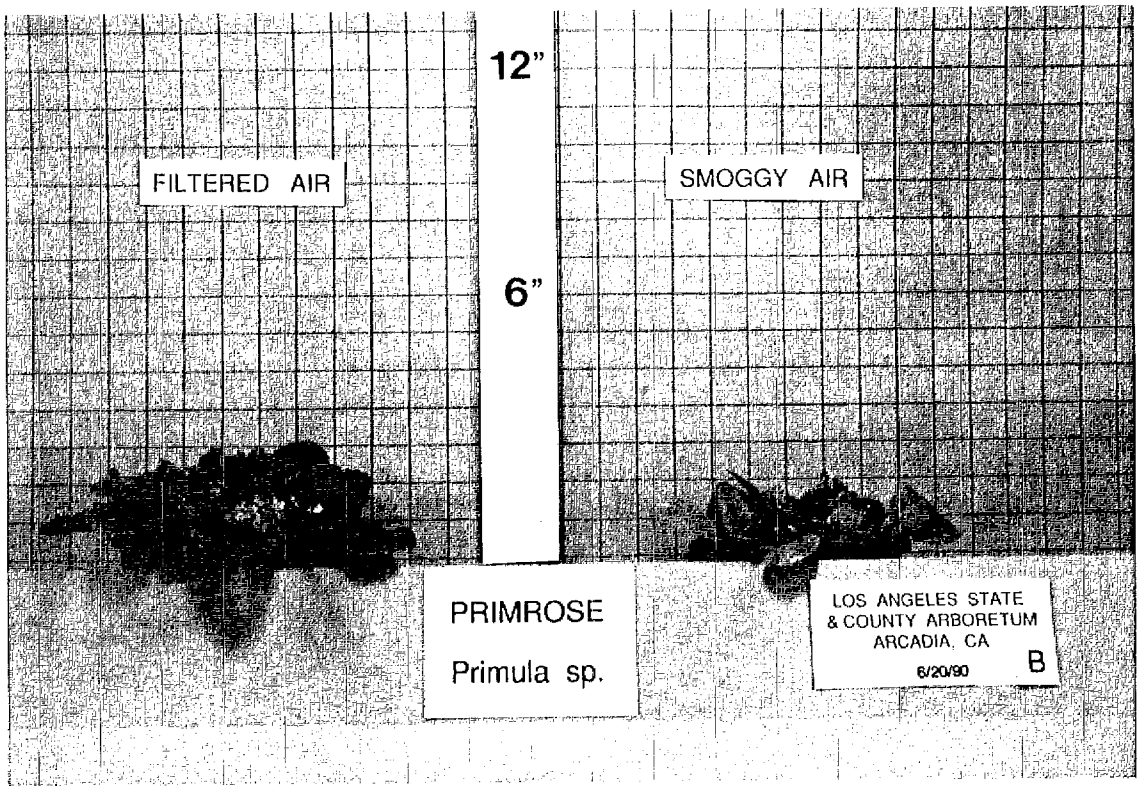
PALE, SPOTTED LEAVES
REDUCED GROWTH

PARSLEY
Petroselium crispum



PALE, SPOTTED LEAVES
REDUCED GROWTH

PRIMROSE
Primula sp.



