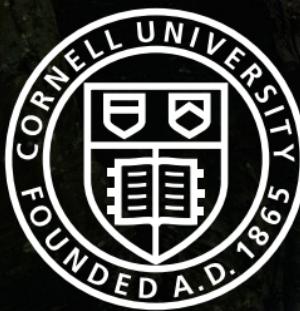


# Long Island Horticulture Resource Guide



**Cornell Cooperative Extension  
Suffolk County**

[www.ccesuffolk.org](http://www.ccesuffolk.org)

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# **Cornell Cooperative Extension**

*Building Strong and Vibrant New York Communities*

The Cornell University Cooperative Extension educational system enables people to improve their lives and communities through partnerships that put experience and research knowledge to work.

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- develops local leaders who use CCE knowledge to inform decisions;
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- strives to help participants make informed choices using the best knowledge available;
- connects learners with educational resources found in locations throughout the world;
- consults with individuals and groups on multiple topics;
- provides numerous types of resources.

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- statewide and community agencies, organizations, and businesses;
- New York State's people.

*Cornell Cooperative Extension is funded in part by Suffolk County through the office of the County Executive and the County Legislature.*

## **Who To Contact for Questions and Diagnoses\***

### **In Suffolk County - [www.ccesuffolk.org](http://www.ccesuffolk.org)**

*Extension Specialists for Nursery and Landscape*

**Nora Catlin**, LIHREC Director/Floriculture  
njc23@cornell.edu • 631-727-3595

**Margery Daughtrey**, Ornamental Pathology  
mld9@cornell.edu • 631-727-3595

**Jared Dyer**, Entomologist Specialist  
jd852@cornell.edu • 631-727-3595

**Dan Gilrein**, Assoc. Ag Program Director / Ornamental Entomology  
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**Andy Senesac**, Weed Science  
afs2@cornell.edu • 631-727-3595

**Mina Vescera**, Nursery / Landscape Specialist  
mv365@cornell.edu • 631-603-9613 (cell)

*\*A complete directory of Suffolk County Agriculture Staff starts on page 129.*

### **In Nassau County - [www.ccenassau.org](http://www.ccenassau.org)**

**Cornell Cooperative Extension of Nassau County  
Horticulture Center**

*Diagnostic Lab, Soil testing, Demonstration & Community  
Gardens at East Meadow Farm  
832 Merrick Avenue, East Meadow, NY 11554*

*Garden Helpline: 516-565-5265 x200  
nassau@cornell.edu*

**Vincent Drzewucki**, Horticulture and Urban Forestry Educator  
vad37@cornell.edu

**Cover Photo:** *Fagus sylvatica 'Purpurea'*

### **Suffolk County CCE Nursery and Landscape Program Website**

Useful information for nursery growers and landscape professionals is available on the CCE Website at <[www.ccesuffolk.org/agriculture](http://www.ccesuffolk.org/agriculture)>. You'll learn about the latest hort news, upcoming conferences, and current projects.



# Horticulture Diagnostic Lab

## ***Horticulture Consulting and Recommendations***

**Plant problems and disease diagnoses**  
**Insect identification**  
**Tick identification**  
**Soil pH testing**

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### **EASTERN**

#### **Cornell Cooperative Extension of Suffolk County**

423 Griffing Avenue, Riverhead, NY 11902

Mon-Fri 9AM – 4:00PM

Phone calls: 9AM – Noon

Tel: 631-727-4126

### **WESTERN**

#### **Bayard Cutting Arboretum**

Montauk Highway, Great River, NY 11739

Tel: 631-727-4126

Phone Calls: 9AM – Noon

Sample Drop-off: 10AM – 4:30PM

Thursday & Friday

*April through October*

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For instructions, including costs for  
submitting samples to the diagnostic labs;  
visit our website at [www.ccesuffolk.org](http://www.ccesuffolk.org)

# **Pesticide Emergency Numbers**

## **Pesticide Spills and Accidents:**

CHEMTRAC, 800-424-9300

## **Pesticide & Information Emergencies**

National Pesticide Information Center, 800-858-7378

Hours for the Information Center, M-F, 8 AM - 12 PM

<http://npic.orst.edu>

npic@ace.orst.edu

## **Report Oil & Hazardous Material Spills**

NYS-DEC, 800-457-7362 (in NYS)

518-457-7362 (outside NYS)

## **Information on Symptoms & Treatment:**

Long Island Regional Poison & Drug Info Center

Winthrop University Hospital

259 1st St.

Mineola, NY 11501

Emergency - 800-222-1222

Information - 516-663-2650

## **Agricultural Nurse Program**

New York Center for Agricultural Medicine & Health (NYCAMH)

800-343-7527

# Planting Tips

## Balled & Burlapped Plants

Excavate soil on top of the root ball to expose trunk flare. Then dig the planting hole only deep enough so the trunk flare will be at ground level. It is better to plant shallower than deeper as long as the top of the ball and roots are protected with a mulch.

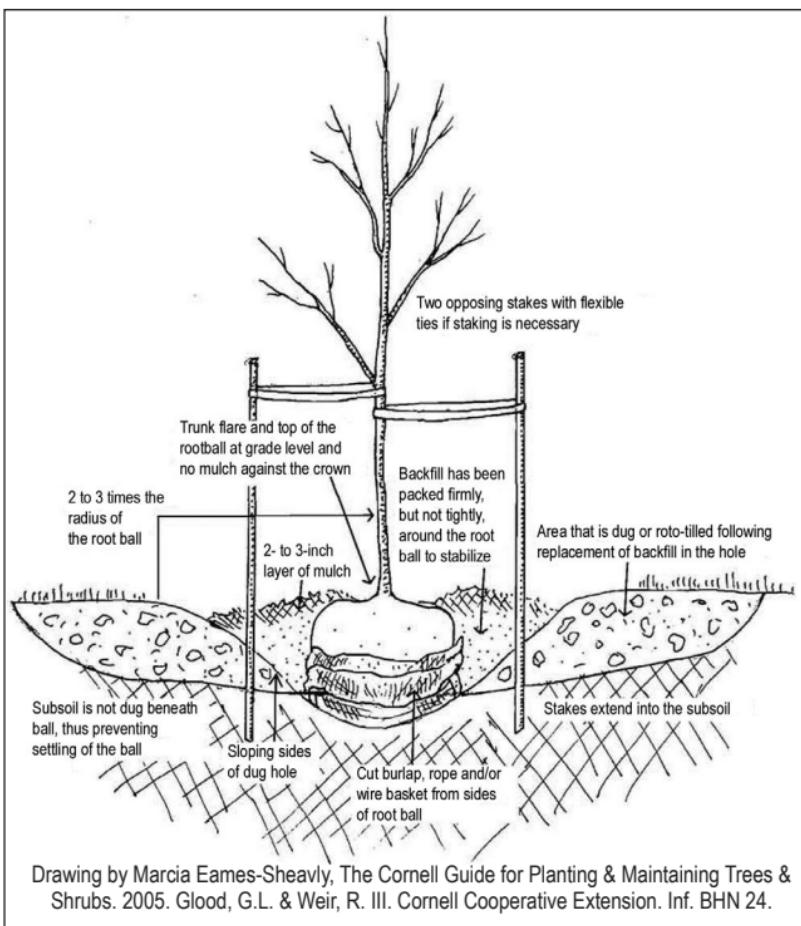
Dig the planting hole 2 – 3 times as wide as the ball.

Do not disturb the bottom of the hole. The plant should be placed on a solid base so it won't settle from its own weight resulting in deep planting. Digging deeper will not improve drainage.

Untie the rope from around the trunk and remove.

Remove the burlap especially if it is plastic or treated to delay rotting. Untreated degradable burlap could be left on but it is better to remove partially or completely to expose the trunk flare and correct any girdling root issues before planting. If left on, be sure to loosen the top and fold over or cut off so it will not be exposed to the air.

Wire baskets should be removed when possible. At a minimum, the top of the basket should be bent back away from the trunk or cut away with bolt cutters.



Drawing by Marcia Eames-Sheavly, The Cornell Guide for Planting & Maintaining Trees & Shrubs. 2005. Glood, G.L. & Weir, R. III. Cornell Cooperative Extension. Inf. BHN 24.

Fill the hole halfway with soil and water thoroughly to settle the soil around the roots. After the water drains, completely fill in with soil and water again. Modifying the backfill with amendments is not recommended as establishment problems can occur if the soil textural differences are great. If the soil is poor, modify a larger planting area rather than just the planting hole.

Mulch the top of the planting hole with 2-3 inches of material. Do not mulch too thickly and pull the mulch away from the base of the plant.

## **Containerized Plants**

Remove the plant from the container.

Do not plant root bound plants.

Don't plant deeply! The trunk flare should be at ground level.

Slice the sides of the root mass in several areas from top to bottom to reduce circling roots. Tease the roots away from the media. Any media that falls can be mixed with the backfill to aid in the transition from the organic container media and soil.

Fill the hole halfway with soil and water thoroughly to settle the soil around the roots. After the water drains, completely fill in with soil and water again.

Mulch with 2-3 inches of material. Do not mulch too thickly and pull the mulch away from the base of the plant.

## **Post Planting Care**

**Mulch** around plants to protect the root system and conserve soil moisture. Do not plant grass around the root system. Mulched plants develop more roots and establish quicker than those with grass planted up to the trunk.

**Pruning** at the time of planting should be limited to removing broken branches and diseased wood. Removing too many live branches can delay establishment and growth.

**Water** new transplants carefully so the soil around the roots does not dry out. Recommendations on the frequency and amount of water cannot be made as such things as environmental conditions, soil texture, plant size, etc. determine it. Water will initially be removed from the soil or container ball since this is the area where intact roots exist. As new roots develop and grow outside the ball, increase the area watered. Use a soil probe to remove a core of soil from the backfill and soil ball to determine soil moisture in the root zone. Do not water based solely on the moisture of the soil surface.

**Trunk wrapping**, which is often done to newly transplanted trees to protect from sun scald, has been found to increase the incidence of certain borers such as dogwood borer and ash borer if the wrapping is never removed from the tree. Eggs are inserted under the wrapping, which protects the eggs and larva, thereby increasing survival. Also, canker diseases might develop if moisture builds up between the trunk and the wrapping. If used, trunk wraps should only be used during the season you are trying to protect the trunk and then removed. Always wrap from the bottom up.

**Wound dressings** and tree paints have not been shown to reduce or prevent decay.

## **Tree Support Systems**

Recently transplanted trees may require supplemental support in the form of staking, guying, or root ball anchoring. These tree support systems are intended to hold the tree in an upright position and limit movement of the root ball until new roots adequately anchor the tree in the soil.

However, tree support systems should only be used when necessary. A staked or guyed tree is more prone to trunk girdling and abrasion and trunk breakage than a tree that is not staked or guyed. In addition, stakes or guys that are too rigid or are left on more than one growing season can limit a tree's ability to support its own weight. Tree support systems also increase installation and maintenance costs.

Conditions that may necessitate the installation of a tree support system are: very windy planting locations, heavy foot or vehicular traffic near planting locations, very large planting material, or late fall planting of evergreens.

If a tree support system is installed on a new transplant, there are a few basic guidelines to follow:

- Stakes or guys should always be installed low on the trunk to allow upper movement of the branches. Support systems that are too rigid will not allow the tree to develop proper taper.
- The tie material should be flat, wide, smooth, and somewhat flexible. Hose-covered wire is NOT a good tie material because it causes trunk girdling. One good alternative is polypropylene fabric ties which can be found in garden supply stores.
- The tree support system should be routinely inspected to make sure that it is fully intact and not causing any girdling or abrasion.
- In most cases, the stakes or guys can be removed after one growing season. Because they are buried and do not go around the trunk, root ball anchoring systems can be left on indefinitely.

# Selecting Quality Plant Material

- Always do business with reliable and knowledgeable nurseries. Select those using the *American Standard for Nursery Stock* developed by the American Nursery/Landscape Association. Certification programs are available which acknowledge those individuals that have shown an understanding of horticultural principles.
- Plants grown nearby should be cold hardy. Plants can be purchased from areas of warmer hardiness zones provided the plants were started from genetically hardy plants. Plants purchased from warmer areas should have adequate time to acclimate to local conditions before the onset of colder weather.
- Purchase plants from several sources and follow their performance. Establishment and growth should be recorded to determine any differences that may be caused from production and/or post harvest handling.
- Plants should be free of disease problems, insect and weed infestations, mechanical damage, and cankers.
- Plants should be pruned properly so they have acceptable form and branch structure for species.
- Well developed callus at pruning wounds is a good indicator of plant health.
- Root systems should be kept moist following harvesting.
- The base of the trunk should be free of girdling roots.
- Plants should have adequate twig growth for several years prior to harvesting.

## Bare-root plants

- Bare-root material should remain dormant and root systems kept moist and protected from desiccation.
- Plant bare-root material as soon as possible.
- Root system should be adequately developed for species and age.
- Avoid or discard inferior plants.

## Balled & Burlapped plants

- Trunk of plant should be within 10% of the center of the ball.
- Ball size should be appropriate for species and plant size.
- Trunk flare should be at the surface of the ball.
- Soil ball should be well shaped and intact.

- Most tree species should have a well developed central leader at nursery sizes.

## Containerized plants

- Root system should be well developed and hold the root ball together when removed from the container.
- Plants that are pot-bound or have girdling roots should be avoided.
- Plants should be the appropriate size for the container.

# Planting Hedges

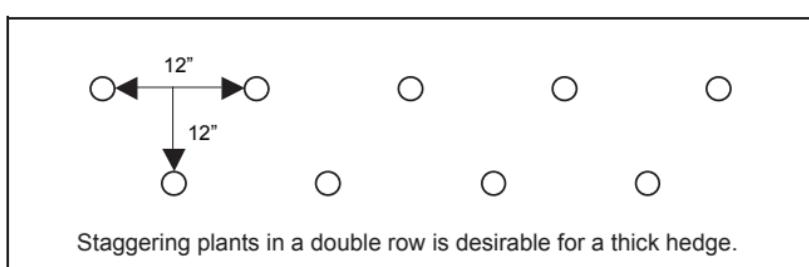
Mature plant size and spacing:

Small formal: 6-12 inches

Small informal: 1-3 feet

Medium: 3-4 feet

Large: 6-8 feet



## Area Covered by 100 Ground Cover Plants

Planting Distance (inches)	Area Covered (sq. feet)
6	25
12	100
18	225
24	400
30	625
36	900
48	1600
60	2500

*Example: 100 plants will cover 25 sq. ft. if spaced 6 inches apart*

# Common ANLA Standards

To purchase a copy of *American Standard for Nursery Stock*, ANSI Z60.1-2004, contact: AmericanHort.org, email: hello@americanhort.org, phone: 202-789-2900

## Recommended Balling and Burlapping Specifications for Four General Types of Plants

### Spreading Conifer and Broadleaved Evergreens

<u>Spread (ft)</u>	<u>Diam. (in)</u>
1.5	14
2	16
2.5	18
3.5	26
4	28
5	36
6	40
7	46
8	52

### Pyramidal and Broad Upright Conifers and Broad-leaved Evergreens

<u>Height (ft)</u>	<u>Diam. (in)</u>
1.5	12
2	14
3	18
4	20
5	22
6	24
7	26
8	28
9	32

### Columnar Conifers and Broad-leaved Evergreens

<u>Height (ft)</u>	<u>Diam. (in)</u>
1.5	9
2	11
3	14
4	16
5	18
6	20
7	22
8	24
9	26

Standard Shade Trees	
Caliper (in)	Diam. (in)
1.5	20
2	24
2.5	28
3	32
3.5	38
4	42
4.5	48
5	54
6	60
7	70
8	80

## Measuring Tree Caliper

- Take measurement 6" above ground for caliper up to 4" in diameter.
- Take measurement 12" above ground if caliper is over 4" in diameter.

## Approximate Weight of B&B Plants

Ball Size (in)	Weight (lbs)	Avg. Number per 45-ft trailer
24	200	130
28	350	115
32	500	80
36	800	45-50
40	1100	25-30
44	1600	20-25
50	2000	15-20

These figures are intended as a guide only and will vary between varieties, weather conditions, and time of year.

## Ball Diameter/Depth Ratios for B&B Plants

Diameter of Ball (in)	Depth of Ball
< 20	Not less than 65% of diameter
≥ 20	Not less than 60% of diameter

# Pruning Times and Techniques

## General Pruning Tips

- Never remove > 25% of the live crown of a tree in a single year
- Prune to accentuate the natural form of the plant
- Removing flower buds enhances vegetative growth
- Plants that bloom on previous season's wood (old wood) should be pruned directly after bloom to maximize flowering
- Young, vigorous plants need more frequent pruning than older, slow-growing plants
- Plants should be pruned only when a clear objective is established
- Hedge trimmers should only be used for annual pruning of thin-stemmed hedges. Even when done well, this will cause a thick profusion of twigs around the perimeter of the plant. Hedges will be healthier and more natural-looking when maintained with hand pruners
- Topping trees is strongly discouraged due to its severe impact on the health of the tree and undesirable aesthetic result
- Always remove the least amount of live branches necessary to accomplish the pruning objective.

## Late Winter (before bud break)

- Train young shade trees planted the year before by selecting scaffold branches
- Rejuvenate evergreen and deciduous shrubs and hedges
- Best time to annually prune most vines
- Thin mature trees if necessary

## Spring (bud break & shoot elongation)

- Best not to prune any live material on woody plants at this time due to translocation of carbohydrates and growth hormones to growing points
- Limit pruning to damaged or dead wood.

## Summer (new shoots reach full growth and become woody)

- Shape and thin mature trees if necessary after spring growth flush
- Address the tree crown interior to remove overly-shaded, crisscrossed, or weak branches
- Alternate time to rejuvenate hedges
- For more compact growth, pinch out one half of the new growth of pines, spruces, and firs

## Late Fall (after several hard frosts)

- Clip away excess ivy growth on building walls and around windows

## Winter (after hard freezes; plants truly dormant)

- Thin crowns of mature trees if necessary
- Clip hedges to retain clean lines

# Hardiness and Heat Zones

Long Island ranges in its cold hardiness from zone 6b (Pine Barrens region) to 7a (majority of Long Island), and is in heat zone 4, except the North and South Forks are heat zone 3.

## USDA Cold Hardiness Zones

Zone	Average Annual Minimum Temperature (F)
1.....	Below -50
2a.....	-45 to -50
2b.....	-40 to -45
3a.....	-35 to -40
3b.....	-30 to -35
4a.....	-25 to -30
4b.....	-20 to -25
5a.....	-15 to -20
5b.....	-10 to -15
6a.....	-5 to -10
6b.....	0 to -5
7a.....	.5 to 0
7b.....	10 to 5
8a.....	15 to 10
8b.....	20 to 15
9a.....	25 to 20
9b.....	30 to 25
10a.....	35 to 30
10b.....	40 to 35
11.....	40 and above

## AHS Heat Zones

Zone	Average Annual Number of Days above 86°F
1.....	Below 1
2.....	1-7
3.....	8-14
4.....	15-30
5.....	31-45
6.....	46-60
7.....	61-90
8.....	91-120
9.....	121-150
10.....	151-180
11.....	180-210
12.....	Above 210

## Shrub Pruning Calendar

### Table from Virginia Cooperative Extension, 2001

#### Key:

- = Best time to prune
- ✗ = Do not prune except to remove damage, hazards, or structural defects
- Blank = Timing is not critical
- D = Deciduous
- E = Evergreen

	Jan	Feb	Mar	Apr	May	Jun
Abelia	•	•	✗	✗	✗	✗
Arborvitae	•	•	•			•
Aucuba	✗	✗	✗	✗	✗	•
Azalea, D	✗	✗	✗	✗	•	•
Azalea, E	✗	✗	✗	✗	•	•
Bayberry	✗	✗	✗	✗	•	•
Beautyberry	•	•	•	✗	✗	✗
Beautybush (Kolkwitzia)	✗	✗	✗	✗	✗	•
Boxwood	•	•	•	•	•	•
Broom (Cytisus)	✗	✗	✗	✗	✗	•
Camellia, Japanese	✗	✗	✗	•	•	•
Camellia, Sasanqua	✗	✗	•	•	•	✗
Cherrylaurel	•	•	•	•	•	•
Clethra	•	•	•	✗	✗	✗
Cotoneaster	•	•	✗	✗	✗	✗
Crape Myrtle	•	•	•	✗	✗	✗
Daphne	✗	✗	✗	•	•	•
Dogwood	•	•	•	✗	✗	✗
Forsythia	✗	✗	✗	•	•	•
Fothergilla	✗	✗	✗	✗	•	•
Gardenia	•	•	✗	✗	✗	✗
Hibiscus,						
Rose of Sharon	•	•	•	✗	✗	✗
Holly, D	•	•	✗	✗	✗	✗

**Comments:**

1. Flowers produced on new (current season) wood
2. Flowers produced on wood from past season, dormant pruning will reduce flowers
3. Make pruning cuts well below diseased wood (fire blight)
4. Remove old stems to ground yearly to renew
5. Midseason shear if a formal hedge is desired
6. Do not cut into old wood that has no leaves or needles
7. Spring/summer prune to remove azalea caterpillars and galls
8. Fall/early winter pruning can reduce winter hardiness
9. Trim candles (new growth) in half when needles are 1/2 to 2/3 their normal length

Jul	Aug	Sep	Oct	Nov	Dec	Comments
x	x	x	x	•	•	1,4
•	x	x	x	x	x	6
•	x	x	x	x	x	2
•	x	x	x	x	x	2
•	x	x	x	x	x	2,7
•	x	x	x	x	x	
x	x	x	x	•	•	1
•	x	x	x	x	x	2,4
•	x	x	x	•	•	5
•	x	x	x	x	x	2
x	x	x	x	x	x	2
x	x	x	x	x	x	1
•	x	x	x	•	•	5
x	x	x	x	•	•	1
x	x	x	x	•	•	3
			x	x	x	1,8
•	x	x	x	x	x	2
x	x	x	x	•	•	1,4
•	x	x	x	x	x	2,4
•	x	x	x	x	x	2
x	x	x	x	•	•	1
x	x	x	x	•	•	1
x	x	x	x	x	•	1

## Table from Virginia Cooperative Extension, 2001 (cont'd.)

### Key:

- = Best time to prune
- ✗ = Do not prune except to remove damage, hazards, or structural defects
- Blank = Timing is not critical
- D = Deciduous
- E = Evergreen

	Jan	Feb	Mar	Apr	May	Jun
Holly, E	✗	✗	✗	✗	✗	•
Hydrangea, spring bloom	✗	✗	✗	✗	✗	•
Hydrangea, summer bloom	•	•	•	✗	✗	✗
Hypericum	•	•	•	✗	✗	✗
Indian Hawthorn	✗	✗	✗	✗	•	•
Juniper	•	•	•			
Leucothoe	✗	✗	✗	✗	✗	•
Lilac	✗	✗	✗	✗	✗	•
Mountain laurel	✗	✗	✗	✗	✗	•
Nandina	•	•	•	✗	✗	✗
Osmanthus	•	•				•
Pearlbush	✗	✗	✗	✗	✗	•
Photinia	•	•			•	•
Pieris	✗	✗	✗	✗	•	•
Pine, Mugo	•	✗	✗	•	•	•
Pittosporum	✗	•	•	•	•	✗
Potentilla	•	•	•	✗	✗	✗
Pyracantha	✗	✗	✗	✗	✗	•
Quince	✗	✗	✗	•	•	•
Rhododendron	✗	✗	✗	✗	✗	•
Rose	✗	•	•	✗	✗	✗
Serviceberry	✗	✗	✗	•	•	•
Smoke Tree	•	•	✗	✗	✗	✗
Sumac	•	•	•	✗	✗	✗
Sweetshrub	✗	✗	✗	✗	✗	✗
Viburnum, D	✗	✗	✗	✗	•	•
Viburnum, E	✗	✗	✗	✗	•	•
Weigela	✗	✗	✗	✗	•	•
Willow, Pussy	✗	✗	✗	•	•	•
Witchhazel	✗	✗	✗	•	•	•
Yew	•	•	•		•	•

## Comments:

1. Flowers produced on new (current season) wood
2. Flowers produced on wood from past season, dormant pruning will reduce flowers
3. Make pruning cuts well below diseased wood (fire blight)
4. Remove old stems to ground yearly to renew
5. Midseason shear if a formal hedge is desired
6. Do not cut into old wood that has no leaves or needles
7. Spring/summer prune to remove azalea caterpillars and galls
8. Fall/early winter pruning can reduce winter hardiness
9. Trim candles (new growth) in half when needles are 1/2 to 2/3 their normal length

Jul	Aug	Sep	Oct	Nov	Dec	Comments
•	x	x	x	x	x	2,5
•	x	x	x	x	x	2
x	x	x	x	x	x	1
x	x	x	x	x	x	1
•	x	x	x	x	x	2
	x	x	x	•	•	6
•	x	x	x	x	x	4
•	x	x	x	x	x	2,4
•	x	x	x	x	x	2
x	x	x	x	x	x	1,4
x	x	x	x	•	•	1,5
•	x	x	x	x	x	2
•	x	x	x	•	•	5
•	x	x	x	x	x	2
x	x	x	x	x	•	
x	x	x	x	x	x	9
x	x	x	•	•	•	1,4
•	x	x	x	x	x	2,3
•	x	x	x	x	x	2,4
•	x	x	x	x	x	2
•	•	x	x	x	x	1,3,4
x	x	x	x	x	x	
x	x	x	x	•	•	1
x	•	•	•	•	•	1,4
•	•	x	x	x	x	1
•	x	x	x	x	x	2,4
x	x	x	x	x	x	2
•	x	x	x	x	x	2,4
•	x	x	x	x	x	2
•	x	x	x	x	x	2
•	x	x	x	•	•	5

## Deciduous Tree Pruning Calendar

### Table from Virginia Cooperative Extension, 2009

#### Legend:

\* = Best time to prune

x = Do not prune except to correct damage,  
hazards, or structural defects

- = Timing is not critical

	Jan	Feb	Mar	Apr	May	Jun
Ailanthus	-	-	-	-	-	-
Alder	*	*	-	-	-	-
Ash	-	-	-	-	-	-
Bald Cypress	-	-	-	-	-	-
Beech	-	-	-	-	-	-
Birch	*	x	x	x	x	x
Buckeye	x	x	x	x	*	*
Catalpa	-	-	-	-	-	-
Cherry, Flowering	x	x	x	x	x	*
Chestnut, Chinese	-	-	-	-	-	-
Crabapple	x	x	x	x	*	*
Crape Myrtle	*	*	*	x	x	x
Dogwood	x	x	x	x	x	*
Elm	x	x	x	x	x	x
Fringe Tree	x	x	x	x	x	*
Ginko	-	-	-	-	-	-
Goldenraintree	-	-	-	x	x	x
Hackberry	-	-	-	-	-	-
Hawthorn	x	x	x	x	x	*
Hickory	-	-	-	-	-	-
Honeylocust	-	-	-	-	-	-
Horsechestnut	x	x	x	x	*	*
Katsura	-	-	-	-	-	-
Linden	-	-	-	x	x	x
Magnolia	x	x	x	x	*	*
Maple	x	x	x	x	*	*
Mimosa	-	-	-	-	-	-
Mountain Ash	-	-	-	-	-	-
Mulberry	-	-	-	-	-	-
Nyssa, Black Gum	-	-	-	-	-	-
Oak	-	-	x	x	x	x
Peach, Flowering	x	x	x	x	x	*
Pear, Flowering	x	x	x	x	x	*

## Comments

1. Avoid pruning in late winter/early spring due to sap flow (more cosmetic than detrimental)
2. Avoid pruning from spring through summer due to insect or disease problems
3. Avoid pruning from October - December due to reduced cold hardiness
4. Avoid pruning after July because flower buds have set

Jul	Aug	Sep	Oct	Nov	Dec	Comments
-	-	-	-	-	-	
-	-	-	-	*	*	
-	-	-	-	-	-	
-	-	-	-	-	-	
*	*	*	-	-	-	
X	-	-	-	*	*	1,2
*	X	X	X	X	X	4
-	-	-	-	-	-	
*	X	X	X	X	X	4
-	-	-	-	-	-	
*	X	X	X	X	X	4
-	-	-	X	X	X	3
*	X	X	X	X	X	4
-	-	-	*	*	*	1,2
*	X	X	X	X	X	4
-	-	-	-	-	-	
X	X	-	*	*	*	
-	X	X	-	-	-	2
*	X	X	X	X	X	4
-	-	-	-	-	-	
-	-	*	*	-	-	
*	X	X	X	X	X	4
-	-	-	-	-	-	
X	*	*	*	-	-	
*	X	X	X	X	X	4
*	X	X	-	*	*	1,2
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
X	X	-	-	*	*	2
*	X	X	X	X	X	4
*	X	X	X	X	X	4

## Deciduous Tree Pruning Calendar (cont'd.)

### Table from Virginia Cooperative Extension, 2009

#### Legend:

- \* = Best time to prune
- x = Do not prune except to correct damage, hazards, or structural defects
- = Timing is not critical

	Jan	Feb	Mar	Apr	May	Jun
Plum, Flowering						
and Purple	x	x	x	x	x	*
Poplar	-	x	x	x	-	-
Redbud	x	x	x	x	*	*
Serviceberry	x	x	x	x	*	*
Sophora	-	-	-	x	x	x
Sourwood	-	-	x	x	x	x
Stewartia	*	-	-	-	-	x
Sweetgum	-	-	-	-	-	-
Sycamore, Plane	-	-	-	-	-	-
Tuliptree	-	-	-	-	-	-
Willow	-	x	x	x	-	-
Zelkova	-	-	-	-	-	-

## Comments

1. Avoid pruning in late winter/early spring due to sap flow (more cosmetic than detrimental)
2. Avoid pruning from spring through summer due to insect or disease problems
3. Avoid pruning from October - December due to reduced cold hardiness
4. Avoid pruning after July because flower buds have set

Jul	Aug	Sep	Oct	Nov	Dec	Comments
*	X	X	X	X	X	4
-	-	-	*	*	*	1
*	X	X	X	X	X	2,4
*	X	X	X	X	X	4
X	-	-	*	*	*	
X	-	-	*	*	*	
X	X	-	-	-	-	*
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	
-	-	-	-	-	-	1
-	-	-	-	-	-	

# Plant Award Winners

## The Gold Medal Plant Program - Growing a greener Long Island since 1999

The Long Island Gold Medal Plant Program began in 1999 and is administered by Cornell Cooperative Extension of Suffolk County. The mission of the Gold Medal Plant Program is to identify and promote exceptional ornamental plants that will thrive in the Long Island home landscape. Increased public education and awareness of sustainable plant selections are the main goals of the Program.

Four award-winning plants are selected each year, which may be trees, shrubs, perennials, vines, ground covers, grasses, or annuals. Visit [www.ccesuffolk.org](http://www.ccesuffolk.org) to see descriptions of all the award-winning plants. Gold Medal Plant Winners are identified by the Plant Selection Committee, which is a volunteer group of horticulture professionals. If you would like more information, please contact Vincent Simeone at VASimeone@aol.com.

### The Gold Medal Plant Awards:

2027	<i>Aesculus pavia</i> <i>Carex pensylvanica, C. appalachica</i> <i>Hesperocyparis arizonica 'Blue Ice' and 'Silver Ghost'</i> <i>Edgeworthia chrysantha</i>
2026	<i>Cercidiphyllum japonica</i> <i>Muhlenbergia capillaris</i> <i>Crataegus viridis 'Winter King'</i> <i>Pycnanthemum tenuifolium</i>
2025	<i>Quercus bicolor</i> <i>Diospyros kaki</i> <i>Monarda punctata</i> <i>Callicarpa americana</i>
2024	<i>Vitex agnus-castus</i> <i>Chionanthus virginicus</i> <i>Parrotia subaequalis</i> <i>Anemone canadensis</i>
2023	<i>Cotinus obovatus</i> <i>Ilex verticillata</i> <i>Liquidambar styraciflua</i> <i>Persicaria affinis</i>
2022	<i>Bignonia capreolata</i> <i>Ginkgo biloba</i> <i>Indigofera ambylantha</i> <i>Schizachyrium scoparium</i>
2021	<i>Begonia grandis</i> <i>Enkianthus campanulatus</i> <i>Quercus phellos</i> <i>Rosa carolina, R. palustris, &amp; R. virginiana</i>

2020	<i>Acer triflorum</i> <i>Ilex x 'Rutzan' Red Beauty</i> <i>Itea virginica</i>
2019	<i>Helleborus x ballardiae 'HGC Pink Frost'</i> <i>Deutzia gracilis</i> <i>Chamaecyparis thyoides 'Red Star'</i> <i>Alchemilla mollis</i>
2018	<i>Heptacodium miconioides</i> <i>Betula nigra 'Little King'</i> <i>Taxodium distichum</i> <i>Polygonatum odoratum 'Variegatum'</i> <i>Viburnum nudum 'Winterthur' &amp; 'Brandywine'</i>
2017	<i>Nyssa sylvatica</i> <i>Osmanthus heterophyllus 'Goshiki'</i> <i>Catharanthus roseus</i> <i>Wisteria frutescens 'Amethyst Falls'</i>
2016	<i>Begonia x benariensis</i> (Whopper® and Big® Begonias) <i>Pinus flexilis</i> blue cultivars <i>Paeonia Itoh</i> series <i>Cleome x Senorita Rosalita®</i>
2015	<i>Coreopsis x 'Full Moon'</i> <i>Hydrangea paniculata 'Limelight'</i> <i>Aucuba japonica 'Serratifolia'</i>
2014	<i>Lagerstroemia indica x faurieri 'Natchez'</i> <i>Camellia japonica</i> April series & <i>C. x Winter</i> series <i>Cornus florida</i> <i>Ilex crenata 'Soft Touch'</i> <i>Nepeta racemosa 'Blue Wonder'</i>
2013	<i>Lonicera nitida</i> <i>Thujopsis dolabrata 'Nana'</i> <i>Quercus palustris 'Green Pillar'</i> <i>Cercis Canadensis</i>
2012	<i>Acer griseum</i> <i>Amsonia hubrichtii</i> <i>Polystichum acrostichoides</i> 'Christmas Fern' <i>Chionanthus retusus</i>
2011	<i>Baptisia australis</i> <i>Carpinus betulus 'Frans Fontaine'</i> <i>Cornus mas 'Golden Glory'</i> <i>Sedum spurium 'John Creech'</i>
2010	<i>Magnolia 'Galaxy'</i> <i>Lonicera sempervirens</i> <i>Styrax japonicus 'Emerald Pagoda'</i> <i>Salvia nemorosa 'Caradonna'</i>
2009	<i>Parrotia persica</i> <i>Phlox stolonifera</i> <i>Aesculus parviflora</i> <i>Carex 'Ice Dance'</i>
2008	<i>Clematis montana</i> var. <i>rubens</i> <i>Syringa reticulata 'Ivory Silk'</i> <i>Viburnum x burkwoodii 'Conoy'</i> <i>Geranium x cantabrigiense 'Biokovo'</i>

2007	<i>Sciadopitys verticillata</i> <i>Skimmia japonica</i> <i>Abelia grandiflora 'Rose Creek'</i> <i>Panicum virgatum 'Heavy Metal'</i>
2006	<i>Hibiscus syriacus 'Diana'</i> <i>Ilex pedunculosa</i> <i>Rosa 'Radyod'</i> <i>Stachys byzantina 'Helene Von Stein'</i>
2005	<i>Hydrangea quercifolia</i> <i>Picea orientalis</i> <i>Prunus 'Hally Jolivette'</i> <i>Waldsteinia ternata</i>
2004	<i>Hypericum frondosum 'Sunburst'</i> <i>Sorbus alnifolia</i> <i>Sarcococca hookeriana var. <i>humilis</i></i> <i>Leucanthemum x superbum 'Becky'</i>
2003	<i>Clethra alnifolia 'Compacta'</i> <i>Daphne x transatlantica 'Jim's Pride' (Daphne caucasica)</i> <i>Heuchera villosa 'Autumn Bride'</i> <i>Thuja plicata</i>
2002	<i>Ceratostigma plumbaginoides</i> <i>Hydrangea anomala subsp. <i>petiolaris</i></i> <i>Malus 'Sugar Tyme'</i> <i>Viburnum dilatatum 'Erie'</i>
2001	<i>Cephalotaxus harringtonia 'Duke Gardens'</i> <i>Epimedium x perralchicum 'Frohnleiten'</i> <i>Rudbeckia nitida 'Autumn Sun'</i> <i>Stephanandra incisa 'Crispa'</i>
2000	<i>Fothergilla gardenii</i> <i>Microbiota decussata</i> <i>Stewartia pseudocamellia</i> <i>Corylopsis pauciflora</i>

## Perennial Plant of the Year

The Plant of the Year program, sponsored by the Perennial Plant Association, promotes the use of perennials. Each year members cast their vote for an outstanding perennial with the following criteria:

- Suitable for a wide range of climate types
- Low maintenance needs
- Easily propagated – true from seed or vegetatively propagated
- Exhibits multiple seasonal interest

## Perennial Plant of the Year Index

2025	<i>Pycnanthemum muticum</i>
2024	<i>Phlox paniculata 'Jeana'</i>
2023	<i>Rudbeckia 'American Gold Rush'</i>
2022	<i>Schizachyrium scoparium</i> and cultivars
2021	<i>Calamintha nepeta</i> subsp. <i>nepeta</i>
2020	<i>Aralia cordata 'Sun King'</i>
2019	<i>Stachys monieri 'Hummelo'</i>
2018	<i>Allium 'Millenium'</i>
2017	<i>Asclepias tuberosa</i>

2016	<i>Anemone × hybrida</i> 'Honorine Jobert'
2015	<i>Geranium x cantabrigiense</i> 'Biokovo'
2014	<i>Panicum virgatum</i> 'Northwind'
2013	<i>Polygonatum odoratum</i> 'Variegatum'
2012	<i>Brunnera macrophylla</i> 'Jack Frost'
2011	<i>Amsonia hubrichtii</i>
2010	<i>Baptisia australis</i>
2009	<i>Hakonechloa macra</i> 'Aureola'
2008	<i>Geranium roseum</i>
2007	<i>Nepeta</i> 'Walker's Low'
2006	<i>Dianthus gratianopolitanus</i> 'Feuerhexe' (Firewitch)
2005	<i>Helleborus x hybridus</i>
2004	<i>Athyrium niponicum</i> 'Pictum'
2003	<i>Leucanthemum</i> 'Becky'
2002	<i>Phlox paniculata</i> 'David'
2001	<i>Calamagrostis x acutiflora</i> 'Karl Foerster'
2000	<i>Scabiosa columbaris</i> 'Butterfly Blue'
1999	<i>Rudbeckia fulgida</i> var. <i>sullivantii</i> 'Goldsturm'
1998	<i>Echinacea purpurea</i> 'Magnus'
1997	<i>Salvia</i> 'May Night'
1996	<i>Penstemon digitalis</i> 'Husker Red'
1995	<i>Perovskia atriplicifolia</i>
1994	<i>Astilbe</i> 'Sprite'
1993	<i>Veronica</i> 'Sunny Border Blue'
1992	<i>Coreopsis verticillata</i> 'Moonbeam'
1991	<i>Heuchera micrantha</i> 'Palace Purple'
1990	<i>Phlox stolonifera</i>

# Cross Reference for Common Names of Herbaceous Perennials

## A

Aaron's Beard	<i>Hypericum</i>
Adam's Needle	<i>Yucca</i>
Alpine Geranium	<i>Erodium</i>
Alpine Strawberry	<i>Fragaria</i>
Anemone	<i>Pulsatilla</i>
August Lily	<i>Hosta</i>
Avens	<i>Geum</i>

## B

Baby's Breath	<i>Gypsophila</i>
Balloonflower	<i>Platycodon</i>
Basket of Gold	<i>Alyssum</i>
Beard Tongue	<i>Penstemon</i>
Bearded Iris	<i>Iris germanica</i>
Bedstraw	<i>Galium</i>
Bee Balm	<i>Monarda</i>
Bellflower	<i>Campanula</i>
Bishop's Hat	<i>Epimedium</i>
Black Sedge	<i>Carex nigra</i>
Black-eyed Susan	<i>Rudbeckia</i>
Blanket Flower	<i>Gaillardia</i>
Bleeding Heart	<i>Dicentra</i>
Blood root	<i>Sanguinaria</i>
Blue Oat Grass	<i>Helictotrichon</i>
Border Pinks	<i>Dianthus</i>
Bowman's Root	<i>Veronicastrum</i>
Bugbane	<i>Cimicifuga</i>
Bugleweed	<i>Ajuga</i>
Butter Daisey	<i>Coreopsis</i>
Butterfly Weed	<i>Asclepias</i>

## C

Candytuft	<i>Iberis</i>
Cardinal Flower	<i>Lobelia</i>
Catmint	<i>Nepeta</i>
Chinese Lantern	<i>Physalis</i>
Christmas Rose	<i>Helleborous niger</i>
Cinquefoil	<i>Potentilla</i>
Columbine	<i>Aquilegia</i>
Coneflower	<i>Echinacea</i>
Coral Bells	<i>Heuchera</i>
Cornflower	<i>Cantaurea</i>
Cranesbill	<i>Geranium</i>
Creeping Phlox	<i>Phlox subulata</i>
Culver's Root	<i>Veronicastrum</i>

## D

Daisy	<i>Chrysanthemum</i>
Daylily	<i>Hemerocallis</i>
Dead Nettle	<i>Lamiastrum/Lamium</i>
Dropwort	<i>Filipendula</i>

**E**

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Elephant Ears	<i>Bergenia</i>
English Daisy	<i>Bellis</i>
Evening Primrose	<i>Oenothera</i>

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**F**

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Fairy Candles	<i>Cimicifuga</i>
False Dragonhead	<i>Physostegia</i>
False Indigo	<i>Baptisia</i>
False Mallow	<i>Sidalcea</i>
False Spirea	<i>Astilbe</i>
False Starwort	<i>Boltonia</i>
False Sunflower	<i>Heliopsis</i>
Feather Reed Grass	<i>Calamagrostis</i>
Fescue	<i>Festuca</i>
Flax	<i>Linum</i>
Fleabane	<i>Erigeron</i>
Foamflower	<i>Tiarella</i>
Fountain Grass	<i>Pennisetum</i>
Fox's Brush	<i>Centranthus</i>
Foxglove	<i>Digitalis</i>
Fume Root	<i>Corydalis</i>

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**G**

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Gay Feather	<i>Liatris</i>
Germander	<i>Teucrium</i>
Giant Reed	<i>Arundo</i>
Ginger	<i>Asarum</i>
Globe Thistle	<i>Echinops</i>
Globeflower	<i>Trollius</i>
Goatsbeard	<i>Aruncus</i>
Goldenrod	<i>Solidago</i>

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**H**

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Hens & Chicks	<i>Sempervivum</i>
Heronsbill	<i>Erodium</i>
Hollyhock	<i>Alcea</i>

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**I**

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Ice Plant	<i>Delosperma</i>
Indian Feather	<i>Gaura</i>
Indian Pink	<i>Spigelia</i>

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**J**

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Jack in the Pulpit	<i>Arisaema</i>
Jacob's Ladder	<i>Polemonium</i>
Japanese Iris	<i>Iris ensata</i>
Joe-Pye-Weed	<i>Eupatorium</i>
Jupiter's Beard	<i>Centranthus</i>

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**L**

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Lady's Mantle	<i>Alchemilla</i>
Lamb's Ears	<i>Stachys</i>
Larkspur	<i>Delphinium</i>
Lavander	<i>Lavandula</i>
Leadwort	<i>Ceratostigma</i>

Lenten Rose	<i>Helleborus orientalis</i>
Leopard's Bane	<i>Doronicum</i>
Lily of the Valley	<i>Convallaria</i>
Lilyturf	<i>Liriope</i>
Little Blue Stem	<i>Schizachryium</i>
Liverleaf	<i>Hepatica</i>
Lungspur	<i>Delphinium</i>
Lungwort	<i>Pulmonaria</i>
Lyme Grass	<i>Elymus</i>

## M

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Mallow	<i>Malva</i>
Marguerite Daisy	<i>Anthemis</i>
Maryland Pinkroot	<i>Spigelia marilandio</i>
Masterwort	<i>Astrantia</i>
Meadow Rue	<i>Thalictrum</i>
Meadow Sage	<i>Salvia</i>
Meadowsweet	<i>Filipendula</i>
Michaelmas Daisy	<i>Aster</i>
Mondo Grass	<i>Ophiopogon</i>
Monkshood	<i>Aconitum</i>
Moss Pinks	<i>Phlox subulata</i>
Mullein	<i>Verbascum</i>

## N

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New York Aster	<i>Sympyotrichum novi-belgii</i>
Northern Sea Oats	<i>Chasmonthium</i>

## O

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Oat Grass	<i>Arrhenatherum</i>
Obedient Plant	<i>Physostegia</i>

## P

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Pampas Grass	<i>Cortaderia</i>
Pasque Flower	<i>Pulsatilla</i>
Pearlwort	<i>Minuartia</i>
Peony	<i>Paeonia</i>
Pincushion Flower	<i>Scabiosa</i>
Pinks	<i>Dianthus</i>
Plantain Lily	<i>Hosta</i>
Plumbago	<i>Ceratostigma</i>
Plume Grass	<i>Erianthus</i>
Poker Plant	<i>Kniphofia</i>
Purple Rock Cress	<i>Aubrieta</i>

## R

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Rock Cress	<i>Arabis</i>
Rock Rose	<i>Helianthemum</i>
Roger's Flower	<i>Rodgersia</i>
Rush	<i>Juncus</i>
Russian Sage	<i>Perovskia</i>

## S

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Sage	<i>Salvia</i>
Sea Thrift	<i>Armeria</i>
Seaside Daisy	<i>Erigeron</i>
Siberian Iris	<i>Iris siberica</i>

Snakeroot	<i>Actaea</i> (syn. <i>Cimicifuga</i> )
Sneezeweed	<i>Helenium</i>
Snow in Summer	<i>Cerastium</i>
Soapwort	<i>Saponaria</i>
Solomon's Seal	<i>Polygonatum</i>
Spiderwort	<i>Tradescantia</i>
St. John's Wort	<i>Hypericum</i>
Stonecrop	<i>Sedum</i>
Swamp Milkweed	<i>Asclepias</i>
Sweet Pea	<i>Lathyrus</i>
Sweet Woodruff	<i>Galium</i>
Switch Grass	<i>Panicum</i>

## T

Thyme	<i>Thymus</i>
Tickseed	<i>Coreopsis</i>
Toadlily	<i>Tricyrtis</i>
Tree Mallow	<i>Lavatera</i>
Tritoma	<i>Kniphofia</i>
Turtlehead	<i>Chelone</i>
Trout Lily	<i>Erythronium</i>

## W

Windflower	<i>Anemone</i>
Worm Grass	<i>Spigelia</i>

## Y

Yarrow	<i>Achillea</i>
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## Cross Reference for Common Names of Woody Ornamentals

### A

Abelia	<i>Abelia</i>
Alder	<i>Alnus</i>
Andromeda, Japanese	<i>Pieris</i>
Apple, Fruiting	<i>Malus</i>
Arborvitae	<i>Thuja</i>
Arrowwood	<i>Viburnum dentatum</i>
Ash	<i>Fraxinus</i>
Aspen	<i>Populus</i>
Azalea	<i>Rhododendron</i>