RESPONSE TO AMBIENT AIR POLLUTION:
LEAF SPOTS, FEWER FLOWERS, REDUCED GROWTH

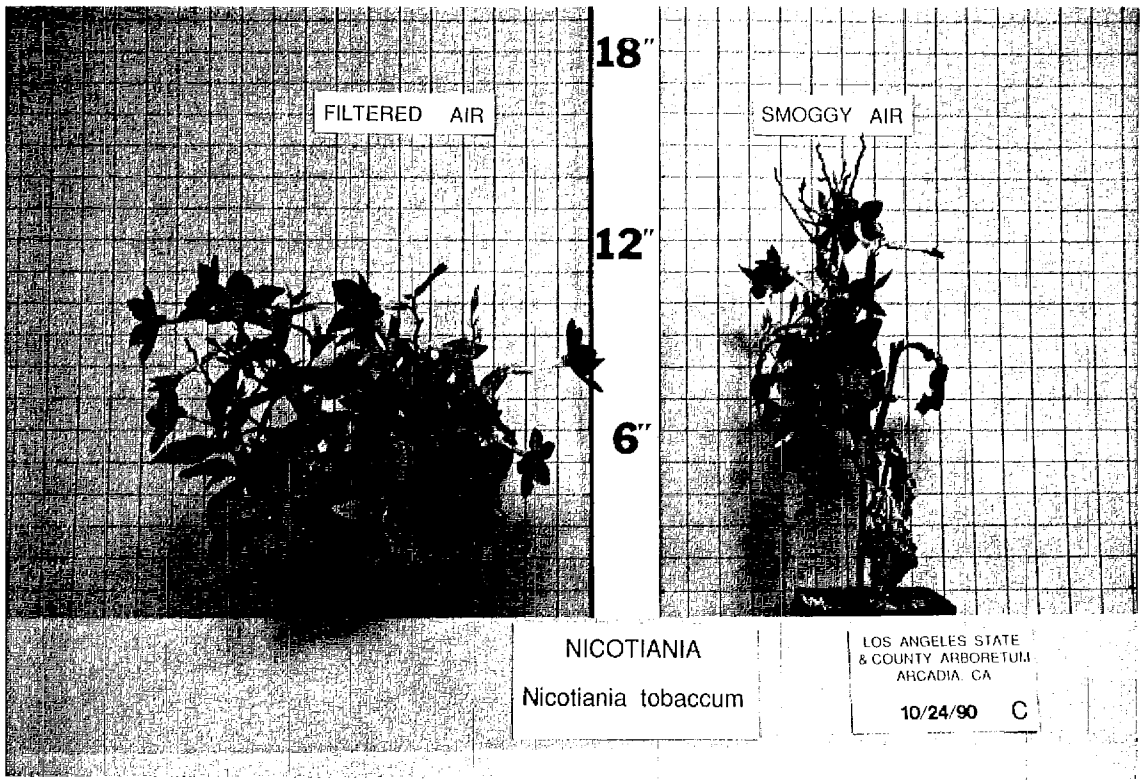
SCIENTIFIC NAME	COMMON NAME
Nicotiana tabacum	NICOTIANA
Petunia hybridus	PETUNIA
Viola sp.	VIOLA