### B

Bald cypress	<i>Taxodium</i>
Basswood	<i>Tilia</i>
Bayberry	<i>Morella</i>
Bearberry	<i>Arctostaphylos</i>
Beautyberry	<i>Callicarpa</i>
Beautybush	<i>Kolkwitzia</i>
Beech	<i>Fagus</i>
Birch	<i>Betula</i>

Bittersweet	<i>Celastrus scandens</i>
Black Gum	<i>Nyssa</i>
Blackhaw	<i>Viburnum prunifolium</i>
Blueberry	<i>Vaccinium</i>
Boxwood	<i>Buxus</i>
Broom	<i>Cytisus</i>
Buckeye	<i>Aesculus</i>

## C

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Catalpa	<i>Catalpa</i>
Cedar	<i>Cedrus</i>
Cherry	<i>Prunus</i>
Cherry Laurel	<i>Prunus laurocerasus</i>
Cherry, Kwanzan	<i>Prunus serrulata 'Kwanzan'</i>
Chokeberry	<i>Aronia</i>
Cinquefoil	<i>Potentilla</i>
Coffeetree	<i>Gymnocladus</i>
Coralberry	<i>Symporicarpos</i>
Corneliancherry	<i>Cornus mas</i>
Cotoneaster	<i>Cotoneaster</i>
Crabapple, flowering	<i>Malus</i>
Cryptomeria	<i>Cryptomeria</i>
Cucumber tree	<i>Magnolia acuminata</i>
Cypress (false)	<i>Chamaecyparis</i>
Cypress, bald	<i>Taxodium</i>
Cypress, Hinoki False	<i>Chamaecyparis obtusa</i>

## D

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Dawn Redwood	<i>Metasequoia glyptostroboides</i>
Deutzia	<i>Deutzia</i>
Dogwood	<i>Cornus, Benthamidia</i>
Douglas-Fir	<i>Pseudotsuga</i>
Dove-tree	<i>Davidia</i>

## E

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Elm	<i>Ulmus</i>
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## F

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False Cypress	<i>Chamaecyparis</i>
Filbert	<i>Corylus</i>
Fir	<i>Abies</i>
Firethorn	<i>Pyracantha</i>
Fothergilla	<i>Fothergilla</i>
Franklinia	<i>Franklinia alatamaha</i>
Fringetree	<i>Chionanthus</i>

## G

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Ginkgo	<i>Ginkgo</i>
Golden Rain Tree	<i>Koelreuteria</i>
Goldenchain tree	<i>Laburnum</i>

## H

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Hackberry	<i>Celtis</i>
Hawthorn	<i>Crataegus</i>
Heath	<i>Erica</i>
Heather	<i>Calluna</i>
Hemlock	<i>Tsuga</i>

Hickory	<i>Carya</i>
Holly	<i>Ilex</i>
Holly, False	<i>Osmanthus</i>
Holly, Japanese	<i>Ilex crenata</i>
Honeylocust	<i>Gleditsia</i>
Hophornbeam	<i>Ostrya</i>
Hornbeam	<i>Carpinus</i>
Horsechestnut	<i>Aesculus</i>
Hydrangea	<i>Hydrangea</i>
<hr/>	
Inkberry	<i>Ilex glabra</i>
Ironwood	<i>Carpinus</i>
<hr/>	
Japanese Pagodatree	<i>Styphnolobium japonicum</i>
Juniper	<i>Juniperus</i>
<hr/>	
Kerria (Japanese)	<i>Kerria japonica</i>
<hr/>	
Larch	<i>Larix</i>
Lawson cypress	<i>Chamaecyparis lawsoniana</i>
Lilac	<i>Syringa</i>
Linden	<i>Tilia</i>
London Plane Tree	<i>Platanus x acerifolia</i>
Longstalk Holly	<i>Ilex pedunculosa</i>
<hr/>	
Maackia	<i>Maackia</i>
Magnolia	<i>Magnolia</i>
Maidenhair-tree	<i>Ginkgo</i>
Maple	<i>Acer</i>
Maple, Japanese	<i>Acer palmatum</i>
Mimosa	<i>Albizia</i>
Mock Orange	<i>Philadelphus</i>
Mountain Ash	<i>Sorbus</i>
Mountain Laurel	<i>Kalmia</i>
<hr/>	
Nannyberry	<i>Viburnum lentago</i>
<hr/>	
Oak	<i>Quercus</i>
Osage Orange	<i>Maclura</i>
<hr/>	
Pagoda Tree	<i>Styphnolobium</i>
Pawpaw	<i>Asminia</i>
Pear	<i>Pyrus</i>
Persian Parrotia	<i>Parrotia persica</i>
Persimmon	<i>Diospyros</i>
Pine	<i>Pinus</i>
Planetree	<i>Platanus</i>
Plum	<i>Prunus</i>
Plum, Beach	<i>Prunus maritima</i>

Pondcypress	<i>Taxodium</i>
Poplar	<i>Populus</i>
Possumhaw	<i>Ilex decidua</i>
<b>Q</b> —	
Quince	<i>Chaenomeles</i>
<b>R</b> —	
Redbud	<i>Cercis</i>
Rhododendron	<i>Rhododendron</i>
Rose	<i>Rosa</i>
Rose-of-Sharon	<i>Hibiscus</i>
Rubber tree (hardy)	<i>Eucommia</i>
<b>S</b> —	
Sassafras	<i>Sassafras</i>
Scholar-tree	<i>Styphnolobium japonicum</i>
Serviceberry	<i>Amelanchier</i>
Silverbell	<i>Halesia</i>
Smoke Tree	<i>Cotinus</i>
Sourgum	<i>Nyssa</i>
Sourwood	<i>Oxydendrum</i>
Spruce	<i>Picea</i>
St. Johnswort	<i>Hypericum</i>
Stewartia	<i>Stewartia</i>
Sumac	<i>Rhus</i>
Summersweet	<i>Clethra alnifolia</i>
Sweetgum	<i>Liquidambar</i>
Sweetshrub	<i>Calycanthus floridus</i>
Sweetspire	<i>Itea</i>
Sycamore	<i>Platanus</i>
<b>T</b> —	
Tuliptree	<i>Liriodendron</i>
Tupelo	<i>Nyssa</i>
<b>V</b> —	
Viburnum	<i>Viburnum</i>
Virginia creeper	<i>Parthenocissus quinquefolia</i>
<b>W</b> —	
Walnut	<i>Juglans</i>
Weigela	<i>Weigela</i>
Willow	<i>Salix</i>
Winterberry	<i>Ilex verticillata</i>
Witchhazel	<i>Hamamelis</i>
<b>Y</b> —	
Yellowwood	<i>Cladrastis</i>
Yew	<i>Taxus</i>
<b>Z</b> —	
Zelkova	<i>Zelkova</i>

# Dioecious Plants

Dioecious means “two houses” and is a term used to describe species where male and female flowers exist on separate plants. Dioecious plants require the presence of both male and female plants if fruit production is desired. Fruit production may be wanted for ornamental characteristics or breeding programs in which case, both sexes need to be present to ensure fruit production. In other situations, where fruit is offensive due to unpleasant odors or litter problems, planting male cultivars is the only way to guarantee that fruit will not develop.

Following is a partial list of genera with one or more dioecious species:

<i>Acer</i>	<i>Ginkgo</i>	<i>Salix</i>
<i>Aucuba</i>	<i>Gymnocladus</i>	<i>Skimmia</i>
<i>Cephalotaxus</i>	<i>Ilex</i>	<i>Taxus</i>
<i>Chionanthus</i>	<i>Juniperus</i>	
<i>Cotinus</i>	<i>Lindera</i>	
<i>Fraxinus</i>	<i>Morella</i>	

# Assuring Holly Berries

One male plant can pollinate many closely related female species in the vicinity as long as flowering occurs at the same time. Fruit production does not guarantee viable seed.

## The following male hollies

*Ilex* 'China Boy'  
*Ilex* x *meserveae* 'Blue Prince'  
    'Blue Stallion'

## can pollinate the following female hollies.

*Ilex aquifolium* (English)  
*Ilex aquipernyi* 'Dragon Lady'  
*Ilex* 'China Girl'  
*Ilex* x *meserveae* 'Blue Angel'  
    'Blue Maid'  
    'Blue Princess'  
    'Golden Girl'

## The following male holly

*Ilex verticillata* 'Early Male'

## can pollinate the following female hollies.

*Ilex verticillata* 'Bright Horizon'    *Ilex verticillata* 'Sparkleberry'  
*Ilex verticillata* 'Early Bright'    *Ilex verticillata* 'Winter Red'

## The following male holly

*Ilex verticillata* 'Raritan Chief'

## can pollinate the following females:

*Ilex verticillata* 'Autumn Glow'    *Ilex verticillata* 'Scarlet O'Hara'  
*Ilex verticillata* 'Bonfire'            *Ilex verticillata* 'Sparkleberry'  
*Ilex verticillata* 'Harvest Red'    *Ilex verticillata* 'Winter Red'  
*Ilex verticillata* 'Red Sprite'

# Invasive Plants

## What is an invasive species?

An invasive species is legally defined as an organism that is not native to the ecosystem under consideration AND whose introduction causes or is likely to cause harm to the environment, economy, and/or human health.

## What makes a plant invasive?

The following characteristics allow a plant to adapt quickly to a new environment, thrive, and spread. Most invasive plants possess one or more of these characteristics:

- Abundant reproduction
- Rapid growth rate
- Short generation time
- Ability to occupy many different habitats
- Ability to adapt to changing environments
- Effective seed dispersal
- Long-lived seeds
- Poisonous or allergenic to other organisms

It should be noted that only a very small percentage of all the non-native species in the United States are actually invasive. However, this small percentage is able to cause an incredible amount of damage to native ecosystems.

## What is being done about invasive plants on Long Island?

Representatives from federal, state, and county agencies and private organizations across Long Island have come together and recognized the problem of invasive species. In 2007, both Nassau and Suffolk Counties passed legislation that prohibited the sale, transport, distribution, and propagation of dozens of invasive plants. This list of invasive plants has been termed the “Do Not Sell List.” Banned plants currently on the Do Not Sell List are listed in Table 1. Invasive plants to be added to the Do Not Sell List are listed in Table 2 along with their ban date.

The Nassau and Suffolk Counties’ invasive plant legislation is similar to legislation passed in other localities such as the State of Connecticut and the Commonwealth of Massachusetts. Connecticut began banning the sale, transport, distribution, and propagation of select invasive plants May 2004. Massachusetts began banning the importation of select invasive plants January 1st, 2006.

## What can I do about invasive plants?

Educate yourself and your clients on how to identify invasive plants. Start with your own nursery or landscape and make sure to not sell or plant species that are on the Do Not Sell and Management Lists. Consider growing or planting species native to Long Island or the Northeast. Native plants seem to be gaining in popularity and this may be a growing niche market that you can capitalize on. However, be sure to remember that there are also many non-native, NON-invasive ornamental plants that also make great selections. If you are planting in a tough location, you will have more choices in your plant palette if you use both natives and non-invasive, non-natives.

### **For more information:**

- Cornell Cooperative Extension of Suffolk County  
[www.ccesuffolk.org](http://www.ccesuffolk.org)
- Long Island Invasive Species Management  
<https://liisma.org/>
- New York Invasive Species Clearinghouse  
[www.nyis.info](http://www.nyis.info)
- New York Flora Atlas  
[www.newyork.plantatlas.usf.edu](http://www.newyork.plantatlas.usf.edu)
- Invasive and Exotic Species of North America  
<https://www.invasive.org/index.cfm>
- National Invasive Species Information Center (NISIC)  
<https://www.invasivespeciesinfo.gov/>
- Invasive Plants of the Eastern United States: Identification and Control  
<https://research.fs.usda.gov/treeresearch/20640>
- Nassau County Local Law 24-2007 (Amended LL 22-2010):  
<https://www.askarcnassau.com/DocumentCenter/View/3070>
- Suffolk County Local Law 22-2007 (Amended LL 51-2010 & LL 30-2015): Chapter 278A Article 2  
<https://apps2.suffolkcountyny.gov/legislature/resos/resos2011/i1425-11.pdf>
- Alvey, A.A. 2013. *Finding Alternatives to Invasive Ornamental Plants in New York*. Cornell Cooperative Extension. 126 pp
- Burrell, C. 2007. *Native Alternatives to Invasive Plants*. Brooklyn Botanic Garden, Inc: Brooklyn, NY. 240 pp.
- Randall, J. and J. Marinelli, 1996. *Invasive Plants: Weeds of the Global Garden*. Brooklyn Botanic Garden Publications, Handbook #149 in the 21st Century Gardening Series, Science Press, a division of the Mack Printing Group.

## Table 1: The Do Not Sell List

Plants (including cultivars) currently banned in Nassau and Suffolk Counties as of 2016

<i>Acer platanoides</i> (including all red & green cultivars)	Norway maple
<i>Acer pseudoplatanus</i>	Sycamore maple
<i>Alliaria petiolata</i>	Garlic mustard
<i>Ampelopsis brevipedunculata</i>	Porcelain-berry
<i>Anthriscus sylvestris</i>	Wild chervil
<i>Aralia elata</i>	Japanese angelica tree
<i>Artemisia vulgaris</i>	Mugwort, Common wormwood
<i>Berberis thunbergii</i> (includes all hybrids with other <i>Berberis</i> species)	Japanese barberry
<i>Brachypodium sylvaticum</i>	Slender false broom
<i>Cabomba caroliniana</i>	Carolina fanwort
<i>Cardamine impatiens</i>	Narrowleaf bittercress
<i>Celastrus orbiculatus</i>	Oriental bittersweet
<i>Centaurea stoebe</i> ssp. <i>micranthos</i>	Spotted knapweed, Spotted star-thistle
<i>Cirsium arvense</i>	Canada thistle
<i>Clematis terniflora</i>	Japanese virgin's bower, Sweetautumn clematis
<i>Cynanchum louiseae</i>	Black swallow-wort
<i>Cynanchum rossicum</i>	European or Pale swallow-wort
<i>Dioscorea polystachya</i>	Chinese yam, cinnamon vine
<i>Egeria densa</i>	Brazilian water weed
<i>Elaeagnus umbellata</i>	Autumn-olive
<i>Euonymus alatus</i>	Winged euonymus, Burning bush
<i>Euonymus fortunei</i>	Wintercreeper euonymus
<i>Euphorbia cyparissias</i>	Cypress spurge
<i>Fallopia japonica</i>	Japanese knotweed
<i>Fallopia sachalinensis</i>	Giant knotweed
<i>Frangula alnus</i>	Smooth buckthorn
<i>Glyceria maxima</i>	English Watergrass
<i>Humulus japonicus</i>	Japanese hops
<i>Hydrilla verticillata</i>	Hydrilla, Water tyme
<i>Hydrocharis morsus-ranae</i>	Frogbit
<i>Imperata cylindrica</i> (except 'Red Baron')	Cogon grass
<i>Iris pseudacorus</i>	Yellow flag iris
<i>Lepidium latifolium</i>	Broadleaf pepperweed
<i>Lespedeza cuneata</i>	Chinese lespedeza
<i>Ligustrum obtusifolium</i>	Border privet
<i>Lonicera x bella</i>	Bell's honeysuckle
<i>Lonicera japonica</i>	Japanese honeysuckle
<i>Lonicera maackii</i>	Amur honeysuckle
<i>Lonicera morrowii</i>	Morrow's honeysuckle
<i>Lonicera tatarica</i>	Tatarian honeysuckle
<i>Ludwigia grandiflora</i>	Uruguayan primrose-willow
<i>Ludwigia peploides</i>	Floating primrose-willow
<i>Lythrum salicaria</i>	Purple loosestrife
<i>Miscanthus sinensis</i>	Japanese silver grass, Maiden grass
<i>Microstegium vimineum</i>	Japanese stilt grass
<i>Murdannia keisak</i>	Marsh dewflower
<i>Myriophyllum aquaticum</i>	Parrot feather, Brazilian water-milfoil

## Do Not Sell List, cont.

<i>Myriophyllum heterophyllum</i>	Broadleaf water-milfoil
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil
<i>Nymphoides peltata</i>	Yellow floating heart
<i>Oplismenus hirtellus</i>	Wavy leaf basketgrass
<i>Persicaria perfoliata</i>	Mile-a-minute weed
<i>Phalaris arundinacea</i>	Reed canary-grass
<i>Phellodendron amurense</i>	Amur corktree
<i>Phragmites australis</i> ssp. <i>australis</i>	European common reed grass
<i>Potamogeton crispus</i>	Curly pondweed
<i>Pueraria montana</i> var. <i>lobata</i>	Kudzu
<i>Ranunculus ficaria</i>	Lesser celandine
<i>Rhamnus cathartica</i>	Common buckthorn
<i>Robinia pseudoacacia</i>	Black locust
<i>Rosa multiflora</i>	Multiflora rose

## Do Not Sell List, cont.

<i>Rubus phoenicolasius</i>	Wineberry
<i>Salix atrocinerea/ cinerea</i>	Gray florist's willow
<i>Silphium perfoliatum</i> var. <i>perfoliatum</i>	Cup-plant
<i>Trapa natans</i>	Water chestnut
<i>Vitex rotundifolia</i>	Beach vitex, Roundleaf chastetree

**Table 3: The Management List**

(Moderately invasive plants NOT banned in Nassau and Suffolk Counties)

<i>Acer ginnala</i>	Amur maple
<i>Acer palmatum</i>	Japanese maple
<i>Aegopodium podagraria</i>	Goutweed
<i>Agrostis gigantea</i>	Redtop, Black bentgrass
<i>Agrostis stolonifera</i>	Creeping bentgrass
<i>Ailanthus altissima</i>	Tree-of-heaven
<i>Aira caryophyllea</i>	Silver hairgrass
<i>Akebia quinata</i>	Fiveleaf Akebia, Chocolate vine
<i>Allium vineale</i>	Field garlic
<i>Alnus glutinosa</i>	European or Black alder
<i>Amorpha fruticosa</i>	False indigo
<i>Arthraxon hispidus</i>	Arthraxon
<i>Arundinaria gigantea</i>	Canebreak, Giant cane
<i>Berberis vulgaris</i>	Common or European barberry
<i>Bromus tectorum</i>	Cheat grass, Drooping brome
<i>Butomus umbellatus</i>	Flowering rush
<i>Carex kobomugi</i>	Japanese sedge, Asiatic sand sedge
<i>Centaurea jacea</i>	Black knapweed
<i>Cercidiphyllum japonicum</i>	Katsuratre
<i>Coronilla varia</i>	Crown vetch
<i>Cyperus difformis</i>	Variable flat sedge
<i>Datura stramonium</i>	Jimsonweed
<i>Digitalis purpurea</i>	Purple foxglove
<i>Elaeagnus angustifolia</i>	Russian-olive
<i>Elsholtzia ciliata</i>	Crested elsholtzia
<i>Epilobium hirsutum</i>	Hairy willow herb, Codlins and cream
<i>Eragrostis curvula</i>	Weeping love grass
<i>Euonymus europaeus</i>	European spindletree
<i>Euphorbia esula</i>	Leafy spurge
<i>Euphorbia lathyris</i>	Caper spurge
<i>Fallopia baldschuanica</i>	Silver lace or fleece vine
<i>Festuca filiformis</i>	Hair fescue, Fineleaf sheep fescue
<i>Froelichia gracilis</i>	Cottonweed
<i>Galega officinalis</i>	Professor weed, Goat's rue
<i>Geranium nepalense</i>	Nepalese crane's-bill
<i>Glaucium flavum</i>	Sea poppy, Yellow horned poppy
<i>Glechoma hederacea</i>	Ground-ivy
<i>Hedera helix</i>	English ivy
<i>Heracleum mantegazzianum</i>	Giant hogweed
<i>Hesperis matronalis</i>	Dame's rocket
<i>Ipomoea hederacea</i>	Morning glory
<i>Kochia scoparia</i>	Mexican summer-cypress
<i>Lespedeza bicolor/ thunbergii</i>	Shrubby bush clover
<i>Ligustrum vulgare</i>	European privet

## Management List, cont.

<i>Lotus corniculatus</i>	Bird's foot trefoil
<i>Lychnis flos-cuculi</i>	Ragged robin
<i>Lysimachia nummularia</i>	Creeping Jenny, Moneywort
<i>Lysimachia punctata</i>	Spotted loosestrife
<i>Lysimachia vulgaris</i>	Garden loosestrife
<i>Morus alba</i>	White mulberry
<i>Nasturtium officinale</i>	Watercress
<i>Nelumbo nucifera</i>	Sacred lotus
<i>Onopordum acanthium</i>	Scotch cotton-thistle
<i>Ornithogalum umbellatum</i>	Star-of-Bethlehem
<i>Paulownia tomentosa</i>	Princess tree
<i>Persicaria longiseta</i>	Creeping smartweed
<i>Phleum pratense</i>	Timothy
<i>Phyllostachys</i> spp.	Bamboo
<i>Pinus thunbergii</i>	Japanese black pine
<i>Poa compressa</i>	Canada bluegrass
<i>Poa pratensis</i>	Kentucky bluegrass
<i>Populus alba</i>	White poplar
<i>Prunus avium</i>	Sweet cherry
<i>Prunus cerasus</i>	Sour red cherry
<i>Prunus padus</i>	European bird cherry
<i>Pseudosasa japonica</i>	Arrow bamboo
<i>Pyrus calleryana</i>	Callery pear
<i>Ranunculus repens</i>	Creeping buttercup
<i>Rhodotypos scandens</i>	Jetbead
<i>Rhamnus frangula</i>	Smooth buckthorn
<i>Rosa rugosa</i>	Japanese or Rugosa rose
<i>Rubus bifrons</i>	Himalayan blackberry
<i>Rubus laciniatus</i>	Evergreen blackberry
<i>Rumex acetosella</i>	Sheep sorrel
<i>Saponaria officinalis</i>	Bouncing bet
<i>Schedonorus arundinaceus</i>	Tall fescue
<i>Senecio jacobaea</i>	Tansy ragwort
<i>Solanum dulcamara</i>	Trailing nightshade
<i>Spiraea japonica</i>	Japanese spirea
<i>Styrax japonicus</i>	Japanese snowbell
<i>Tribulus terrestris</i>	Puncture vine
<i>Tussilago farfara</i>	Coltsfoot
<i>Ulmus pumila</i>	Siberian elm
<i>Valeriana officinalis</i>	Common valerian
<i>Veronica officinalis</i>	Speedwell
<i>Viburnum dilatatum</i>	Linden arrowwood
<i>Viburnum opulus</i> var. <i>opulus</i>	European cranberry bush
<i>Viburnum sieboldii</i>	Siebold Viburnum
<i>Vicia cracca</i>	Cow vetch
<i>Vinca minor</i>	Periwinkle
<i>Wisteria sinensis/ floribunda</i>	Chinese and Japanese wisteria

# Alternatives to Ornamental Invasive Plants

Invasive Plants Banned on Long Island & Their Alternatives with Respective Ban Dates  
(Plants on the Do Not Sell List)

Long Island Invasive Species Management Area  
<https://liisma.org/>

**Norway Maple** *Acer platanoides* <sup>z</sup> 1/1/2013

**Freeman Maple** <sup>\*\*</sup> *Acer x freemanii*

**Red Maple** <sup>\*\*</sup> *Acer rubrum*

**Three-flowered Maple** *Acer triflorum*

**Lacebark Elm** *Ulmus parvifolia*

For red cultivars of *A. platanoides* including  
'Crimson King' and 'Royal Red'

1/1/2016

**Eastern Redbud** <sup>\*</sup> *Cercis canadensis*

(Purple cultivars)

**European Beech** *Fagus sylvatica*

(Purple cultivars)

**Chokecherry** <sup>\*\*</sup> *Prunus virginiana*

(Purple cultivars)

**Porcelain-berry** *Ampelopsis brevipedunculata* <sup>x</sup> 1/1/2009

**Bodinier or Purple Beautyberry** *Callicarpa bodinieri*;  
*C. dichotoma*

**Trumpet Honeysuckle** <sup>\*\*</sup> *Lonicera sempervirens*

**Coralberry** <sup>\*</sup> *Symporicarpos orbiculatus* & hybrids

**Japanese Angelica Tree** *Aralia elata* <sup>x</sup> 1/1/2009

For variegated cultivars of *A. elata*:

**Pagoda Dogwood** <sup>\*</sup> *Cornus alternifolia*

(Variegated cultivars)

**Kousa Dogwood** *Cornus kousa*

(Variegated cultivars)

**Staghorn Sumac** <sup>\*\*</sup> *Rhus typhina*

(Cutleaf cultivars)

**Japanese Barberry** *Berberis thunbergii* <sup>x</sup> 1/1/2014

For dwarf purple cultivars of *B. thunbergii*:

**Old Fashioned Weigela** *Weigela florida*

(Dwarf purple cultivars)

<sup>z</sup> Regulated under Regulation 6 NYCRR Part 575 Prohibited & Regulated Invasive Species.

<sup>x</sup> Prohibited under Regulation 6 NYCRR Part 575 Prohibited & Regulated Invasive Species.

(*Berberis thunbergii* prohibited on the Suffolk County Do Not Sell List & prohibited under State law after March 2016.

\* Native to the United States

\*\* Native to New York State (hybrids and cultivars of native species included)

For standard purple cultivars of *B. thunbergii*:

**Smokebush** *Cotinus coggygria*  
(Purple cultivars)

**Eastern Ninebark\*\*** *Physocarpus opulifolius*  
(Purple cultivars)

**Old Fashioned Weigela** *Weigela florida*  
(Large, purple cultivars)

For yellow or gold cultivars of *B. thunbergii*:

**Glossy Abelia** *Abelia x grandiflora*  
(Yellow cultivars)

**Border or Greenstem Forsythia** *Forsythia x intermedia*;  
*F. viridissima*  
(Yellow cultivars)

**Boxleaf Honeysuckle** *Lonicera nitida*  
(Yellow cultivars)

**Old Fashioned Weigela** *Weigela florida*  
(Yellow cultivars)

For green cultivars of *B. thunbergii*:

**Cranberry Cotoneaster** *Cotoneaster apiculatus*

**Bush Cinquefoil\*\*** *Potentilla fruticosa*

**Fragrant Sumac\*\*** *Rhus aromatica*  
(Dwarf cultivars)

**Old Fashioned Weigela** *Weigela florida*

**Sweet Autumn Clematis or Japanese Virgin's Bower**

*Clematis terniflora* <sup>z</sup>

1/1/2011

**Anemone Clematis** *Clematis montana*

**Virgin's Bower\*\*** *Clematis virginiana*

**Climbing Hydrangea** *Hydrangea anomala* subsp.  
*petiolaris*

**Autumn-olive** *Elaeagnus umbellata* <sup>x</sup>

1/1/2009

**Eastern Baccharis\*\***

*Baccharis halimifolia*

**Sweetfern\*\*** *Comptonia peregrina*

**Northern Bayberry\*\*** *Morella caroliniensis*

**Winged Euonymus or Burning Bush**

*Euonymus alatus* <sup>z</sup>

1/1/2016

**Red\*\* or Black\*\* Chokeberry** *Aronia arbutifolia*;  
*A. melanocarpa*

**Dwarf\*, Hybrid\*, or Large\* Fothergilla**

*Fothergilla gardenii*; *F. x intermedia*; *F. major*

**Virginia Sweetspire\*** *Itea virginica*

**Smooth Witherod Viburnum**

*Viburnum nudum* 'Winterthur' and 'Brandywine'

**Wintercreeper Euonymus** *Euonymus fortunei* <sup>z</sup> 1/1/2013For the groundcover habit of *E. fortunei*:**Bearberry\*\*** *Arctostaphylos uva-ursi***Bearberry Cotoneaster** *Cotoneaster dammeri***Willowleaf Cotoneaster** *Cotoneaster salicifolius*

(Low-growing cultivars)

**Creeping Raspberry** *Rubus calycinoides* (*Rubus pentalobus*)For the shrub habit of *E. fortunei*:**Dwarf Japanese Aucuba** *Aucuba japonica*

(Dwarf cultivars)

**Japanese Skimmia** *Skimmia japonica***Yellow Flag Iris** *Iris pseudacorus* <sup>x</sup>

1/1/2012

**Louisiana Irises\*** *Iris* spp.

(Yellow flowering cultivars)

**Japanese Iris** *Iris ensata***Blueflag Iris\*\*** *Iris versicolor***Bell, Amur, Morrow, and**

1/1/2011

**Tatarian Shrub Honeysuckle** <sup>x</sup>*Lonicera x bella*; *L. maackii*; *L. morrowii*; *L. tatarica***Deutzia** *Deutzia* spp.**Beautybush** *Kolkwitzia amabilis***Mockorange\*** (some species native to U.S.)*Philadelphus* spp.**Nippon or Vanhoutte Spirea** *Spiraea nipponica*;*S. x vanhouttei***Japanese Honeysuckle** *Lonicera japonica* <sup>x</sup>

1/1/2011

**Crossvine\*** *Bignonia capreolata***Carolina Yellow Jessamine\*** *Gelsemium sempervirens*

(Cold hardy cultivars)

**Goldflame Honeysuckle** *Lonicera x heckrottii***Trumpet Honeysuckle\*\*** *Lonicera sempervirens***Purple Loosestrife** *Lythrum salicaria* <sup>x</sup>

1/1/2009

**Meadowsweet** *Filipendula purpurea*; *F. rubra* <sup>\*</sup>**Dense Blazing Star\*** *Liatris spicata***Obedient Plant\*\*** *Physostegia virginiana***Perennial Sage** *Salvia nemorosa* (*S. x superba*;*S. x sylvestris*)

## **Japanese Silver Grass or Maiden Grass <sup>z</sup>**

*Miscanthus sinensis*

**1/1/2016**

**Feather Reed Grass** *Calamagrostis x acutiflora*

**Korean Feather Reed Grass**

*Calamagrostis brachytricha*

**Pink Muhly Grass\*\*** *Muhlenbergia capillaris*

**Switchgrass\*\*** *Panicum virgatum*

## **Amur Corktree *Phellodendron amurense* <sup>x</sup>** **1/1/2013**

**Honeylocust\*** *Gleditsia triacanthos* var. *inermis*

**Kentucky Coffeetree\*\*** *Gymnocladus dioicus*

**Lacebark Elm** *Ulmus parvifolia*

## **Black Locust *Robinia pseudoacacia* <sup>z</sup>** **1/1/2013**

For gold cultivars of *R. pseudoacacia*:

**Honeylocust\*** *Gleditsia triacanthos* var. *inermis*

(Gold cultivars)

## **Moderately Invasive Plants NOT Banned on Long Island & Their Alternatives (Plants on the Management List)**

### **Amur Maple *Acer ginnala***

**Trident Maple** *Acer buergerianum*

**Eastern Redbud\*** *Cercis canadensis*

**Red Buckeye** *Aesculus pavia*

### **Russian-olive *Elaeagnus angustifolia***

**Chinese or White\*Fringetree** *Chionanthus retusus*;

*C. virginicus\**

**Corkscrew Willow** *Salix matsudana*

**Chastetree** *Vitex agnus-castus*

### **English Ivy *Hedera helix***

**Crossvine\*** *Bignonia capreolata*

**Carolina Yellow Jessamine\*** *Gelsemium sempervirens*  
(Cold hardy cultivars)

**Climbing Hydrangea** *Hydrangea anomala* subsp. *petiolaris*

**Japanese Hydrangea-vine** *Schizophragma hydrangeoides*

### **Creeping Jenny or Moneywort**

*Lysimachia nummularia*

**Green and Gold\*** *Chrysogonium virginianum*

**Spotted Dead Nettle** *Lamium maculatum*

**Creeping Mazus** *Mazus reptans*

**Siberian Barren-strawberry** *Waldsteinia ternata*

For gold cultivars of *L. nummularia*:

- Coral\*** or **Foamy Bells** *Heuchera*; *X Heucherella*  
(Gold cultivars)
- Goldmoss Stonecrop** *Sedum acre*
- Japanese Stonecrop** *Sedum makinoi*  
(Gold cultivars)
- Creeping Speedwell** *Veronica prostrata*; *V. repens*  
(Gold cultivars)

**Japanese Black Pine** *Pinus thunbergii*

- Limber Pine\*** *Pinus flexilis*
- Japanese White Pine** *Pinus parviflora*
- Pitch Pine\*\*** *Pinus rigida*

**Callery Pear** *Pyrus calleryana*

- Downy\*\***, **Apple\*\***, or **Allegheny\*\* Serviceberry**  
*Amelanchier arborea*; *A. x grandiflora*; *A. laevis*
- Hybrid Dogwood** *Cornus* spp.
- Green Hawthorn\*** *Crataegus viridis*
- Loebner or Star Magnolia** *Magnolia x loebneri*;  
*M. stellata*

**Rugosa Rose** *Rosa rugosa*

- Bush Cinquefoil\*\*** *Potentilla fruticosa*
- Beach Plum\*\*** *Prunus maritima*
- Shrub Roses** *Rosa* spp.
- Virginia Rose\*\*** *Rosa virginiana*

**Common Periwinkle** *Vinca minor*

- Barrenwort** *Epimedium x perralchicum*; *E. x versicolor*
- Creeping Mazus** *Mazus reptans*
- Creeping Phlox\*** *Phlox stolonifera*
- Dwarf Sweetbox** *Sarcococca hookeriana* var. *humilis*

**Japanese and Chinese Wisteria**

*Wisteria floribunda*; *W. sinensis*

- Climbing Hydrangea** *Hydrangea anomala* subsp.  
*petiolaris*
- Japanese Hydrangea-vine** *Schizophragma hydrangeoides*
- American Wisteria\*** *Wisteria frutescens*

# NYS Prohibited and Regulated Invasive Species

The following plant species are 'Prohibited' under the NYS regulations.

Prohibited plants must not be sold, imported, purchased, transported, introduced or propagated, or possessed with the intent to sell, import, purchase, transport, or introduce.

*Acer pseudoplatanus*, Sycamore Maple  
*Achyranthes japonica*, Japanese Chaff Flower  
*Alliaria petiolata*, Garlic Mustard  
*Ampelopsis brevipedunculata*, Porcelain Berry  
*Anthriscus sylvestris*, Wild Chervil  
*Aralia elata*, Japanese Angelica Tree  
*Artemisia vulgaris*, Mugwort  
*Arthraxon hispidus*, Small Carpet Grass  
*Berberis thunbergii*, Japanese Barberry  
*Brachypodium sylvaticum*, Slender False Brome  
*Cabomba caroliniana*, Fanwort  
*Cardamine impatiens*, Narrowleaf Bittercress  
*Celastrus orbiculatus*, Oriental Bittersweet  
*Centaurea stoebe* (*C. biebersteinii*, *C. diffusa*, *C. maculosa* misapplied, *C. x psammogena*), Spotted Knapweed  
*Cirsium arvense* (*C. setosum*, *C. incanum*, *Serratula arvensis*), Canada Thistle  
*Cynanchum louiseae* (*C. nigrum*, *Vincetoxicum nigrum*), Black Swallow-wort  
*Cynanchum rossicum* (*C. medium*, *Vincetoxicum medium*, *V. rossicum*), Pale Swallow-wort  
*Dioscorea polystachya* (*D. batatas*), Chinese Yam  
*Dipsacus laciniatus*, Cut-leaf Teasel  
*Egeria densa*, Brazilian Waterweed  
*Elaeagnus umbellata*, Autumn Olive  
*Euphorbia cyparissias*, Cypress Spurge  
*Euphorbia esula*, Leafy Spurge  
*Ficaria verna* (*Ranunculus ficaria*), Lesser Celandine  
*Frangula alnus* (*Rhamnus frangula*), Smooth Buckthorn  
*Glyceria maxima*, Reed Manna Grass  
*Heracleum mantegazzianum*, Giant Hogweed  
*Humulus japonicus*, Japanese Hops  
*Hydrilla verticillata*, Hydrilla, Water Thyme  
*Hydrocharis morus-ranae*, European Frogbit  
*Imperata cylindrica* (*I. arundinacea*, *Lagurus cylindricus*), Cogon Grass  
*Iris pseudacorus*, Yellow Iris  
*Lepidium latifolium*, Broad-leaved Pepper-grass  
*Lespedeza cuneata*, Chinese Lespedeza

## NYS Prohibited Invasive Species, cont.

*Ligustrum obtusifolium*, Border Privet  
*Lonicera japonica*, Japanese Honeysuckle  
*Lonicera maackii*, Amur Honeysuckle  
*Lonicera morrowii*, Morrow's Honeysuckle  
*Lonicera tatarica*, Tartarian Honeysuckle  
*Lonicera x bella*, Fly Honeysuckle  
*Ludwigia hexapetala* (*L. grandiflora*), Uruguayan Primrose Willow  
*Ludwigia peploides*, Floating Primrose Willow  
*Lysimachia vulgaris*, Garden Loosestrife  
*Lythrum salicaria*, Purple Loosestrife  
*Microstegium vimineum*, Japanese Stilt Grass  
*Murdannia keisak*, Marsh Dewflower  
*Myriophyllum aquaticum*, Parrot-feather  
*Myriophyllum heterophyllum*, Broadleaf Water-milfoil  
*Myriophyllum heterophyllum* x *M. laxum*, Broadleaf Water-milfoil  
    Hybrid  
*Myriophyllum spicatum*, Eurasian Water-milfoil  
*Nymphoides peltata*, Yellow Floating Heart  
*Oplismenus hirtellus*, Wavyleaf Basketgrass  
*Persicaria perfoliata* (*Polygonum perfoliatum*), Mile-a-minute  
    Weed  
*Phellodendron amurense*, Amur Cork Tree  
*Phragmites australis*, Common Reed Grass  
*Phyllostachys aurea*, Golden Bamboo  
*Phyllostachys aureosulcata*, Yellow Groove Bamboo  
*Potamogeton crispus*, Curly Pondweed  
*Pueraria montana*, Kudzu  
*Reynoutria japonica* (*Fallopia japonica*, *Polygonum cuspidatum*),  
    Japanese Knotweed  
*Reynoutria sachalinensis* (*Fallopia sachalinensis*, *Polygonum sachalinensis*), Giant Knotweed  
*Reynoutria x bohemica* (*Fallopia x bohemica*, *Polygonum x bohemica*), Bohemian Knotweed  
*Rhamnus cathartica*, Common Buckthorn  
*Rosa multiflora*, Multiflora Rose  
*Rubus phoenicolasius*, Wineberry  
*Salix atrocinerea*, Gray Florist's Willow  
*Silphium perfoliatum*, Cup-plant  
*Trapa natans*, Water Chestnut  
*Vitex rotundifolia*, Beach Vitex

There is one plant species that is currently on the Do-Not-Sell List in Suffolk County, but is not prohibited by the NYS regulation, *Phalaris arundinacea*, reed canary-grass. This species will continue to be prohibited in Suffolk County.

A few plant species will be 'Regulated', according to the NYS

regulation. ‘Regulated’ indicates that the plant will be legal to possess, sell, buy, propagate and transport be sold, but must not be knowingly introduced into a free-living state (unconfined and outside the control of a person in areas such as public lands, natural areas, lands continually or intermittently connected to public or natural lands). In addition, there are specifications for labeling regulated species for sale as well as written communication to the purchasing customer detailing the species invasive risk and instructions for preventing the spread of the plant species. Note that currently all the below plants are currently on or are scheduled to soon be added the Do-Not-Sell List for Suffolk County.

**The following plant species are ‘Regulated’ under the NYS regulation. Note that all the below plants are currently on the Do-Not-Sell list for Suffolk County.**

*Acer platanoides*, Norway Maple

*Clematis terniflora*, Japanese Virgin's Bower

*Euonymus alatus*, Burning Bush

*Euonymus fortunei*, Winter Creeper

*Miscanthus sinensis*, Chinese Silver Grass

*Robinia pseudoacacia*, Black Locust

## Cultivar Exemptions of Invasive Species for NYS

These exemptions apply to the Suffolk County invasive plant species law, and the NYS invasive species regulation.

### Exempt Cultivars of Prohibited Species

Common Name	Scientific Name	Cultivar Name	Trademark Name	Status
Japanese Barberry	<i>Berberis thunbergii</i>	'Aurea'		Conditionally Exempt <sup>a</sup>
Japanese Barberry	<i>Berberis thunbergii</i>	'UCONN-BTCP4N'	Crimson Cutie	Conditionally Exempt
Japanese Barberry	<i>Berberis thunbergii</i>	'UCONN-BTB113'	Lemon Cutie	Conditionally Exempt
Japanese Barberry	<i>Berberis thunbergii</i>	'UCONN-BTB048'	Lemon Glow	Conditionally Exempt

### Exempt Cultivars of Regulated Species

Common Name	Scientific Name	Cultivar Name	Trademark Name	Status
Chinese Silvergrass	<i>Miscanthus sinensis</i>	'NCMS1'	My Fair Maiden	Conditionally Exempt
Chinese Silvergrass	<i>Miscanthus sinensis</i>	'Tift M77'	Scout	Conditionally Exempt
Wintercreeper	<i>Euonymus fortunei</i>	'Kewensis'		Conditionally Exempt
Wintercreeper	<i>Euonymus fortunei</i>	'Vanilla Frosting'		Conditionally Exempt

<sup>a</sup> Conditionally Exempt – Cultivars exempt from Part 575 Prohibited and Regulated requirements, subject to periodic re-evaluation.

You can request a cultivar to be reviewed to determine if it meets the requirements of exemption by submitting a Cultivar Assessment Request Form. If you would like a copy of the Cultivar Assessment Request Form, contact <[isinfo@dec.ny.gov](mailto:isinfo@dec.ny.gov)> or Nora Catlin (<[nora.catlin@cornell.edu](mailto:nora.catlin@cornell.edu)>, 631-727-785 x214).

# Plants that Attract Birds and Butterflies

## Birds

### Trees

*Aesculus pavia*  
*Amelanchier*  
*Celtis laevigata*  
*Celtis occidentalis*  
*Cornus florida*  
*Crataegus*

*Fagus grandifolia*  
*Juniperus virginiana*  
*Liquidambar styraciflua*  
*Malus*  
*Nyssa sylvatica*  
*Sorbus*

### Shrubs/Vines

*Aronia arbutifolia*  
*Aronia melanocarpa*  
*Bignonia capreolata*  
*Cotoneaster*  
*Ilex decidua*  
*Ilex verticillata*  
*Lindera benzoin*  
*Photinia villosa*  
*Pyracantha*

*Rubus*  
*Sambucus canadensis*  
*Symporicarpos orbiculatus*  
*Vaccinium corymbosum*  
*Viburnum prunifolium*  
*Viburnum trilobum*  
*Vitis*  
*Weigela florida*

### Perennials

*Agastache*  
*Ajuga*  
*Alcea*  
*Aquilegia*  
*Asclepias*  
*Aster x frikartii*  
*Campanula*  
*Chelone*  
*Coreopsis*  
*Crocosmia*  
*Echinacea purpurea*  
*Echinops*  
*Helianthus*  
*Heuchera*

*Hibiscus*  
*Hosta (Fragrant)*  
*Iris*  
*Lavandula*  
*Lavatera*  
*Lobelia cardinalis*  
*Lupinus*  
*Lychnis*  
*Monarda didyma*  
*Penstemon*  
*Phlox maculata*  
*Phlox paniculata*  
*Rudbeckia fulgida var. sullivantii*  
*Rudbeckia laciniata*

### Butterflies

#### Perennials

*Achillea millefolium*  
*Agastache hybrid*  
*Anapalis margaritacea*  
*Arabis*  
*Aruncus dioicus*  
*Asclepias tuberosa*  
*Aster x frikartii*  
*Aubrieta*  
*Baptisia*  
*Caryopteris*  
*Centranthus*  
*Chrysanthemum*

*Heliopsis helianthoides*  
*Hemerocallis*  
*Iberis*  
*Lavandula*  
*Liatris spicata*  
*Ligularia*  
*Lilium*  
*Lobelia cardinalis*  
*Monarda didyma*  
*Oenothera*  
*Penstemon*  
*Phlox paniculata*

<i>Cimicifuga, Actaea</i>	<i>Primula</i>
<i>Clematis</i>	<i>Rudbeckia fulgida</i> var. <i>sullivantii</i>
<i>Coreopsis lanceolata</i>	<i>Salvia x superba</i>
<i>Coreopsis verticillata</i>	<i>Scabiosa</i>
<i>Eupatorium maculatum</i>	<i>Verbascum chaixii</i>
<i>Gaillardia x grandiflora</i>	<i>Veronica longifolia</i>

## Plants that Support Native Bees

Source: The Xerces Society for Invertebrate Conservation

### Perennials

<i>Agastache</i>	Hyssop
<i>Asclepias</i>	Milkweed
<i>Baptisia</i>	Wild indigo
<i>Borago</i>	Borage
<i>Chelone</i>	Turtlehead
<i>Echinacea</i>	Purple coneflower
<i>Eupatorium</i>	Boneset
<i>Helenium</i>	Sneezeweed
<i>Helianthus</i>	Sunflower
<i>Geranium</i>	Wild geranium
<i>Lavandula</i>	Lavender
<i>Liatris</i>	Blazing star
<i>Lobelia</i>	Lobelia
<i>Lupinus</i>	Lupine
<i>Mentha</i>	Wild mint
<i>Monarda</i>	Beebalm
<i>Nepeta</i>	Catmint
<i>Ocimum</i>	Basil
<i>Perovskia</i>	Russian sage
<i>Pycnanthemum</i>	Mountain mint
<i>Scilla</i>	Squill
<i>Solidago</i>	Goldenrod
<i>Symphytum</i>	Aster
<i>Tradescantia</i>	Spiderwort
<i>Veronica</i>	Ironweed
<i>Veronicastrum</i>	Culver's root

### Trees and Shrubs

<i>Amelanchier</i>	Serviceberry
<i>Ceanothus</i>	New Jersey tea
<i>Crataegus</i>	Hawthorn
<i>Rhododendron</i>	Azalea
<i>Rosa</i>	Wild rose
<i>Salix</i>	Willow
<i>Spirea</i>	Meadowsweet
<i>Tilia</i>	Basswood
<i>Vaccinium</i>	Blueberry

Native plant species best support native bee populations.

# Plants That Are Deer Tolerant/Resistant

Very few plants are entirely deer resistant. *If hungry or thirsty enough, deer will eat or nibble just about anything.* The younger, more tender and succulent the plant is the more apt the deer are to try it. Most plants need to be established before they can be considered Deer Resistant.