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

LEAF SPOTS, FEWER FLOWERS, REDUCED GROWTH

NICOTIANA

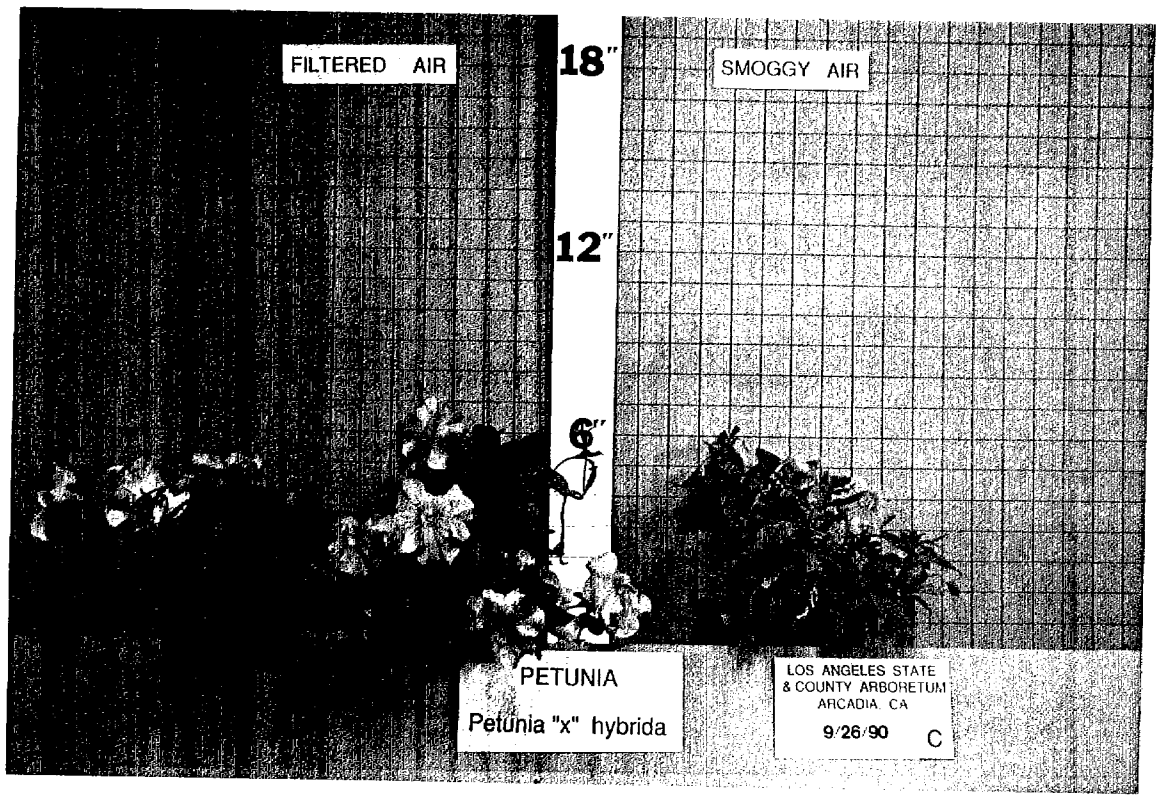
Nicotiana tabacum



LEAF SPOTS, FEWER FLOWERS, REDUCED GROWTH

PETUNIA

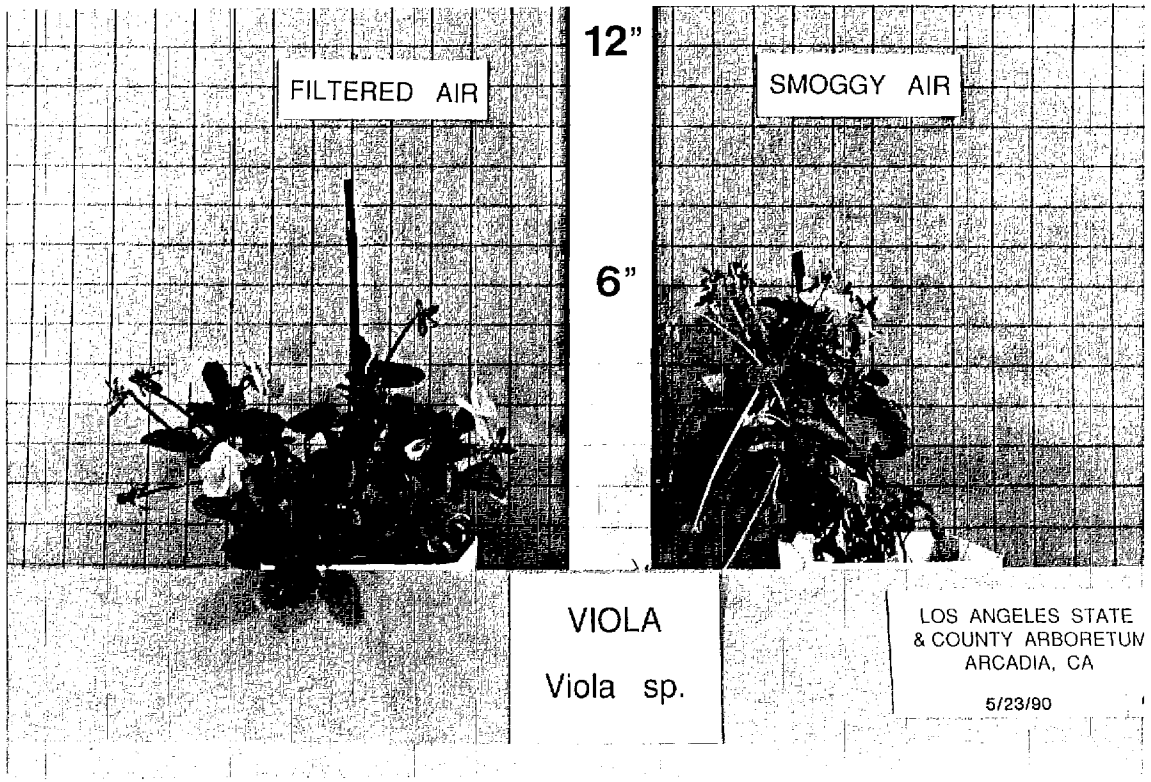
Petunia hybridus



LEAF SPOTS, FEWER FLOWERS, REDUCED GROWTH

VIOLA

Viola sp.