Source: Dr. Mark Bridgen, Dept. of Horticulture, Cornell University (2-2010)

## Annuals

*Antirrhinum majus*  
*Asparagus springeri*  
*Begonia sempervirens*  
*Cleome hasslerana*  
*Colocasia esculenta*  
*Datura, Brugmansia* spp.  
*Lobularia maritima*  
*Nicotiana sylvestris*  
*Pennisetum setaceum 'Rubrum'*  
*Senecio cineraria*

## Woody Trees and Shrubs

*Buxus microphylla*  
*Juniperus communis*  
*Juniperus horizontalis*  
*Juniperus procumbens*  
*Juniperus scopulorum*  
*Leucothoe fontanesiana*  
*X Mahoberberis*  
*Mahonia bealei*  
*Morella caroliniensis*  
*Osmanthus heterophyllus variegatus*  
*Paeonia suffruticosa*  
*Picea abies*  
*Picea glauca*  
*Picea pungens*  
*Pieris japonica*  
*Platanus occidentalis*  
*Potentilla fruticosa*  
*Skimmia japonica*  
*Vitex agnus-castus*

## Grasses

*Carex* spp.  
*Hakonechloa macra*  
*Panicum virgatum*  
*Pennisetum alopecuroides*

## Herbaceous Perennials and Ground Covers

<i>Aconitum napellus</i>	<i>Mazus reptans</i>
<i>Agastache foeniculum</i>	<i>Melissa officinalis</i>
<i>Allium schoenoprasum</i>	<i>Mentha spp.</i>
<i>Allium tuberosum</i>	<i>Narcissus</i>
<i>Amsonia tabernaemontana</i>	<i>Nepeta mussinii</i>
<i>Artemesia ludoviciana</i>	<i>Nepeta x faassenii</i>
<i>Artemesia schmidtiana</i>	<i>Opuntia humifusa</i>
<i>Asclepias tuberosa</i>	<i>Origanum vulgare</i>
<i>Calamintha grandiflora</i>	<i>Pachysandra procumbens</i>
<i>Cerastium tomentosum</i>	<i>Pachysandra terminalis</i>
<i>Dicentra eximia</i>	<i>Paeonia hybrids</i>
<i>Dicentra spectabilis</i>	<i>Perovskia atriplicifolia</i>
<i>Digitalis purpurea</i>	<i>Petasites japonicus</i>
<i>Epimedium spp.</i>	<i>Podophyllum peltatum</i>
<i>Fritillaria imperialis</i>	<i>Rheum rhabarbarum</i>
<i>Galanthus nivalis</i>	<i>Ruta graveolens</i>
<i>Helleborus foetidus</i>	<i>Salvia officinalis</i>
<i>Helleborus orientalis</i>	<i>Santolina chamaecyparissus</i>
<i>Lamiastrum galeobdolon</i>	<i>Santolina virens</i>
<i>Lamium maculatum</i>	<i>Stachys byzantina</i>
<i>Lavandula angustifolia</i>	<i>Tanacetum parthenium</i>
<i>Leucojum vernum</i>	<i>Teucrium chamaedrys</i>
<i>Ligularia dentata</i>	<i>Thymus spp.</i>
<i>Marrubium vulgare</i>	<i>Verbascum olympicum</i>

## Plants Suitable for a Dry Location

### Trees - Evergreen

<i>Cedrus deodara</i>	<i>Pinus cembroides</i>
<i>Cedrus libani</i>	<i>Pinus rigida</i>
<i>Cunninghamia lanceolata</i>	<i>Thuja occidentalis</i>
<i>Juniperus chinensis</i>	<i>Thuja orientalis</i>
<i>Juniperus virginiana</i>	<i>Ilex cornuta</i>
<i>Picea glauca</i>	<i>Ilex latifolia</i>
<i>Picea omorika</i>	<i>Ilex 'Nellie R. Stevens'</i>
<i>Picea pungens</i> var. <i>glauca</i>	<i>Magnolia grandiflora</i>

### Trees - Deciduous

<i>Acer buergerianum</i>	<i>Parrotia persica</i>
<i>Celtis occidentalis</i>	<i>Quercus phellos</i>
<i>Chionanthus retusus</i>	<i>Sassafras albidum</i>
<i>Cotinus obovatus</i>	<i>Styphnolobium japonicum</i>
<i>Fraxinus pennsylvanica</i>	<i>Taxodium distichum</i>
<i>Gleditsia triacanthos</i> var. <i>inermis</i>	<i>Tilia americana</i>
<i>Gymnocladus dioicus</i>	<i>Ulmus parvifolia</i>
<i>Koelreuteria paniculata</i>	<i>Viburnum prunifolium</i>
<i>Maackia amurensis</i>	<i>Zelkova serrata</i>
<i>Ostrya virginiana</i>	
<i>Oxydendrum arboreum</i>	

### Shrubs - Evergreen

<i>Aucuba japonica</i>	<i>Juniperus communis</i>
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*Cephalotaxus harringtonia*  
*Lavandula angustifolia*  
*Nandina domestica*  
*Osmanthus heterophyllus*  
*Photinia x fraseri*  
*Yucca filamentosa*  
*Juniperus chinensis* cultivars

*Juniperus squamata*  
*Juniperus virginiana* cultivars  
*Picea glauca* cultivars  
*Picea omorika* cultivars  
*Picea pungens* var. *glaуca* cultivars  
*Thuja occidentalis* cultivars  
*Thuja orientalis* cultivars

## Shrubs - Deciduous

*Aronia arbutifolia*  
*Caragana arborescens*  
*Cotinus coggygria*  
*Cytisus scoparius*  
*Genista pilosa*  
*Hydrangea serrata*  
*Hypericum frondosum*  
*Ilex decidua*  
*Jasminum nudiflorum*  
*Photinia villosa*

*Physocarpus opulifolius*  
*Potentilla fruticosa*  
*Prunus maritima*  
*Rhus aromatica*  
*Rosa nitida*  
*Sambucus canadensis*  
*Symporicarpos* spp.  
*Vaccinium angustifolium*  
*Viburnum lantana*

## Ground Covers

*Arctostaphylos uva-ursi*  
*Juniperus chinensis*  
*Juniperus communis*  
*Juniperus conferta*

*Juniperus horizontalis*  
*Juniperus procumbens*  
*Juniperus squamata*

## Vines

*Parthenocissus quinquefolia*

## Perennials

*Acanthus spinosissimus*  
*Achillea*  
*Anaphalis* sp.  
*Anemone pulsatilla*  
*Anthemis tinctoria*  
*Arabis caucasica*  
*Armeria maritima*  
*Artemisia*  
*Asclepias tuberosa*  
*Aubrieta deltoidea*  
*Aurinia saxatilis*  
*Campanula persicifolia*  
*Catananche caerulea*  
*Centaurea montana*  
*Cerastium tomentosum*  
*Ceratostigma*  
*Chasmanthium*  
*Chrysanthemum pacificum*  
*Coreopsis*  
*Delosperma*  
*Dictamnus albus*  
*Echinacea purpurea*  
*Echinops exaltatus*  
*Eryngium* sp.  
*Festuca ovina* var. *glaуca*  
*Gaillardia x grandiflora*

*Helenium*  
*Helianthus*  
*Hypericum*  
*Iberis sempervirens*  
*Lavandula angustifolia*  
*Liatris* sp.  
*Linum* sp.  
*Lychnis chalcedonica*  
*Oenothera*  
*Panicum*  
*Pennisetum*  
*Penstemon digitalis*  
*Perovskia atriplicifolia*  
*Phlox carolina*  
*Phlox maculata*  
*Phlox subulata*  
*Potentilla*  
*Rudbeckia*  
*Salvia*  
*Santolina chamaecyparissus*  
*Santolina virens*  
*Scabiosa*  
*Sedum*  
*Solidago*  
*Stachys byzantina*

# Plants Suitable for a Coastal Location

## Trees

<i>Amelanchier canadensis</i>	<i>Pinus parviflora</i>
<i>Gleditsia triacanthos</i> var. <i>inermis</i>	<i>Pinus rigida</i>
<i>Ilex opaca</i>	<i>Platanus x acerifolia</i>
<i>Juniperus virginiana</i>	<i>Prunus serotina</i>
<i>Picea glauca</i>	<i>Sassafras albidum</i>
<i>Picea pungens</i>	

## Shrubs

<i>Baccharis halimifolia</i>	<i>Morella caroliniensis</i>
<i>Comptonia peregrina</i>	<i>Perovskia atriplicifolia</i>
<i>Cytisus scoparius</i>	<i>Potentilla fruticosa</i>
<i>Hibiscus moscheutos</i>	<i>Pinus mugo</i>
<i>Hibiscus syriacus</i>	<i>Prunus x cistena</i>
<i>Hydrangea macrophylla</i>	<i>Prunus maritima</i>
<i>Hypericum calycinum</i>	<i>Rosa virginiana</i>
<i>Hypericum frondosum</i>	<i>Syringa vulgaris</i>
<i>Hypericum x moseranum</i>	<i>Viburnum dentatum</i>
<i>Ilex crenata</i>	<i>Vitex agnus-castus</i>
<i>Ilex glabra</i>	
<i>Juniperus chinensis</i>	

## Grasses

<i>Ammophila breviligulata</i>
<i>Chasmanthium latifolium</i>
<i>Festuca glauca</i>
<i>Panicum virgatum</i>
<i>Pennisetum alopecuroides</i>
<i>Sorghastrum nutans</i>
<i>Scirpus cyperinus</i>
<i>Spartina patens</i>

## Ground Covers

<i>Arctostaphylos uva-ursi</i>	<i>Juniperus conferta</i>
<i>Artemisia stelleriana</i>	<i>Juniperus horizontalis</i>
<i>Calluna vulgaris</i>	<i>Liriope</i>
<i>Epimedium</i>	<i>Santolina chamaecyparissus</i>
<i>Hudsonia tomentosa</i>	<i>Yucca filamentosa</i>
<i>Jasminum nudiflorum</i>	

## Vines

<i>Gelsemium sempervirens</i>
<i>Hydrangea anomala</i> subsp. <i>petiolaris</i>
<i>Lonicera x heckrottii</i>
<i>Parthenocissus quinquefolia</i>
<i>Schizophragma hydrangeoides</i>

## Plants Suitable for a Coastal Location, cont.

### Perennials

<i>Achillea</i>	<i>Iris pumila</i>
<i>Aquilegia</i>	<i>Kniphofia</i>
<i>Ajuga</i>	<i>Lilium</i>
<i>Alcea</i>	<i>Limonium</i>
<i>Alyssum</i>	<i>Monarda</i>
<i>Anemone pulsatilla</i>	<i>Nepeta</i>
<i>Arabis</i>	<i>Oenothera</i>
<i>Armeria</i>	<i>Paeonia</i>
<i>Aster</i>	<i>Penstemon</i>
<i>Baptisia</i>	<i>Phalaris</i>
<i>Bergenia</i>	<i>Phlox</i>
<i>Brunnera</i>	<i>Physostegia</i>
<i>Campanula persicifolia</i>	<i>Platycodon</i>
<i>Cerastium</i>	<i>Polemonium</i>
<i>Chasmanthium</i>	<i>Potentilla</i>
<i>Chrysanthemum</i>	<i>Primula</i>
<i>Cimicifuga</i>	<i>Salvia</i>
<i>Clematis</i>	<i>Sedum</i>
<i>Convallaria</i>	<i>Sempervivum</i>
<i>Cortadaria pumilla</i>	<i>Solidago</i>
<i>Delphinium</i>	<i>Stachys</i>
<i>Dianthus</i>	<i>Teucrium</i>
<i>Dicentra</i>	<i>Thalictrum</i>
<i>Digitalis</i>	<i>Thymus</i>
<i>Echinops</i>	<i>Tiarella</i>
<i>Erianthus</i>	<i>Veronica</i>
<i>Erigeron</i>	
<i>Eryngium</i>	
<i>Gaillardia</i>	
<i>Gypsophila</i>	
<i>Helleborus</i>	
<i>Hemerocallis hybrids</i>	
<i>Heuchera</i>	
<i>Hosta</i>	
<i>Iberis</i>	
<i>Iris germanica</i>	

# Plants Suitable for a Shaded Location

## Trees - Evergreen

<i>Ilex cornuta</i>	<i>Taxus cuspidata</i>
<i>Ilex opaca</i>	<i>Taxus x media</i>
<i>Magnolia grandiflora</i>	<i>Tsuga diversifolia</i>
<i>Taxus baccata</i>	<i>Tsuga heterophylla</i>

## Trees - Deciduous

<i>Acer pensylvanicum</i>	<i>Fagus sylvatica</i>
<i>Acer saccharum</i>	<i>Fagus grandifolia</i>
<i>Amelanchier canadensis</i>	<i>Franklinia alatamaha</i>
<i>Aesculus pavia</i>	<i>Magnolia virginiana</i>
<i>Carpinus caroliniana</i>	<i>Ostrya virginiana</i>
<i>Chionanthus virginicus</i>	<i>Oxydendrum arboreum</i>
<i>Cornus alternifolia</i>	<i>Stewartia</i>
<i>Cornus florida</i>	

## Shrubs - Evergreen

<i>Aucuba japonica</i>	<i>Mahonia bealei</i>
<i>Buxus sempervirens</i>	<i>Nandina domestica</i>
<i>Cephalotaxus harringtonia</i>	<i>Osmanthus heterophyllus</i>
<i>Chamaecyparis thyoides</i>	<i>Photinia x fraseri</i>
<i>Daphne x burkwoodii</i>	<i>Pieris floribunda</i>
<i>Daphne cneorum</i>	<i>Pieris japonica</i>
<i>Euonymus japonicus</i>	<i>Prunus laurocerasus</i>
<i>Euonymus kiautschovicus</i>	<i>Rhododendron hybrids</i>
<i>Ilex crenata</i>	<i>Rhododendron maximum</i>
<i>Ilex glabra</i>	<i>Sarcococca hookeriana</i>
<i>Kalmia angustifolia</i>	<i>Skimmia japonica</i>
<i>Kalmia latifolia</i>	<i>Taxus baccata</i>
<i>Leucothoe axillaris</i>	<i>Taxus x media</i>
<i>Leucothoe fontanesiana</i>	
<i>Mahonia aquifolium</i>	

## Shrubs - Deciduous

<i>Abelia x grandiflora</i>	<i>Kerria japonica</i>
<i>Aesculus parviflora</i>	<i>Rhus aromatica</i>
<i>Calycanthus floridus</i>	<i>Symporicarpos albus</i>
<i>Clethra acuminata</i>	<i>Viburnum acerifolium</i>
<i>Clethra alnifolia</i>	<i>Viburnum dentatum</i>
<i>Cornus</i>	<i>Viburnum x jackii</i>
<i>Daphne caucasica</i>	<i>Viburnum lentago</i>
<i>Hamamelis virginiana</i>	<i>Viburnum lantanoides</i>
<i>Hydrangea arborescens</i>	<i>Viburnum prunifolium</i>
<i>Hydrangea quercifolia</i>	

## Plants Suitable for a Shaded Location, cont.

### Ground Covers

*Cornus canadensis*  
*Epimedium*  
*Gaultheria procumbens*  
*Hedera colchica*

*Mahonia repens*  
*Pachysandra procumbens*  
*Pachysandra terminalis*

### Vines

*Hedera colchica*  
*Hydrangea anomala* subsp. *petiolaris*  
*Parthenocissus quiquefolia*  
*Schizophragma hydrangeoides*

### Perennials

<i>Aconitum napellus</i>	<i>Heuchera</i>
<i>Ajuga</i>	<i>Hosta</i>
<i>Anemone nemorosa</i>	<i>Iris cristata</i>
<i>Aquilegia</i> , some	<i>Iris foetidissima</i>
<i>Arisaema</i>	<i>Lamium</i>
<i>Aruncus dioicus</i>	<i>Ligularia</i>
<i>Asarum</i>	<i>Liriope</i>
<i>Aster divaricatus</i>	<i>Lobelia</i>
<i>Astilbe</i>	<i>Mertensia</i>
<i>Bergenia</i>	<i>Ophiopogon</i>
<i>Brunnera macrophylla</i>	<i>Paeonia emodii</i>
<i>Campanula latifolia</i>	<i>Phlox divaricata</i>
<i>Cardiocrinum giganteum</i>	<i>Phlox stolonifera</i>
<i>Chelone</i>	<i>Polygonatum</i>
<i>Chrysogonium</i>	<i>Primula</i> sp.
<i>Cimicifuga</i>	<i>Pulmonaria</i>
<i>Convallaria majalis</i>	<i>Saxifraga fortunei</i>
<i>Dicentra</i>	<i>Smilacina racemosa</i>
<i>Erythronium</i>	<i>Sympyrum grandiflorum</i>
<i>Eupatorium rugosum</i>	<i>Teucrium</i>
<i>Euphorbia robbiae</i>	<i>Thalictrum</i>
Ferns	<i>Tiarella</i>
<i>Galax urceolata</i> ( <i>aphylla</i> )	<i>Tradescantia</i>
<i>Galium</i>	<i>Tricyrtis</i>
<i>Gentiana asclepiadea</i>	<i>Trollius</i>
<i>Geranium</i>	<i>Veratrum</i>
<i>Helleborus</i>	<i>Viola odorata</i>
<i>Hesperis matronalis</i>	

# Recommended Street Trees for Long Island

(Source: Bassuk, N., D.F. Curtis, B.Z. Marranca, and B. Neal. 2009. Recommended Urban Trees. Ithaca; Urban Horticulture Institute, Cornell University.) Updated 2016, N. Bassuk.

For more information on urban planting options, explore the Woody Plants Database: <http://woodyplants.cals.cornell.edu/home>

## Small Trees

Suitable within 15 feet of 35-foot high electric wires, or in restricted tree lawn areas (less than 4 feet wide).

Tree Heights approximately 20 ft. – 40 ft.

*Acer buergerianum*  
*Acer miyabei*  
*Acer tataricum*  
*Acer truncatum*  
*Amelanchier* spp.  
    (resistant cultivars only i.e. 'Cumulus', 'Autumn Brilliance', 'Robin Hill')  
*Carpinus caroliniana*  
*Cercis canadensis*  
*Cornus kousa*  
*Cornus mas*  
*Cotinus obovatus*  
*Crataegus crus-galli* var. *inermis*  
*Crataegus phaenopyrum*  
*Crataegus viridis* 'Winter King'  
*Gleditsia triacanthos* var. *inermis* 'Imperial'  
*Koelreuteria paniculata*  
*Maackia amurensis*  
*Malus* spp. (resistant cultivars only)  
*Parrotia persica*  
*Prunus* spp. (less than 35' tall i.e. 'Snow Goose') (P. *virginiana* is not recommended due to Black Knot susceptibility)  
*Sorbus hybrida*  
*Syringa reticulata*  
*Tilia cordata* 'Summer Sprite'  
*Zelkova serrata* 'Wireless', 'City Sprite'

## Large Trees > 35 feet

Should be set back at least 25 ft. from overhead wires and in tree lawns at least 8 ft wide.

*Acer x freemanii* i.e. 'Armstrong', 'Autumn Blaze'  
*Acer rubrum*  
*Acer saccharum*  
*Aesculus x carnea*  
*Betula nigra* 'Heritage', 'Dura-Heat'  
*Betula populifolia* 'Whitespire Sr.'  
*Carpinus betulus*  
*Catalpa speciosa*  
*Celtis laevigata*  
*Celtis occidentalis*

## Recommended Street Trees for Long Island, cont.

*Cladrastis kentukea*

*Corylus colurna*

*Eucommia ulmoides*

*Ginkgo biloba*

*Gleditsia triacanthos* var. *inermis*

(resistant cultivars only i.e. 'Shademaster' 'Skyline', 'Halka')

*Gymnocladus dioicus*

*Liquidambar styraciflua*

*Liriodendron tulipifera*

*Maclura pomifera* var. *inermis* (male)

*Metasequoia glyptostroboides*

*Nyssa sylvatica*

*Ostrya virginiana*

*Platanus x acerifolia*

*Prunus sargentii*

*Quercus acutissima*

*Quercus bicolor*

*Quercus coccinea*

*Quercus imbricaria*

*Quercus lyrata*

*Quercus macrocarpa*

*Quercus muehlenbergii*

*Quercus palustris*

*Quercus phellos*

*Quercus robur*

*Quercus rubra*

*Quercus shumardii*

*Sorbus alnifolia*

*Styphnolobium japonicum*

*Taxodium distichum*

*Tilia americana*

*Tilia cordata*

*Tilia tomentosa*

*Tilia x euchlora*

*Ulmus parvifolia*

*Ulmus* cultivars

(resistant cultivars only)

*Zelkova serrata*

# Trees to Be Cautious of for Fall Transplanting

Over the years, nursery growers, arborists, and landscapers have found that some species are more prone to difficulties when transplanted in the fall balled-and-burlapped rather than in the spring. You may want to consider transplanting the following species only in the spring, or use extra precautions if you do transplant in the fall. (Source: Himelick, E.B. 1984. Tree and Shrub Transplanting Manual. Urbana, IL: International Society of Arboriculture.)

<i>Abies</i> spp.	<i>Ostrya virginiana</i>
<i>Betula</i> spp.	<i>Oxydendrum arboreum</i>
<i>Carpinus caroliniana</i>	<i>Populus</i> spp.
<i>Carya</i> spp.	<i>Prunus</i> spp.
<i>Chionanthus virginicus</i>	<i>Quercus alba</i>
<i>Cladrastis kentukea</i>	<i>Quercus bicolor</i>
<i>Cornus florida</i>	<i>Quercus coccinea</i>
<i>Diospyros virginiana</i>	<i>Quercus imbricaria</i>
<i>Fagus</i> spp.	<i>Quercus macrocarpa</i>
<i>Ginkgo biloba</i>	<i>Quercus muehlenbergii</i>
<i>Ilex opaca</i>	<i>Quercus phellos</i>
<i>Juglans</i> spp.	<i>Quercus prinus</i>
<i>Koelreuteria paniculata</i>	<i>Quercus robur</i>
<i>Laburnum</i> spp.	<i>Quercus rubra</i>
<i>Larix</i> spp.	<i>Quercus shumardii</i>
<i>Liquidambar styraciflua</i>	<i>Quercus velutina</i>
<i>Liriodendron tulipifera</i>	<i>Salix</i> spp.
<i>Magnolia</i> spp.	<i>Sassafras albidum</i>
<i>Nyssa sylvatica</i>	<i>Taxodium</i> spp.

## Plants Suitable for a Wet Location

### Trees - Evergreen

*Chamaecyparis thyoides*  
*Magnolia grandiflora*  
*Thuja occidentalis*

### Trees - Deciduous

*Acer x freemanii*  
*Acer rubrum*  
*Amelanchier* spp.  
*Betula nigra*  
*Celtis occidentalis*  
*Fraxinus pennsylvanica*  
*Hamamelis macrophylla*  
*Hamamelis virginiana*  
*Ilex decidua*  
*Liquidambar styraciflua*  
*Magnolia virginiana*

*Metasequoia glyptostroboides*  
*Nyssa sylvatica*  
*Quercus bicolor*  
*Quercus palustris*  
*Quercus phellos*  
*Salix alba*  
*Salix babylonica*  
*Taxodium distichum*  
*Viburnum x jackii*

## Shrubs - Evergreen

*Ilex glabra*  
*Chamaecyparis thyoides*  
*Thuja occidentalis*

## Shrubs - Deciduous

*Aronia arbutifolia*  
*Aronia melanocarpa*  
*Clethra alnifolia*  
*Cornus alba*  
*Cornus sericea*  
*Hamamelis vernalis*  
*Hamamelis virginiana*  
*Ilex decidua*  
*Ilex verticillata*  
*Itea japonica*  
*Itea virginica*  
*Lindera benzoin*

*Rhododendron canadense*  
*Rhododendron nudiflorum*  
*Rhododendron vaseyi*  
*Rhododendron viscosum*  
*Salix*  
*Sambucus nigra*  
*Vaccinium corymbosum*  
*Viburnum acerifolium*  
*Viburnum dentatum*  
*Viburnum lentago*

## Ground Covers

*Vaccinium macrocarpon*

## Perennials

*Aconitum*  
*Acorus*  
*Ajuga*  
*Aruncus dioicus*  
*Asclepias incarnata*  
*Asperula odorata*  
*Aster novae-angliae*  
*Astilbe*  
*Astrantia*  
*Bergenia*  
*Brunnera*  
*Caltha palustris*  
*Chelone*  
*Cimicifuga racemosa*  
*Convallaria*  
*Dodecatheon*  
*Equisetum*  
*Erianthus*  
*Eupatorium*  
*Ferns*  
*Filipendula, most*  
*Galium*  
*Geranium*  
*Helenium autumnale*  
*Hemerocallis hybrids*  
*Hibiscus moscheutos & hybrids*

*Hosta*  
*Iris ensata*  
*Iris siberica*  
*Iris tectorum*  
*Juncus*  
*Ligularia*  
*Liriope*  
*Lobelia*  
*Mentha*  
*Mertensia virginica*  
*Monarda*  
*Oenothera*  
*Physostegia virginiana*  
*Primula*  
*Primula japonica*  
*Pulmonaria*  
*Rodgersia*  
*Thalictrum*  
*Tiarella*  
*Tradescantia*  
*Tricyrtis*  
*Trollius*  
*Typha*  
*Veratrum*  
*Veronicastrum*

# Long Island Native Plants

## Ferns

<i>Athyrium filix-femina</i>	Lady Fern
<i>Dennstaedtia punctilobula</i>	Hay-scented Fern
<i>Onoclea sensibilis</i>	Sensitive Fern
<i>Osmunda cinnamomea</i>	Royal Fern
<i>Osmunda regalis</i>	Royal Fern
<i>Polystichum acrostichoides</i>	Christmas Fern
<i>Thelypteris noveboracensis</i>	New York Fern

## Grasses, Sedges, Rushes

<i>Ammophila breviligulata</i>	Beach Grass
<i>Andropogon gerardii</i>	Big Bluestem
<i>Andropogon glomeratus</i>	Bushy Bluestem
<i>Andropogon virginicus</i>	Broomsedge
<i>Carex crinita</i>	Fringed Sedge
<i>Carex laxiculmis</i>	Spreading Sedge
<i>Carex pensylvanica</i>	Pennsylvania Sedge
<i>Deschampsia flexuosa</i>	Wavy-hair Grass
<i>Elymus virginicus</i>	Eastern Wild Rye
<i>Eragrostis spectabilis</i>	Purple Lovegrass
<i>Juncus canadensis</i>	Canadian Rush
<i>Juncus effusus</i>	Soft Rush
<i>Juncus gerardii</i>	Saltmarsh Rush/Black Grass
<i>Juncus greenei</i>	Greene's Rush
<i>Juncus tenuis</i>	Path Rush
<i>Panicum virgatum</i>	Switchgrass
<i>Schizachyrium scoparium</i>	Little Bluestem
<i>Schoenoplectus pungens</i>	Three-square Bulrush
<i>Schoenoplectus tabernaemontanii</i>	Softstem Bulrush
<i>Sisyrinchium angustifolium</i>	Blue-eyed Grass
<i>Scirpus cyperinus</i>	Wool Grass
<i>Sorghastrum nutans</i>	Indian Grass
<i>Spartina patens</i>	Salt Meadow Cordgrass
<i>Spartina pectinata</i>	Freshwater Cordgrass

## Perennials (includes Aquatics)

<i>Achillea millefolium</i>	Common Yarrow
<i>Ageratina altissima</i>	White Snakeroot
<i>Arisaema triphyllum</i>	Jack-in-the-Pulpit
<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Asclepias syriaca</i>	Common Milkweed
<i>Asclepias tuberosa</i>	Butterfly Weed
<i>Baptisia tinctoria</i>	Wild Yellow Indigo
<i>Caltha palustris</i>	Marsh Marigold
<i>Chelone glabra</i>	Turtle Head
<i>Chrysopsis mariana</i>	Maryland Golden Aster
<i>Cirsium discolor</i>	Field Thistle
<i>Eupatorium hyssopifolium</i>	Hyssop-leaved Thoroughwort
<i>Eupatorium perfoliatum</i>	Boneset
<i>Eupatorium pilosum</i>	Rough Boneset
<i>Eurybia divaricata</i>	White Wood Aster
<i>Euthamia caroliniana</i>	Coastal Grass-leaved Goldenrod

## Long Island Native Plants, cont.

<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod
<i>Eutrochium dubium</i>	Eastern Joe Pye Weed
<i>Eutrochium fistulosum</i>	Hollow-stemmed Joe Pye Weed
<i>Geranium maculatum</i>	Wild Geranium
<i>Geum canadense</i>	White Avens
<i>Hibiscus moscheutos</i>	Swamp Rose Mallow
<i>Iris versicolor</i>	Blue Flag
<i>Lathyrus japonicus</i>	Beach Pea
<i>Lespedeza capitata</i>	Round-headed Bush Clover
<i>Lobelia cardinalis</i>	Cardinal Flower
<i>Lobelia siphilitica</i>	Great Blue Lobelia
<i>Lycopus americanus</i>	American Water-Horehound
<i>Mimulus ringens</i>	Monkey Flower
<i>Monarda fistulosa</i>	Wild Bergamot
<i>Peltandra virginica</i>	Arrow Arum
<i>Pontederia cordata</i>	Pickerelweed
<i>Pycnanthemum muticum</i>	Short-toothed Mountain Mint
<i>Sagittaria latifolia</i>	Arrowhead
<i>Solidago bicolor</i>	White Goldenrod
<i>Solidago nemoralis</i>	Gray Goldenrod
<i>Solidago canadensis</i>	Canada Goldenrod
<i>Solidago odora</i>	Sweet Goldenrod
<i>Solidago rugosa</i>	Wrinkle-leafed Goldenrod
<i>Solidago sempervirens</i>	Seaside Goldenrod
<i>Symphotrichum dumosum</i>	Bushy Aster
<i>Symphotrichum ericoides</i>	Heath Aster
<i>Symphotrichum lateriflorum</i>	Calico Aster
<i>Symphotrichum novae-angliae</i>	New England Aster
<i>Symphotrichum novi-belgii</i>	New York Aster
<i>Symphotrichum patens</i>	Late Purple Aster
<i>Symphotrichum puniceum</i>	Purple-stemmed Aster
<i>Symphotrichum undulatum</i>	Wavy-leaved Aster
<i>Teucrium canadense</i>	Germander/Wood Sage
<i>Verbena hastata</i>	Blue Vervain
<i>Vernonia noveboracensis</i>	New York Ironweed
<i>Viola cucullata</i>	Marsh Blue Violet

## Shrubs

<i>Arctostaphylos uva-ursi</i>	Bearberry
<i>Aronia arbutifolia</i>	Red Chokeberry
<i>Aronia melanocarpa</i>	Black Chokeberry
<i>Baccharis halimifolia</i>	Groundsel Bush
<i>Cephalanthus occidentalis</i>	Buttonbush
<i>Clethra alnifolia</i>	Summersweet
<i>Comptonia peregrina</i>	Sweet Fern
<i>Cornus amomum</i>	Silky/Swamp Dogwood
<i>Decodon verticillatus</i>	Water Willow
<i>Gaylussacia baccata</i>	Black Huckleberry
<i>Hudsonia tomentosa</i>	Sand Heather
<i>Ilex glabra</i>	Inkberry
<i>Ilex verticillata</i>	Winterberry
<i>Iva frutescens</i>	Marsh Elder
<i>Juniperus communis</i>	Common Juniper

<i>Kalmia latifolia</i>	Mountain Laurel
<i>Leucothoe racemosa</i>	Swamp Sweetbells
<i>Lyonia ligustrina</i>	Maleberry
<i>Morella caroliniensis</i>	Bayberry
<i>Opuntia humifusa</i>	Prickly Pear Cactus
<i>Prunus maritima</i>	Beach Plum
<i>Rhododendron viscosum</i>	Swamp Azalea
<i>Rhus copalina</i>	Winged Sumac
<i>Rhus glabra</i>	Smooth Sumac
<i>Rosa carolina</i>	Pasture Rose
<i>Rosa palustris</i>	Swamp Rose
<i>Rosa virginiana</i>	Virginia Rose
<i>Salix discolor</i>	Pussy Willow
<i>Sambucus nigra</i>	American Elderberry
<i>Spiraea alba</i>	White Meadowsweet
<i>Spiraea tomentosa</i>	Rosy Meadowsweet
<i>Vaccinium angustifolium</i>	Lowbush Blueberry
<i>Vaccinium corymbosum</i>	Highbush Blueberry
<i>Vaccinium macrocarpon</i>	Cranberry
<i>Viburnum acerifolium</i>	Maple-leaved Viburnum
<i>Viburnum dentatum</i> var. <i>lucidum</i>	Smooth Arrowwood
<i>Viburnum dentatum</i> var. <i>venosum</i>	Southern Arrowwood

## Trees, Tall Shrubs

<i>Acer rubrum</i>	Red Maple
<i>Alnus incana</i>	Speckled Alder
<i>Amelanchier canadensis</i>	Coastal Shadblush
<i>Amelanchier laevis</i>	Smooth Shadblush
<i>Betula lenta</i>	Sweet Birch
<i>Betula populifolia</i>	Gray Birch
<i>Carpinus caroliniana</i>	Ironwood
<i>Carya glabra</i>	Pignut Hickory
<i>Carya tomentosa</i>	Mockernut Hickory
<i>Celtis occidentalis</i>	Hackberry
<i>Chamaecyparis thyoides</i>	Atlantic White Cedar
<i>Cornus alternifolia</i>	Pagoda Dogwood
<i>Cornus florida</i>	Flowering Dogwood
<i>Crataegus crus-galli</i>	Cockspur Hawthorn
<i>Crataegus mollis</i>	Downy Hawthorn
<i>Crataegus punctata</i>	Dotted Hawthorn
<i>Fagus grandifolia</i>	American beech
<i>Fraxinus americana</i>	White Ash
<i>Fraxinus pensylvanica</i>	Green Ash
<i>Hamamelis virginiana</i>	Witchazel
<i>Ilex opaca</i>	American Holly
<i>Juglans cinerea</i>	Butternut
<i>Juglans nigra</i>	Black Walnut
<i>Juniperus virginiana</i>	Eastern Red Cedar
<i>Lindera benzoin</i>	Spicebush
<i>Liquidambar styraciflua</i>	Sweetgum
<i>Liriodendron tulipifera</i>	Tulip Poplar
<i>Nyssa sylvatica</i>	Tupelo
<i>Pinus rigida</i>	Pitch Pine
<i>Pinus strobus</i>	White Pine
<i>Populus tremuloides</i>	Quaking Aspen

## Long Island Native Plants, cont.

<i>Prunus serotina</i>	Black Cherry
<i>Quercus alba</i>	White Oak
<i>Quercus coccinea</i>	Scarlet Oak
<i>Quercus ilicifolia</i>	Bear Oak
<i>Quercus montana</i>	Chestnut Oak
<i>Quercus stellata</i>	Post Oak
<i>Quercus velutina</i>	Black Oak
<i>Salix nigra</i>	Black Willow
<i>Sassafras albidum</i>	Sassafras
<i>Tilia americana</i>	American Basswood

### Vines & Lianas:

<i>Lonicera sempervirens</i>	Coral Honeysuckle
<i>Parthenocissus quinquefolia</i>	Virginia Creeper
<i>Vitis labrusca</i>	Fox Grape
<i>Apios americana</i>	Groundnut
<i>Strophostyles umbellata</i>	Wild Pink Fuzzy Bean

Reviewed 2016 by Victoria Bustamante, Warrens Nursery Inc. and Provenance Natives.

## Plants for Various Conditions

Following are lists of plants that might be considered for use in various situations, both environmental and ornamental. These lists are by no means complete but meant to provide ideas for plant use when needed. In some cases, the plants may prefer the conditions while in others they may be tolerant of the conditions they are listed under. In general, plants are able to survive difficult conditions better after they are established. Other species and/or cultivars might exist in the genus that would also be suitable for those conditions. Where only the genus is listed, all species within the genus might not be suitable.

The following can be used as a guide for light conditions.

Sunny	Minimum 6 hours of direct sun/ day during the growing season
Partial Shade	< 4 hours of direct sun
Shade	No direct sun

# Perennials for Cut Flowers

<i>Acanthus spinosus</i>	<i>Gypsophila elegans</i>
<i>Achillea filipendulina</i>	<i>Gypsophila paniculata</i>
<i>Achillea millefolium</i>	<i>Helenium autumnale</i>
<i>Aconitum napellus</i>	<i>Helleborus niger</i>
<i>Anthemis tinctoria</i>	<i>Heuchera</i>
<i>Aquilegia hybrida</i>	<i>Iris ensata</i>
<i>Armeria maritima</i>	<i>Iris siberica</i>
<i>Astilbe</i>	<i>Iris spuria</i>
<i>Aster</i>	<i>Lavandula angustifolia</i>
<i>Campanula persicifolia</i>	<i>Liatris</i>
<i>Centaurea cyanus</i>	<i>Lilium</i>
<i>Chrysanthemum coccineum</i>	<i>Linaria purpurea 'Canon J. Went'</i>
<i>Chrysanthemum morifolium</i>	<i>Lychnis chalcedonica</i>
<i>Convallaria majalis</i>	<i>Lobelia cardinalis</i>
<i>Coreopsis lanceolata</i>	<i>Lupinus 'Russell Hybrid'</i>
<i>Coreopsis verticillata</i>	<i>Monarda didyma</i>
<i>Delphinium elatum</i>	<i>Paeonia lactiflora</i>
<i>Dianthus caryophyllus</i>	<i>Papaver orientale</i>
<i>Digitalis</i>	<i>Penstemon</i>
<i>Dicentra eximia</i>	<i>Physostegia virginiana</i>
<i>Dicentra spectabilis</i>	<i>Platycodon grandiflorus</i>
<i>Doronicum cordatum</i>	<i>Pyrethrum</i>
<i>Echinacea purpurea</i>	<i>Rudbeckia</i>
<i>Erigeron speciosus</i>	<i>Stokesia laevis</i>
<i>Eupatorium</i>	<i>Trollius europaeus</i>
<i>Gaillardia x grandiflora</i>	<i>Veronica spicata</i>
<i>Geum hybrids</i>	

# Grey-Leaved Perennials

<i>Achillea 'Moonshine'</i>
<i>Anaphalis</i> sp.
<i>Artemisia</i> , esp. <i>A. ludoviciana</i> & <i>A. l. 'Silver Queen'</i> , <i>A. schmidtiana</i> 'Nana'
<i>Cerastium</i> sp.
<i>Crambe maritima</i>
<i>Dianthus</i> sp. & cv.
<i>Eryngium maritimum</i>
<i>Festuca ovina glauca</i>
<i>Helictotrichon sempervirens</i>
<i>Lavandula angustifolia</i>
<i>Lychnis coronaria</i>
<i>Potentilla</i> , some
<i>Ruta graveolens</i> & cvs.
<i>Salvia argentea</i>
<i>Salvia officinalis</i>
<i>Scabiosa graminifolia</i>
<i>Sedum</i> , some
<i>Stachys byzantina</i>
<i>Thalictrum speciosissimum</i>
<i>Verbascum bobmyciferum</i> (biennial)
<i>Veronica incana</i>
<i>Veronica 'Minuet'</i>

# Long Blooming Perennials

*Achillea 'Coronation Gold'*  
*Achillea filipendulina 'Gold Plate'*  
*Armeria maritima*  
*Anaphalis triplinervis*  
*Astilbe chinensis pumila*  
*Brunnera macrophylla*  
*Campanula carpatica*  
*Chrysanthemum parthenium*  
*Chrysanthemum 'Snow Lady'*  
*Chrysogonum virginianum*  
*Cimicifuga racemosa*  
*Coreopsis 'Flying Saucers'*  
*Coreopsis 'Goldfink'*  
*Coreopsis x grandiflora*  
*Dicentra 'Bountiful'*  
*Dicentra 'Luxuriant'*  
*Dicentra eximia*  
*Echinacea purpurea cvs.*  
*Erigeron karvinskianus*  
*Gaura 'Whirling Butterflies'*  
*Gaura 'Siskyou Pink'*  
*Geranium sanguineum prostratum (*lancastriense*)*  
*Heliopsis cvs.*  
*Monarda didyma cvs.*  
*Nepeta x faassenii*, if cut back after first bloom  
*Oenothera speciosa*  
*Phlox paniculata cvs.*  
*Platycodon grandiflorus*  
*Polygonum amplexicaule 'Atrosanguineum'*  
*Rudbeckia fulgida* var. *sullivantii* 'Goldsturm'  
*Salvia 'Blue Hill'*  
*Salvia 'Maraschino'*  
*Salvia nemorosa 'Superba'*  
*Salvia plumosa*  
*Salvia 'Snow Hill'*  
*Scabiosa 'Butterfly Blue'*  
*Scabiosa 'Pink Mist'*  
*Sedum 'Autumn Joy'*  
*Tradescantia x andersoniana* (virgiana of gardens)  
*Verbascum 'Southern Charm'*  
*Verbena 'Homestead Purple'*  
*Verbena 'Sissinghurst'*  
*Verbena 'Taylortown Red'*

# Perennials - Flowering Month By Month

## March

<i>Arabis caucasica</i>	(March to May)
<i>Helleborus niger</i>	(March and April)
<i>Helleborus orientalis</i>	(March to May)
<i>Phlox subulata</i>	(March to May)

## April

<i>Ajuga reptans</i>	(April and May)
<i>Anemone pulsatilla</i>	(April and May)
<i>Arabis caucasica</i>	(March to May)
<i>Aubrieta deltoides</i>	(April and May)
<i>Aurina saxatilis</i>	(April and May)
<i>Bergenia cordifolia</i>	(April and May)
<i>Brunnera macrophylla</i>	(April to June)
<i>Erysimum asperum</i>	(April and May)
<i>Helleborus niger</i>	(March and April)
<i>Helleborus orientalis</i>	(March and April)
<i>Iberis sempervirens</i>	(April and May)
<i>Mertensia virginica</i>	(April and May)
<i>Phlox subulata</i>	(March to May)
<i>Primula x polyantha</i>	(April and May)
<i>Pulmonaria saccharata</i>	(April and May)
<i>Viola odorata</i>	(April and May)

## May

<i>Ajuga reptans</i>	(April and May)
<i>Anemone pulsatilla</i>	(April and May)
<i>Aquilegia hybrida</i>	(May and June)
<i>Arabis caucasica</i>	(March to May)
<i>Armeria maritima</i>	(May and June)
<i>Aubrieta deltoides</i>	(April and May)
<i>Aurina saxatilis</i>	(April and May)
<i>Bergenia cordifolia</i>	(April and May)
<i>Brunnera macrophylla</i>	(April to June)
<i>Centaurea montana</i>	(May to July)
<i>Cerastium tomentosum</i>	(May and June)
<i>Convallaria majalis</i>	(May)
<i>Dianthus caesius 'Tiny Rubies'</i>	(May)
<i>Dianthus pulmarius</i>	(May and June)
<i>Dicentra eximia</i>	(May to September)
<i>Dicentra spectabilis</i>	(May and June)
<i>Dictamnus albus</i>	(May and June)
<i>Doronicum cordatum</i>	(May)
<i>Epimedium x rubrum</i>	(May and June)
<i>Erysimum asperum</i>	(April and May)
<i>Galium odoratum</i>	(May and June)
<i>Geum hybrids</i>	(May to August)
<i>Hemerocallis spp.</i>	(May to September)
<i>Iberis sempervirens</i>	(April and May)
<i>Iris germinica hybrids</i>	(May and June)

## Perennials, Flowering by Month, cont.

### May, cont.

<i>Lamiastrum galeobdolon</i>	(April and May)
<i>Mertensia virginica</i>	(April and May)
<i>Paeonia lactiflora</i>	(May and June)
<i>Paeonia suffruticosa</i>	(May and June)
<i>Paeonia tenuifolia rubra plena</i>	(May)
<i>Phlox stolonifera</i>	(May and June)
<i>Phlox subulata</i>	(March and May)
<i>Polemonium caeruleum</i>	May and June)
<i>Primula x polyantha</i>	(April and May)
<i>Pulmonaria angustifolia</i>	(April and May)
<i>Pulmonaria saccharata</i>	(April and May)
<i>Thymus serpyllum</i>	(May and June)
<i>Tiarella cordifolia</i>	(May)
<i>Trollius europaeus</i>	(May and June)
<i>Viola odorata</i>	(April and May)
<i>Waldsteinia fragarioides</i>	(May and June)

### June

<i>Achillea filipendulina</i>	June to August)
<i>Anthemis tinctoria</i>	(June to September)
<i>Aquilegia hybrida</i>	(May and June)
<i>Armeria maritima</i>	(May and June)
<i>Asclepias tuberosa</i>	(June to August)
<i>Astilbe x arendsii</i>	(June and July)
<i>Brunnera macrophylla</i>	(April to June)
<i>Campanula carpatica</i>	(June to August)
<i>Campanula persicifolia</i>	(June and July)
<i>Centaurea montana</i>	(May to July)
<i>Cerastium tomentosum</i>	(May and June)
<i>Chrysanthemum coccineum</i>	(June and July)
<i>Clematis x jackmanii</i>	(June to September)
<i>Coreopsis lanceolata</i>	(June to September)
<i>Coreopsis verticillata</i>	(June to September)
<i>Delphinium elatum</i>	(June and July)
<i>Dianthus plumarius</i>	(May and June)
<i>Dicentra eximia</i>	(May to September)
<i>Dicentra spectabilis</i>	(May and June)
<i>Dictamnus albus</i>	(May and June)
<i>Digitalis purpurea</i>	(June and July)
<i>Epimedium x rubrum</i>	(May and June)
<i>Erigeron speciosus</i>	(June and July)
<i>Gaillardia x grandiflora</i>	(June to September)
<i>Galium odoratum</i>	(May and June)
<i>Gypsophila paniculata</i>	(June and July)
<i>Hemerocallis hybrids</i>	(May to September)
<i>Heuchera sanguinea</i>	(June and July)
<i>Iris hybrids</i>	(May and June)
<i>Iris ensata</i>	(June and July)
<i>Iris sibirica</i>	(June)
<i>Lavandula angustifolia</i>	(June to September)
<i>Linum perenne</i>	(June to August)

## June, cont.

<i>Lupinus 'Russell Hybrid'</i>	(June)
<i>Lychnis chalcedonica</i>	(June and July)
<i>Monarda didyma</i>	(June to August)
<i>Oenothera fruticosa</i>	(June to August)
<i>Paeonia lactiflora</i>	(May and June)
<i>Paeonia suffruticosa</i>	(May and June)
<i>Papaver orientale</i>	(June and July)
<i>Polemonium caeruleum</i>	(May and June)
<i>Rudbeckia fulgida</i>	(June to September)
<i>Saponaria ocymoides</i>	(June)
<i>Stokesia laevis</i>	(June to September)
<i>Teucrium chamaedrys</i>	(June and July)
<i>Thymus serpyllum</i>	(May and June) <sup>1</sup>
<i>Trollius europaeus</i>	(May and June)
<i>Veronica spicata</i>	(June to August)
<i>Waldsteinia fragarioides</i>	(May and June)
<i>Yucca filamentosa</i>	(June to August)

## July

<i>Acanthus spinosissimus</i>	(July and August)
<i>Achillea filipendulina</i>	(June to August)
<i>Achillea millefolium</i>	(July to September)
<i>Anthemis tinctoria</i>	(June to September)
<i>Asclepias tuberosa</i>	(June to August)
<i>Astilbe x arendsi</i>	(June and July)
<i>Belamcanda chinensis</i>	(July to September)
<i>Campanula carpatica</i>	(June to August)
<i>Campanula persicifolia</i>	(June and July)
<i>Catananche caerulea</i>	(July and August)
<i>Centaurea montana</i>	(May to July)
<i>Chrysanthemum coccineum</i>	(June and July)
<i>Cimicifuga racemosa</i>	(July and August)
<i>Clematis x jackmanii</i>	(June to September)
<i>Coreopsis lanceolata</i>	(June to September)
<i>Coreopsis verticillata</i>	(June to September)
<i>Delphinium elatum</i>	(June and July)
<i>Dicentra eximia</i>	(May to September)
<i>Digitalis purpurea</i>	(June and July)
<i>Echinacea purpurea</i>	(July to September)
<i>Echinops exaltatus</i>	(July to September)
<i>Erigeron speciosus</i>	(June and July)
<i>Eryngium amethystinum</i>	(July and August)
<i>Gaillardia x grandiflora</i>	(June to September)
<i>Gypsophila paniculata</i>	(June and July)
<i>Helenium autumnale</i>	(July to October)
<i>Hemerocallis hybrids</i>	(May to September)
<i>Heuchera sanguinea</i>	(June and July)
<i>Iris ensata</i>	(June and July)
<i>Lavandula angustifolia</i>	(June to September)
<i>Liatris spicata</i>	(July to September)
<i>Linum perenne</i>	(June to August)
<i>Lobelia cardinalis</i>	(July to September)
<i>Lychnis chalcedonica</i>	(June and July)
<i>Mondarda didyma</i>	(June to August)