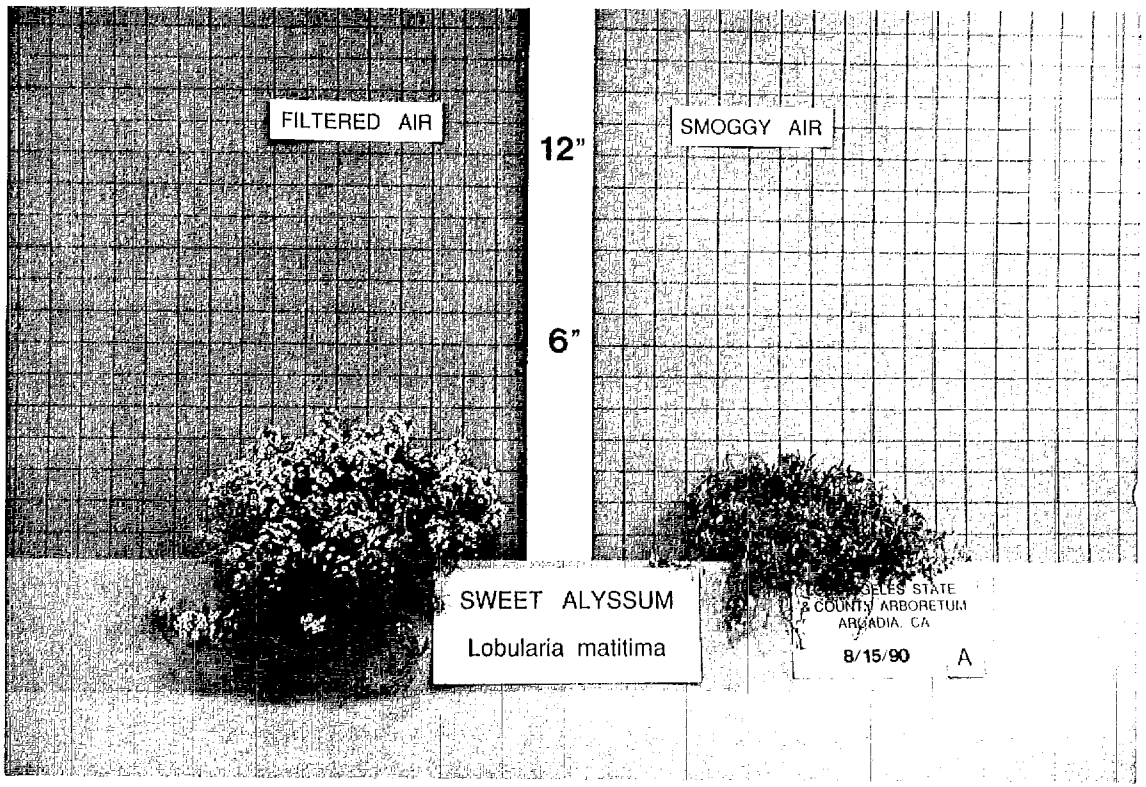
RESPONSE TO AMBIENT AIR POLLUTION:
FEWER FLOWERS, PALE LEAVES, REDUCED LIFE SPAN

SCIENTIFIC NAME	COMMON NAME
Lobularia matitima	SWEET ALYSSUM

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

FEWER FLOWERS, PALE LEAVES
DIES SOONER

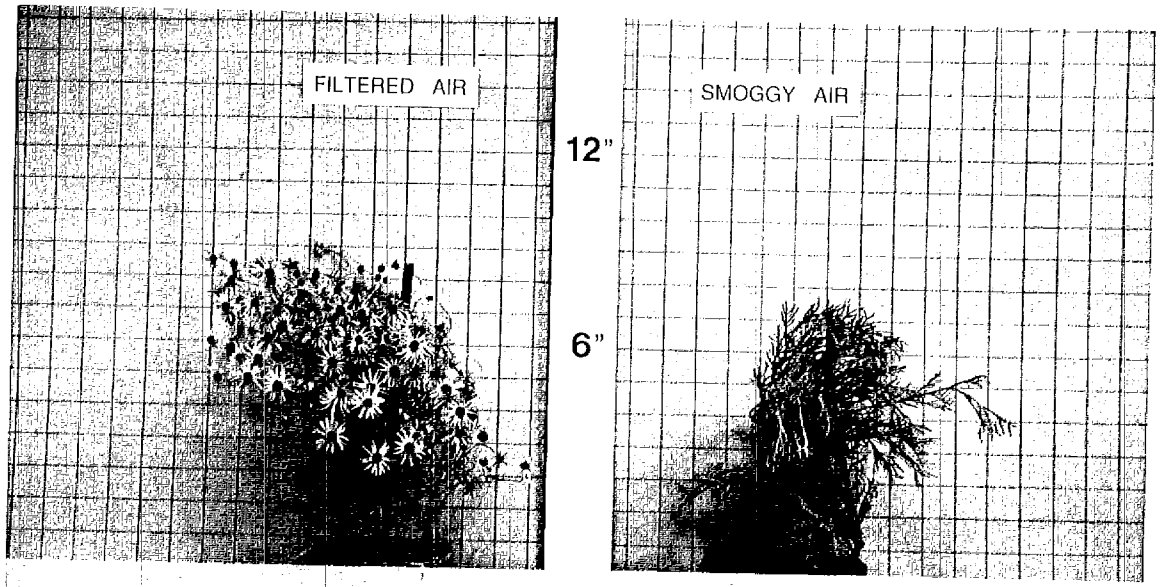
SWEET ALYSSUM
Lobularia matitima



RESPONSE TO AMBIENT AIR POLLUTION: FEWER FLOWERS, REDUCED GROWTH & LIFE SPAN

SCIENTIFIC NAME	COMMON NAME
Brachcome iberidifolia	SWAN RIVER DAISY

LOS ANGELES STATE AND COUNTY ARBORETUM, ARCADIA 90-91

FEWER FLOWERS, REDUCED GROWTH AND DIES SOONER

SWAN RIVER DAISY
Brachycome iberidifolia