## Perennials Flowering by Month, cont.

### July, cont.

<i>Oenothera fruticosa</i>	(June to August)
<i>Papaver orientale</i>	(June and July)
<i>Phlox paniculata</i>	(July to September)
<i>Physostegia virginiana</i>	(July to September)
<i>Platycodon grandiflorus</i>	(July to September)
<i>Rudbeckia fulgida</i>	(June to September)
<i>Stokesia laevis</i>	(June to September)
<i>Teucrium chamaedrys</i>	(June and July)
<i>Veronica spicata</i>	(June to August)
<i>Yucca filamentosa</i>	(June to August)

### August

<i>Acanthus spinosissimus</i>	(July and August)
<i>Achillea filipendulina</i>	(June to August)
<i>Achillea millefolium</i>	(July to September)
<i>Aconitum napellus</i>	(August and September)
<i>Anthemis tinctoria</i>	(June to September)
<i>Asclepias tuberosa</i>	(June to August)
<i>Aster novae-belgii</i>	(August to October)
<i>Astilbe chinensis</i>	(July to August)
<i>Belamcanda chinensis</i>	(July to September)
<i>Campanula carpatica</i>	(June to August)
<i>Catananche caerulea</i>	(July and August)
<i>Ceratostigma plumbaginoides</i>	(August to October)
<i>Chrysanthemum morifolium</i>	(August to October)
<i>Climicifuga racemosa</i>	(July and August)
<i>Clematis x jackmanii</i>	(June to September)
<i>Coreopsis lanceolata</i>	(June to September)
<i>Coreopsis verticillata</i>	(June to September)
<i>Dicentra eximia</i>	(May to September)
<i>Echinacea purpurea</i>	(July to September)
<i>Echinops exaltatus</i>	(July to September)
<i>Eryngium amethystinum</i>	(July and August)
<i>Gaillardia x grandiflora</i>	(June to September)
<i>Helenium autumnale</i>	(July to October)
<i>Hemerocallis hybrids</i>	(May to September)
<i>Hibiscus moscheutos</i>	(July to October)
<i>Hosta plantaginea</i>	(August and September)
<i>Liatris spp.</i>	(July to September)
<i>Linum perenne</i>	(June to August)
<i>Lobelia cardinalis</i>	(July to September)
<i>Monarda didyma</i>	(June to August)
<i>Oenothera fruticosa</i>	(June to August)
<i>Phlox paniculata</i>	(July to September)
<i>Physostegia virginiana</i>	(July to September)
<i>Platycodon grandiflorus</i>	(July to September)
<i>Sedum spectabile</i>	(August to October)
<i>Stokesia laevis</i>	(June to September)
<i>Veronica spicata</i>	(June to August)
<i>Yucca filamentosa</i>	(June to August)

## Perennials Flowering by Month, cont.

### September

<i>Achillea millefolium</i>	(July to September)
<i>Aconitum nepallus</i>	(August and September)
<i>Anthemis tinctoria</i>	(June to September)
<i>Aster novae-belgii</i>	(August to October)
<i>Belamcanda chinensis</i>	(July to September)
<i>Ceratostigma plumbaginoides</i>	(August to October)
<i>Chrysanthemum morifolium</i>	(August to October)
<i>Clematis x jackmanii</i>	(June to September)
<i>Coreopsis lanceolata</i>	(June to September)
<i>Coreopsis verticillata</i>	(June to September)
<i>Dicentra exima</i>	(May to September)
<i>Echinacea purpurea</i>	(July to September)
<i>Echinops exaltatus</i>	(July to September)
<i>Gaillardia x grandiflora</i>	(June to September)
<i>Helenium autumnale</i>	(July to October)
<i>Hemerocallis</i> hybrids	(May to September)
<i>Hibiscus moscheutos</i>	(July to October)
<i>Hosta plantaginea</i>	(August and September)
<i>Lavandula angustifolia</i>	(June to September)
<i>Liatris</i> spp.	(July to September)
<i>Lobelia cardinalis</i>	(July to September)
<i>Lythrum salicaria</i>	(July to September)
<i>Phlox paniculata</i>	(July to September)
<i>Physostegia virginiana</i>	(July to September)
<i>Platycodon grandiflorus</i>	(July to September)
<i>Sedum spectabile</i>	(August to October)
<i>Stokesia laevis</i>	(June to September)

### October

<i>Aster novae-belgii</i>	(August to October)
<i>Ceratostigma plumbaginoides</i>	(August to October)
<i>Helenium autumnale</i>	(July to October)
<i>Hibiscus moscheutos</i>	(July to October)
<i>Sedum spectabile</i>	(August to October)

## Plants that are Rabbit Resistant

<i>Achillea</i>	<i>Epimedium</i>
<i>Aconitum</i>	<i>Filipendula hexapetala</i>
<i>Anaphalis margaritacea</i>	<i>Geranium</i>
<i>Artemisia</i>	<i>Hosta</i>
<i>Aster</i>	<i>Kniphofia</i>
<i>Astilbe</i>	<i>Myrrhis odorata</i>
<i>Baptisia australis</i>	<i>Narcissus</i>
<i>Bergenia</i>	<i>Papaver orientale</i>
<i>Campanula persicifolia</i>	<i>Salvia argentea</i>
<i>Actaea</i> (formerly <i>Cimicifuga</i> )	<i>Sedum spectabile</i>
<i>Colchicum autumnale</i>	<i>Stachys byzantina</i>
<i>Digitalis</i>	<i>Trollius</i>
<i>Doronicum</i> 'Miss Mason'	<i>Yucca</i>

# Perennials That Are Known For Fragrance

<i>Cimicifuga</i>	<i>Lilium 'Oriental'</i>
<i>Clematis montana</i> var. <i>rubens</i>	* <i>Monarda</i>
<i>Convallaria</i>	* <i>Nepeta</i>
<i>Dianthus</i>	* <i>Origanum</i>
* <i>Ferns</i>	<i>Paeonia</i>
* <i>Geranium</i>	* <i>Perovskia</i>
<i>Hemerocallis 'Hyperion'</i>	<i>Phlox</i>
<i>Hemerocallis 'Joan Senior'</i>	<i>Phlox divaricata</i>
<i>Hosta plantaginea</i>	* <i>Rosmarinus officinalis</i>
<i>Hosta 'Royal Standard'</i>	* <i>Salvia</i>
<i>Hosta 'So Sweet'</i>	* <i>Santolina</i>
<i>Iris germanica</i>	* <i>Thymus</i>
* <i>Lamium</i>	<i>Viola</i>
* <i>Lavandula</i>	
*Fragrant Foliage	

# Plants for Ground Covers

<i>Ajuga reptans</i>	<i>Geranium x cantabrigiense</i>
<i>Alchemilla mollis</i>	<i>Heuchera americana</i>
<i>Arctostaphylos uva-ursi</i>	<i>Juniperus horizontalis</i>
<i>Asarum spp.</i>	<i>Lamium maculatum</i>
<i>Aster ericoides 'Snow Flurry'</i>	<i>Liriope spicata</i>
<i>Astilbe chinensis</i>	<i>Mazus reptans</i>
<i>Bergenia cordifolia</i>	<i>Microbiota decussata</i>
<i>Carex flaccosperma</i>	<i>Phlox stolonifera</i>
<i>Carex morrowii 'Ice Dance'</i>	<i>Phlox subulata</i>
<i>Catharanthus roseus</i>	<i>Rubus calycinoides</i>
<i>Ceratostigma plumbaginoides</i>	<i>Sarcococca hookeriana</i> var. <i>humilis</i>
<i>Chrysogonum virginianum</i>	<i>Sedum acre</i>
<i>Convallaria majalis</i>	<i>Sedum spurium 'John Creech'</i>
<i>Cotoneaster dammeri</i>	<i>Stachys byzantina</i>
<i>Cotoneaster salicifolius</i>	<i>Teucrium chamaedrys</i>
<i>Epimedium x perralchicum</i>	<i>Thymus spp.</i>
<i>Epimedium x versicolor</i>	<i>Tiarella cordifolia</i>
<i>Festuca ovina</i> var. <i>glaucha</i>	<i>Veronica spp.</i>
<i>Galium odoratum</i>	<i>Waldsteinia ternata</i>
<i>Gaultheria procumbens</i>	

# Summer Flowering Woody Plants

## Trees

<i>Clethra barbinervis</i>	July
<i>Franklinia alatamaha</i>	July-September
<i>Heptacodium miconioides</i>	August
<i>Koelreuteria paniculata</i>	July
<i>Lagerstroemia</i>	July-September
<i>Magnolia virginiana</i>	June-July
<i>Oxydendrum arboreum</i>	July-September
<i>Styphnolobium japonicum</i>	July- August
<i>Stewartia ovata</i>	July-August
<i>Stewartia pseudocamellia</i>	July

## Shrubs

<i>Abelia 'Edward Goucher'</i>	July-fall
<i>Abelia x grandiflora</i>	July-fall
<i>Aesculus parviflora</i>	July
<i>Callicarpa dichotoma</i>	July
<i>Calluna vulgaris</i>	July
<i>Caryopteris x clandonensis</i>	September
<i>Clethra acuminata</i>	July
<i>Clethra alnifolia</i>	August
<i>Cornus kousa</i>	June
<i>Cornus sericea</i>	June-July
<i>Cotinus coggygria</i>	June-July
<i>Daphne x transatlantica 'Jim's Pride'</i>	May-June then sporadically
<i>Hibiscus syriacus</i>	August-September
<i>Hydrangea arborescens</i>	June-September depending on cultivar
<i>Hydrangea macrophylla</i>	July-September
<i>Hydrangea paniculata</i>	July-September
<i>Hydrangea quercifolia</i>	June-July
<i>Hypericum calycinum</i>	June-September
<i>Hypericum frondosum</i>	June-July
<i>Potentilla fruticosa</i>	June-frost
<i>Rhododendron arborescens</i>	July
<i>Rhododendron prunifolium</i>	July-August
<i>Rhododendron viscosum</i>	July
<i>Spiraea x bumalda</i>	June-August
<i>Viburnum plicatum</i> var. <i>tomentosum 'Watanabei'</i>	June-frost

## Vines

<i>Clematis</i> various	June-September
<i>Hydrangea anomala</i> subsp. <i>petiolaris</i>	Late June
<i>Lonicera x heckrottii</i>	June-frost
<i>Schizophragma hydrangeoides</i>	June-July

# pH Requirements for Common Ornamental Plants

	pH range		
	Acid 4.5<pH<6	Slightly acid 6<pH<7	Slightly alkaline 7<pH<8
<i>Abelia x grandiflora</i>	XXXX	XXXX	
<i>Abies balsamea</i>	XXXX	XXXX	
<i>Abies fraseri</i>	XXXX	XXXX	
<i>Acer buergerianum</i>	XXXX	XXXX	
<i>Acer campestre</i>	XXXX	XXXX	XXXX
<i>Acer griseum</i>	XXXX	XXXX	XXXX
<i>Acer nikoense</i>	XXXX	XXXX	
<i>Acer pensylvanicum</i>	XXXX	XXXX	
<i>Acer rubrum</i>	XXXX	XXXX	
<i>Acer saccharum</i>	XXXX	XXXX	XXXX
<i>Acer triflorum</i>	XXXX	XXXX	
<i>Aesculus glabra</i>		XXXX	
<i>Aesculus hippocastanum</i>	XXXX	XXXX	XXXX
<i>Aesculus parviflora</i>	XXXX	XXXX	
<i>Amelanchier arborea</i>	XXXX	XXXX	
<i>Amelanchier canadensis</i>	XXXX	XXXX	
<i>Arctostaphylos uva-ursi</i>	XXXX	XXXX	
<i>Aronia</i> spp.	XXXX	XXXX	
<i>Betula lenta</i>	XXXX	XXXX	
<i>Betula nigra</i>	XXXX		
<i>Betula pendula</i>	XXXX	XXXX	
<i>Buxus sempervirens</i>		XXXX	XXXX
<i>Calluna vulgaris</i>	XXXX		
<i>Calycanthus floridus</i>	XXXX	XXXX	XXXX
<i>Carpinus caroliniana</i>	XXXX	XXXX	XXXX
<i>Carya ovata</i>		XXXX	
<i>Castanea</i> spp.	XXXX	XXXX	
<i>Cephalanthus occidentalis</i>	XXXX	XXXX	
<i>Celastrus scandens</i>	XXXX	XXXX	XXXX
<i>Cercis canadensis</i>	XXXX	XXXX	XXXX
<i>Chaenomeles japonica</i>		XXXX	XXXX
<i>Chamaecyparis obtusa</i>	XXXX	XXXX	
<i>Chionanthus virginicus</i>	XXXX	XXXX	
<i>Cladrastis kentukea</i>	XXXX	XXXX	XXXX
<i>Clematis</i> spp.	XXXX	XXXX	XXXX
<i>Clethra alnifolia</i>	XXXX	XXXX	
<i>Cornus alternifolia</i>	XXXX	XXXX	
<i>Cornus florida</i>	XXXX	XXXX	
<i>Cornus kousa</i>	XXXX	XXXX	
<i>Cornus mas</i>	XXXX	XXXX	XXXX
<i>Cornus sericea</i>	XXXX	XXXX	
<i>Corylopsis glabrescens</i>	XXXX		

	pH range		
	Acid 4.5<pH<6	Slightly acid 6<pH<7	Slightly alkaline 7<pH<8
<i>Corylus columna</i>	XXXX	XXXX	XXXX
<i>Corylus americana</i>	XXXX	XXXX	XXXX
<i>Cotinus coggygria</i>	XXXX	XXXX	XXXX
<i>Cotoneaster horizontalis</i>	XXXX	XXXX	
<i>Cotoneaster</i> spp.	XXXX	XXXX	XXXX
<i>Crataegus</i> spp.	XXXX	XXXX	XXXX
<i>Daphne</i> spp.	XXXX	XXXX	
<i>Deutzia</i> spp.	XXXX	XXXX	XXXX
<i>Enkianthus campanulatus</i>	XXXX	XXXX	
<i>Fagus grandifolia</i>	XXXX	XXXX	
<i>Forsythia</i> spp.	XXXX	XXXX	XXXX
<i>Franklinia alatamaha</i>	XXXX	XXXX	
<i>Fraxinus americana</i>	XXXX	XXXX	XXXX
<i>Ginkgo biloba</i>	XXXX	XXXX	XXXX
<i>Gleditsia triacanthos</i>	XXXX	XXXX	XXXX
<i>Gymnocladus dioicus</i>	XXXX	XXXX	XXXX
<i>Halesia carolina</i>	XXXX	XXXX	
<i>Hamamelis virginiana</i>	XXXX	XXXX	
<i>Hibiscus syriacus</i>	XXXX	XXXX	XXXX
<i>Hydrangea anomala</i> subsp. <i>petiolaris</i>		XXXX	XXXX
<i>Hydrangea paniculata</i>	XXXX	XXXX	XXXX
<i>Hypericum prolificum</i>		XXXX	XXXX
<i>Ilex aquifolium</i>	XXXX		
<i>Ilex crenata</i>	XXXX	XXXX	
<i>Ilex glabra</i>	XXXX		
<i>Ilex x meserveae</i>		XXXX	XXXX
<i>Ilex opaca</i>	XXXX		
<i>Ilex verticillata</i>	XXXX		
<i>Juniperus horizontalis</i>	XXXX	XXXX	XXXX
<i>Kalmia latifolia</i>	XXXX	XXXX	
<i>Koelreuteria paniculata</i>	XXXX	XXXX	XXXX
<i>Kolkwitzia amabilis</i>	XXXX	XXXX	XXXX
<i>Laburnum x watereri</i>		XXXX	XXXX
<i>Larix decidua</i>	XXXX	XXXX	
<i>Leucothoe fontanesiana</i>	XXXX	XXXX	
<i>Liquidambar styraciflua</i>	XXXX	XXXX	
<i>Lindera benzoin</i>	XXXX	XXXX	
<i>Liriodendron tulipifera</i>	XXXX	XXXX	XXXX
<i>Magnolia grandiflora</i>	XXXX	XXXX	
<i>Magnolia soulangiana</i>	XXXX	XXXX	
<i>Magnolia stellata</i>	XXXX	XXXX	
<i>Magnolia virginiana</i>	XXXX	XXXX	
<i>Mahonia aquifolium</i>	XXXX	XXXX	
<i>Malus floribunda</i>	XXXX	XXXX	XXXX

	pH range		
	Acid 4.5<pH<6	Slightly acid 6<pH<7	Slightly alkaline 7<pH<8
<i>Malus prunifolia</i>	XXXX	XXXX	XXXX
<i>Metasequoia glyptostroboides</i>	XXXX		XXXX
<i>Morella caroliniensis</i>	XXXX	XXXX	
<i>Nyssa sylvatica</i>	XXXX	XXXX	
<i>Ostrya virginiana</i>	XXXX	XXXX	
<i>Oxydendrum arboreum</i>	XXXX	XXXX	
<i>Paxistima canbyi</i>	XXXX	XXXX	XXXX
<i>Philadelphus coronarius</i>	XXXX	XXXX	XXXX
<i>Photinia villosa</i>	XXXX		
<i>Picea abies</i>	XXXX	XXXX	
<i>Picea pungens</i>	XXXX	XXXX	
<i>Picea glauca</i>	XXXX	XXXX	
<i>Picea omorika</i>	XXXX	XXXX	XXXX
<i>Pieris japonica</i>	XXXX	XXXX	
<i>Pinus aristata</i>	XXXX	XXXX	XXXX
<i>Pinus cembra</i>		XXXX	
<i>Pinus densiflora</i>		XXXX	
<i>Pinus mugo</i>	XXXX	XXXX	XXXX
<i>Pinus resinosa</i>	XXXX	XXXX	
<i>Pinus strobus</i>	XXXX	XXXX	
<i>Pinus sylvestris</i>	XXXX	XXXX	
<i>Pinus wallichiana</i>	XXXX		
<i>Platanus occidentalis</i>	XXXX	XXXX	XXXX
<i>Prunus cerasifera</i>	XXXX	XXXX	XXXX
<i>Prunus virginiana</i>	XXXX	XXXX	
<i>Pseudotsuga menziesii</i>	XXXX	XXXX	
<i>Pyracantha coccinea</i>	XXXX	XXXX	XXXX
<i>Quercus alba</i>	XXXX	XXXX	
<i>Quercus bicolor</i>	XXXX	XXXX	
<i>Quercus imbricaria</i>	XXXX	XXXX	
<i>Quercus palustris</i>	XXXX		
<i>Quercus phellos</i>	XXXX		
<i>Quercus robur</i>	XXXX	XXXX	XXXX
<i>Quercus rubra</i>	XXXX	XXXX	
<i>Quercus velutina</i>	XXXX	XXXX	
<i>Rhododendron carolinianum</i>	XXXX		
<i>Rhododendron catawbiense</i>	XXXX		
<i>Rhododendron mucronulatum</i>	XXXX		
<i>Rhododendron obtusum</i>	XXXX		
<i>Rhus aromatica</i>	XXXX	XXXX	XXXX
<i>Rosa spp.</i>	XXXX	XXXX	
<i>Rosa wichuraiana</i>	XXXX	XXXX	
<i>Salix babylonica</i>	XXXX	XXXX	XXXX
<i>Sassafras albidum</i>	XXXX	XXXX	
<i>Sciadopitys verticillata</i>	XXXX	XXXX	

	pH range		
	Acid 4.5<pH<6	Slightly acid 6<pH<7	Slightly alkaline 7<pH<8
<i>Sorbus americana</i>	XXXX	XXXX	
<i>Sorbus aucuparia</i>	XXXX	XXXX	XXXX
<i>Spiraea x vanhouttei</i>		XXXX	XXXX
<i>Stewartia sinensis</i>	XXXX	XXXX	
<i>Symporicarpos albus</i>	XXXX	XXXX	XXXX
<i>Syringa x persica</i>		XXXX	XXXX
<i>Syringa vulgaris</i>		XXXX	XXXX
<i>Taxus baccata</i>	XXXX	XXXX	XXXX
<i>Taxus cuspidata</i>		XXXX	XXXX
<i>Taxus x media</i>	XXXX	XXXX	XXXX
<i>Thuja occidentalis</i>		XXXX	XXXX
<i>Tilia americana</i>	XXXX	XXXX	XXXX
<i>Tilia cordata</i>	XXXX	XXXX	XXXX
<i>Tilia tomentosa</i>	XXXX	XXXX	XXXX
<i>Tsuga canadensis</i>	XXXX	XXXX	
<i>Tsuga caroliniana</i>	XXXX	XXXX	
<i>Ulmus parvifolia</i>	XXXX	XXXX	XXXX
<i>Vaccinium corymbosum</i>	XXXX		
<i>Viburnum acerifolium</i>	XXXX	XXXX	
<i>Viburnum x burkwoodii</i>	XXXX	XXXX	XXXX
<i>Viburnum carlesii</i>	XXXX	XXXX	
<i>Viburnum lantana</i>	XXXX	XXXX	XXXX
<i>Viburnum plicatum var. tomentosum</i>	XXXX	XXXX	XXXX
<i>Vitex agnus-castus</i>		XXXX	
<i>Weigela florida</i>	XXXX	XXXX	XXXX
<i>Zelkova serrata</i>	XXXX	XXXX	XXXX

# Lime and Adjusting pH

Soil pH, or soil reaction, is a measure of the acidity or alkalinity of the soil. On a scale of 0 to 14, a pH of 7.0 is neutral, below 7 the pH becomes more acidic while above 7 soil becomes more alkaline. Generally, ornamental plants grow best between pH 5.5 and 7.5, with some preferring the lower end of the range and others the higher end. Plants grow better when planted in a soil at the optimum pH for the plant species. The soil pH influences the availability of the various mineral elements needed for plant growth. Maximum availability of most plant nutrients occurs at approximately 6.5. Soil pH is regulated by the amount of bases (calcium, magnesium, and potassium) relative to the hydrogen ion concentration present in the soil. In areas like Long Island, the soil pH is normally low (acidic) due to the parent material from which the soil developed. Applying lime increases the soil pH. Overtime, calcium and magnesium levels decrease due to plant uptake and leaching from precipitation and irrigation causing the pH to become more acidic. Always take a composite soil sample and have the pH tested.

## Lime Products

Agricultural limestone is a term used for types of lime used in agriculture including calcite, or dolomite, calcium oxide, and calcium hydroxide.

- **Calcitic limestone:** mostly calcium carbonate
- **Dolomitic limestone:** has a higher concentration of magnesium than calcitic limestone. Dolomitic limestone will vary in the concentration of magnesium.
- **Calcium oxide:** also called quicklime or burned lime. Produced by heating limestone.
- **Calcium hydroxide:** also called hydrated or slaked lime. Produced by adding water to calcium oxide.
- **Marl:** lime harvested from fresh-water deposits created from alkaline water runoff from nearby land.
- **Basic slag:** material left over from iron smelting or other industries. Can contain trace elements, sometimes boron.

The amount of lime required to effect a change in pH is determined by the texture of the soil, type and purity of lime used, and particle size. The Calcium Carbonate Equivalent (CCE) is a measure of the capability that the liming material can neutralize acid compared to pure calcium carbonate. Even mined calcite will not have a CCE of 100%. Pure dolomitic limestone has a CCE of 119% or has 19% more neutralizing power than calcium carbonate. Calcium hydroxide has a CCE of 136%.

Material	Chemical formula	% CCE
Pure calcitic limestone	$\text{CaCO}_3$	100
Dolomitic limestone	$\text{MgCO}_3$	119
Calcium oxide, quicklime, burned lime	$\text{CaO}$	179
Calcium hydroxide; hydrated or slaked lime	$\text{Ca(OH)}_2$	136
Marl	$\text{CaCO}_3$	70-90
Basic slag	$\text{CaSiO}_3$	60-90

CCE = Calcium Carbonate Equivalent

### Common Conversion Factors:

$$\text{CaO} \times 1.79 = \text{CaCO}_3$$

$$\text{MgO} \times 2.50 = \text{CaCO}_3$$

$$\text{MgCO}_3 \times 1.19 = \text{CaCO}_3$$

$$\text{Ca(OH)}_2 \times 1.36 = \text{CaCO}_3$$

$$\text{CaCO}_3 \times 0.56 = \text{CaO}$$

$$\text{CaCO}_3 \times 0.4 = \text{MgO}$$

$$\text{CaCO}_3 \times 0.84 = \text{MgCO}_3$$

$$\text{CaCO}_3 \times 0.73 = \text{Ca(OH)}_2$$

$$\text{MgO} \times 0.602 = \text{Mg}$$

$$\text{MgCO}_3 \times 0.288 = \text{Mg}$$

$$\text{Mg} \times 1.66 = \text{MgO}$$

$$\text{Mg} \times 3.47 = \text{MgCO}_3$$

$$\text{CaCO}_3 \times 0.400 = \text{Ca}$$

$$\text{CaO} \times 0.714 = \text{Ca}$$

$$\text{Ca} \times 2.5 = \text{CaCO}_3$$

$$\text{Ca} \times 1.4 = \text{CaO}$$

Particle size is measured by passing the lime through sieves of various sizes. The fineness of the material affects how rapidly the lime will react in the soil. Finer mesh sieves have a higher % efficiency rating, therefore the greater the amount of lime that passes through finer mesh sieves, the quicker the reaction time. The Effective Neutralizing Value (ENV) of the lime material is calculated based on both the CCE and the particle sizes. The ENV can be found on the package of lime.

Soil texture also affects the amount of lime required to change the pH. Finer soils or soils higher in clay require more lime to effect a change in pH than coarser soils.

## Limestone Recommendations to Raise the Soil pH to 6.2 (lbs of limestone/1,000ft<sup>2</sup>)

- The amount of limestone needed to raise the soil pH to 6.2, is based upon initial soil pH and soil texture.
- Use the 2.5" depth rate when you are performing maintenance applications to established lawns and landscapes.
- Use the 8" depth rate when you are fully incorporating the lime, such as during initial lawn or bed preparation.

	Soil Texture							
	Loamy Sand		Sandy Loam		Loam		Silt Loam	
Initial Soil pH	2.5"	8"	2.5"	8"	2.5"	8"	2.5"	8"
4.5	31	92	47	138	78	230	109	321
4.6-4.7	31	92	39	115	70	207	101	298
4.8-4.9	23	69	39	115	70	207	101	298
5.0-5.1	23	69	31	92	62	184	94	275
5.2-5.3	16	46	31	92	55	161	86	253
5.4-5.5	12	37	23	69	39	115	62	184
5.6-5.7	8	23	16	46	31	92	47	138
5.8-5.9	8	23	12	37	16	46	31	92
6.0	5	14	8	23	12	37	16	46

- To calculate limestone rate in tons per acre, multiple the lbs./1,000ft<sup>2</sup> rate by 43.56, and then divide by 2000.

## Adjusting Aglime Material Required:

$$\frac{\text{Limestone recommendation}}{\text{ENV of the aglime being used}} \times 100$$

Example:

Soil test result recommends 4 tons of limestone per acre  
ENV (from package of lime) = 80%

$$\frac{4 \text{ tons}}{80} \times 100 = 5 \text{ tons of lime product is required}$$

Soils heavily limed may be too alkaline for certain plants such as those in the family Ericaceae including rhododendron, azalea, Kalmia, Leucothoe, Pieris, etc. Soil pH can be decreased through the addition of several materials. Caution should be used with aluminum sulfate since the available aluminum in the soil will increase and could be toxic to sensitive plants.

## Materials and Rate to Decrease the Soil pH by 1 Unit below pH 6.0.

Material	Rate (lb/100 ft <sup>2</sup> )			
	Sandy Loam	Loam	Clay Loam	or Peat
Aluminum Sulfate	2.5	5	7	
Iron Sulfate	2.5	5	7	
Sulfur	0.5	1	1.5	

Cornell Cooperative Extension - Suffolk County has a lab which tests soil for pH and soluble salts at its location at 423 Griffing Avenue, Riverhead, NY. Samples can also be dropped off at our location at the Bayard Cutting Arboretum, Montauk Highway, Oakdale, NY and staff members will forward the samples to the lab in Riverhead. The cost for testing per sample is \$5. For more information contact Cornell Cooperative Extension.

## Amount of Sod Required to Cover an Area

1 Pallet = 600 ft.<sup>2</sup>

1 piece = 10 ft.<sup>2</sup>

## Volume of Mulch Needed to Cover an Area 3" Deep

Cubic yards	will cover square feet
1	108
2	216
3	324
4	432
5	540
10	1080
20	2160
30	3240
40	4320
50	5400
100	10800

# Useful Formulas for Calibrating a Pesticide Sprayer

GPM – Gallons Per Minute

GPA – Gallons Per Acre

MPH – Miles Per Hour

W - Nozzle spacing (in inches) for broadcast spraying

W - Spray width (in inches) for single nozzle, band spraying or boomless spraying.

$$\text{Speed (MPH)} = \frac{\text{Distance (ft)} \times 60}{\text{Time (sec)} \times 88}$$

$$\text{GPM (Per Nozzle)} = \frac{\text{GPA} \times \text{MPH} \times \text{W}}{5940}$$

$$\text{GPA} = \frac{5940 \times \text{GPM (Per Nozzle)}}{\text{MPH} \times \text{W}}$$

$$\text{GPM (Per Nozzle)} = \frac{\text{GAL/1000FT}^2 \times \text{MPH} \times \text{W}}{136}$$

$$\text{GAL/1000FT}^2 = \frac{136 \times \text{GPM (Per Nozzle)}}{\text{mph} \times \text{W}}$$

## Amount of Growing Media for Containers

Although nursery container size and shape will vary, use the following as a general guideline.

- 1 bag (2.8cf) of media will fill:
  - 21 - 1 gal containers
  - 12 - 2 gal containers
  - 9 - 3 gal containers

- 1 bale (3.8cf) of media will fill:
  - 49 - 1 gal containers
  - 28 - 2 gal containers
  - 20 - 3 gal containers

# Irrigation Abbreviations and Conversion Factors

## Abbreviations for Common Units

ft hd	feet of head
ft/min	feet per minute
ft/sec	feet per second
gph	gallons per hour
gpm	gallons per minute
hr	hour
in	inches
in/hr	inches/hour
l/sec	liters/sec
m	meters
mm	millimeters
m hd	meters of head
m/sec	meters per second
min/wk	minutes per week
psi	pounds per square inch

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
psi	6.89476	kilopascals
psi	0.068948	bars
bars	100	kilopascals
psi	2.31	feet of head

## Velocity

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
ft/sec	0.3048	meter/second

## Power

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
Kilowatts	1.3410	horsepower

## Flow and Water Volume

<i>Multiply</i>	<i>by</i>	<i>to obtain</i>
U.S. Gallons per minute (gpm)	0.1337	Cubic feet per minute
Cubic feet per minute	7.48	U.S. gallons per minute
Cubic feet per second	448.8	U.S. gallons per minute
U.S. gallons per minute	0.00223	Cubic feet per second
Acre inches per hour	453	U.S. gallons per minute
British Imperial gallons	1.201	U.S. gallons
U.S. gallons	0.833	British Imperial gallons
Acre feet	325,850	U.S. gallons
Acre inches	27154	U.S. gallons

## Velocity in feet per second

$(0.408 \times \text{GPM}) / \text{Inside diameter of pipe in inches, squared}$

$Q = AV$  (quantity = area x velocity) ("the basic equation of water flow") (example: quantity in feet per second = square feet of area x feet per second velocity)

One inch of water depth = 0.62 gallons per square foot of area

## Water Pressure

<i>Multiply</i>	<i>by</i>	<i>to obtain</i>
ft hd	0.433	psi
psi	2.31	ft hd
m hd	3.28	ft hd
ft hd	0.3049	m hd

## Precipitation Rates

### Equilateral Triangular Spacing with a 360° Arc

*Customary:*

$$\text{In/hr} = \frac{\text{GPM} \times 96.25}{(\text{Head Spacing})^2 \times 0.866}$$

*Metric:*

$$\text{mm/hr} = \frac{\text{meter}^3 \times 1000}{\text{meter}^2 \times 0.866}$$

### Square/Rectangular Spacing

$$\text{In/hr} = \frac{\text{GPM} \times 96.25}{\text{Head Spacing} \times \text{Row Spacing}}$$

$$\text{mm/hr} = \frac{\text{m}^3 \times 1000}{\text{Head Spacing} \times \text{Row Spacing}}$$

### Square/Rectangular Spacing for Specific Arc

$$\text{In/hr} = \frac{34650 \times \text{GPM}}{\text{Degrees of Arc} \times \text{Head Spacing} \times \text{Row Spacing}}$$

$$\text{mm/hr} = \frac{\text{m}^3/\text{hr} \times 1000}{\text{Degrees of Arc} \times \text{Head Spacing} \times \text{Row Spacing}}$$

## Horsepower (expressed as a decimal)

$\text{GPM} \times \text{ft of head}$

$3960 \times \text{pump efficiency}$

## Run Time

$$\text{Min/wk} = \frac{\text{total weekly requirement (in/wk)} \times 60 \text{ (min/hr)}}{\text{precipitation rate (in/hr)}}$$

$$\text{Min/wk} = \frac{\text{total weekly requirement (mm/wk)} \times 60 \text{ (min/hr)}}{\text{precipitation rate (mm/hr)}}$$

## Pipe Velocity

$$\text{ft/sec} = \frac{0.4085 \times \text{flow (gpm)}}{(\text{inside pipe diameter in inches})^2}$$

$$\text{m/sec} = \frac{1273.24 \times \text{flow (l/sec)}}{(\text{inside pipe diameter in mm})^2}$$

## Slope

$$\% \text{ Slope} = \left( \frac{\text{rise (vertical length)}}{\text{run (horizontal length)}} \right) \times 100$$

# Recent NY State Laws Affecting the Horticulture Industry

## The NY Birds and Bees Protection Act

Effective December 31, 2024

The NY Birds and Bees Protection Act, enacted in 2023, is phasing out many uses of neonicotinoid insecticides including some seed treatments and uses on outdoor ornamental plants and turf. Concerning ornamental plants, as of 12/31/2024 the law limits outdoor ornamental uses (except agricultural production) of dinotefuran-containing insecticides to invasive species control on woody plants or under a written order from the DEC to address an environmental emergency. (Dinotefuran products include Safari, Transtect, Dinocide, Zylam, all allowed in NY only for certain uses under 24(c) labels.) Starting 12/31/2026, use of imidacloprid-containing insecticides (Merit, Mallet, Bandit, Zenith, Criterion, Xytect, GrubEx Pro, ImidaStar, Ima-Jet, etc.) on outdoor ornamental plants and turf will be limited to controlling invasive species on woody plants or under a DEC written order. (Note: the law also includes the active ingredients thiamethoxam and clothianidin which have no outdoor ornamental landscape or turf uses in NY State.) As the restrictions take effect, applicators using neonicotinoids under a DEC order or for treating invasive species on woody plants must take a DEC-approved neonicotinoid course annually and maintain a record of this course for three years. (Agricultural producers using neonicotinoids to produce ornamental plants or sod do not have to take the training.) The approved course is at <https://tinyurl.com/NYNeonicCourse>.

The full text of the law follows and is also posted at <https://tinyurl.com/NYBBAct>:

13. a. It shall be unlawful for any person to apply or treat outdoor ornamental plants and turf, except for the production of agricultural commodities or structural commercial applications within one foot of a building foundation perimeter to manage structural pests provided that the application is not conducted on any blooming plant, with a pesticide containing
  - (1) the active ingredients imidacloprid, thiamethoxam or acetamiprid on or after December thirty-first, two thousand twenty-six;
  - (2) the active ingredients clothianidin or dinotefuran effective December thirty-first, two thousand twenty-four.
- b. (1) The provisions of paragraph a. of this subdivision shall not apply where the department, by written order, determines that:
  - (i) a valid environmental emergency exists;

(ii) the pesticide would be effective in addressing the environmental emergency; and

(iii) no other, less harmful pesticide or pest management practice would be effective in addressing the environmental emergency.

(2) Any such order shall include the basis for the department's determination and specify the approved time period, geographic scope, and purpose of the permitted use of such pesticide. An order issued pursuant to this section shall be valid for a period not to exceed one year.

c. The provisions of this subdivision shall not apply to pesticide applications by, or under the supervision of, a certified applicator for treatment against invasive species affecting woody plants.

d. For the purposes of this subdivision "environmental emergency" means: an occurrence of any pest which presents a significant risk of harm or injury to the environment, or significant harm, injury, or loss to agricultural crops, including, but not limited to, any exotic or foreign pest.

e. Applicators using a pesticide containing the active ingredients imidacloprid, thiamethoxam, acetamiprid, clothianidin, or dinotefuran pursuant to paragraph b or c of this subdivision must take a department approved neonicotinoid course annually and maintain a record of this course for three years.

## **Spotted Lanternfly Protective Zone Order & Quarantine**

**Effective October 2018**

Spotted lanternfly (*Lycorma delicatula*), a planthopper first detected in Pennsylvania in 2014, was detected in Suffolk County in October 2018. In response to detections in Suffolk County and other earlier detections in New York, a Quarantine and Protective Zone Order was implemented. The purpose of the Quarantine is to help slow the spread of the pest from infested areas from establishing within NYS. The Quarantine requires certificates of inspection issued from the impacted states on the following regulated articles entering NYS:

- Any living life stage of the SLF.
- Brush, debris, bark, or yard waste.
- Landscaping, remodeling, or construction waste.
- Logs, stumps, or any tree parts.
- Firewood of any species.

- All plants and plant parts, including but not limited to nursery stock, green lumber, fruit and produce and other material living, dead, cut, fallen (including stumps), roots, branches, mulch, and composted and uncomposted chips.
- And many other items including trucks, landscaping equipment, outdoor items, etc.

For a complete list of quarantine items, visit the NYS Department of Agriculture and Markets: <https://tinyurl.com/2z3srcd5>

The Spotted Lanternfly Protective Zone Order further assists in the prevention of this pest by conducting surveys, and timely monitoring of the pest in affected areas. Protective Zones are established in the following counties: Bronx, Broome, Chemung, Chenango, Delaware, Dutchess, Greene, Kings, Nassau, Orange, Otsego, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Tioga, Ulster and Westchester.

To learn more about the pest, visit the NYSDEC Spotted Lanternfly information page at <https://agriculture.ny.gov/spottedlanternfly>

## **Prohibited and Regulated Invasive Species Effective March 2015**

The purpose of the regulation is to manage invasive species that have been classified as either "regulated" or "prohibited." The list covers several different categories of invasive organisms, however this synopsis pertains to invasive terrestrial plants only. To view a complete list of prohibited and regulated plants go to page 37.

Plants on the Prohibited List will not be allowed for intent to sell, import, purchase, transport, introduction, or propagation. Regulated plants will be allowed for possession, sale, purchase, propagation and transport however, introduction into a "free-living state" either purposely or accidentally will be illegal. Free-living states are defined as natural areas, public lands, lands that are continually or intermittently connected to public lands, and various public waterways, including water-using facilities with outflow to public waters. Regulated plants that are offered for sale or sold must be affixed with official labeling noting its potential environmental impacts. Refer to Part 575.6 in the Express Terms (<https://dec.ny.gov/regulatory/regulations>) for details on labeling specifications, and other details pertaining to the regulation.

## Phosphorus Fertilizer Restrictions Effective 2012

A phosphorus fertilizer is defined as a fertilizer with a phosphate content of 0.67% or greater, not including compost. This law prohibits the use of phosphorus fertilizer on non-agricultural turf in New York State EXCEPT when:

- a soil test demonstrates that additional P is needed for growth OR
- when applied to newly established turf during the first growing season.

Even if a soil test shows that additional P is needed, application of P to non-agricultural turf is PROHIBITED:

- between December 1st and April 1st;\*
- within 3 feet of surface water where there is at least a 10 foot buffer of continuous natural vegetation and a spreader guard, deflector shield, or drop spreader is used to apply the fertilizer, EXCEPT when applied to newly established turf during the first growing season.\*
- within 20 feet of surface water without a 10 foot buffer and a spreader guard, deflector shield, or drop spreader is not used, EXCEPT when applied to newly established turf during the first growing season.\*

Application of fertilizer to any impervious surface, including parking lots, roadways, and sidewalks, is also prohibited. If such application does occur, the fertilizer must be immediately contained and either legally applied or placed in an appropriate container.

Retailers who sell any fertilizer with a phosphate content of 0.67% or greater, must:

- Display P-containing fertilizer separately from non-P-containing fertilizer; and
- Display a sign at least 8 ½ “ X 11” in size near the P-containing fertilizer that says,

“Phosphorus runoff poses a threat to water quality. Therefore, under New York law, phosphorus-containing fertilizer may only be applied to lawn or non-agricultural turf when: (1) A soil test indicates that additional phosphorus is needed for growth of that lawn or non-agricultural turf; or (2) The fertilizer is used for newly established lawn or non-agricultural turf during the first growing season.”

\*Please note that Long Island county laws relating to timing of fertilizer application and distance to surface waters are more stringent and supersede state laws. See below.

## **Pesticide Use Restrictions at Day Care Centers and Schools**

**Effective 2011**

No day care center or public or private school in New York State shall apply pesticides to playgrounds, turf, or athletic and playing fields EXCEPT:

- anti-microbial pesticides;
- aerosol pesticides with a directed spray in containers of 18 fluid ounces or less, when used to protect individuals from an imminent threat from stinging and biting insects;
- non-volatile insect or rodent bait in tamper-resistant containers;
- exempt pesticides as classified by the US EPA under 40 CFR Part 152.25;
- boric acid;
- disodium octaborate tetrahydrate;
- horticultural soaps and oils that do not contain synthetic pesticides or synergists; and
- for emergency pesticide applications as determined by the county health department.

If an emergency application is made, parents and staff must be notified. All other laws pertaining to pesticide lawn care applications still apply.

## **Recent County Laws Affecting the Horticulture Industry**

### **Suffolk County Turf Fertilizer Reduction Law**

**Effective 2009**

#### **Application Restrictions:**

- No fertilizer on county-owned property besides: 1. Golf courses, which must use only the minimum amount of slow-release and organic fertilizers, not to exceed 3lbs of N/1,000 sq ft. 2. Suffolk County Farm, which must establish strategies to meet the goal of nitrogen reduction. 3. Athletic fields, which must develop and implement an annual plan of BMP's. 4. Newly seeded or planted landscapes and newly seeded or newly sodded areas.
- No fertilizer to turf on non-county-owned property Nov. 1st-April 1st, besides sod farms.
- No fertilizer on county-owned property or to turf on non-county-owned property, within 20 ft. of regulated surface water, unless there is at least a 10 ft. vegetation buffer.

"Fertilizer" is defined as any organic or inorganic source of

essential plant nutrients. This definition does NOT include lime, mycorrhizae, or mulch. Compost, manure and compost teas WITHOUT a fertilizer analysis label are also exempt from the application restrictions.

Landscapers in Suffolk County must take a one-time continuing education class on nitrate pollution in order to renew their Consumer Affairs license. Contact 631-853-5957 to find out when the next class is offered.

In addition, the law also requires that retail establishments post signs and informational brochures to advise consumers about the proper use and application of fertilizers and nitrogen pollution. The signs and brochures must be displayed within 10 feet of every fertilizer display area in the store.

## **Nassau County Turf Fertilizer Reduction Law Effective 2009**

### **Application Restrictions:**

- No fertilizer to turf on any property (both county and non-county owned property) Nov. 15th-April 1st, except property that is being used to produce an agricultural commodity.

\*\*Note that the beginning of the fertilizer ban period in Nassau County is Nov. 15th, while the beginning of the ban period in Suffolk County is Nov. 1st. "Fertilizer" is defined the same way as the Suffolk County Law defines it.

## **Amendment to Suffolk County Invasive Plant Species Law (Do Not Sell List)**

**Effective November 2015**

In November 2015, the Suffolk County legislature adopted local law 30 to amend the Do Not Sell List which regulates non-native invasive plant species. This amendment allows for the sale of cultivars classified as exempt and/or conditionally exempt status as approved by the NYS Cultivar Committee. These cultivars have been scientifically evaluated and found to be either sterile or unlikely to spread to natural areas. To review the exempt cultivar list, refer to page 52.

# Fertilizer Calculations

Nitrogen (N), phosphorus (P), and potassium (K) in fertilizers are expressed as elemental nitrogen (N) and the oxide forms of phosphorus (P<sub>2</sub>O<sub>5</sub>) and potassium (K<sub>2</sub>O). When reading soil test reports and recommendations it is important to determine whether the oxide or elemental form is being expressed. If the elemental form is being used, convert to the oxide form before calculating the amount of fertilizer required. No conversion is required for nitrogen since it is always expressed in the elemental form.

## Conversions for P and K:

$$P \times 2.29 = P_2O_5$$

$$P_2O_5 \times 0.44 = P$$

$$K \times 1.2 = K_2O$$

$$K_2O \times 0.83 = K$$

### Example 1:

- Recommendation is to apply 100 lbs of K per acre.
- First convert to the oxide form:  $100 \times 1.2 = 120$  lbs of K<sub>2</sub>O
- If you are using a 0-0-60 fertilizer, apply  $120 \text{ lbs} / 0.60 = 200$  lbs
- 200 lbs per acre of 0-0-60 will apply 100 lbs of K per acre

### Example 2:

- Recommendation is to apply 100 lbs of N per acre
- No conversion to an oxide form is necessary for N
- If you are using a 20-8-8 fertilizer, apply  $100 / 0.20 = 500$  lbs
- 500 lbs per acre of 20-8-8 will apply 100 lbs of N per acre

# Essential Plant Nutrients

Certain nutrients are essential for plant growth. These elements may originate from the atmosphere or the soil and roots take up most of them. Currently, seventeen essential nutrients have been identified. Carbon, hydrogen, and oxygen are provided by carbon dioxide and water while the other 14 are taken up from the soil. Macronutrients are required in higher concentrations than micronutrients by plants although concentration does not determine essentiality.

## Classification of macro and micronutrients and chemical abbreviation

### ELEMENT

Macronutrients	Abbreviation
Nitrogen	N
Potassium	K
Calcium	Ca
Phosphorus	P
Magnesium	Mg
Sulfur	S

Micronutrients	
Iron	Fe
Chlorine	Cl
Manganese	Mn
Zinc	Zn
Boron	B
Copper	Cu
Molybdenum	Mo
Nickel	Ni

### Nutrient Mobility in Plants

Nutrients move through the plant by way of the vascular system – xylem, where movement is up and phloem where movement can travel in two directions (bi-directional translocation). The degree to which a nutrient is mobile, or capable of being retranslocated in the phloem from one part of the plant to another has an effect on the location where deficiency symptoms appear. Highly mobile elements (see below) can be translocated from older leaves to younger leaves to satisfy the higher demand for the nutrient in the growing parts if the element becomes limiting in the soil. This causes the deficiency symptoms to first appear on older leaves. Elements with intermediate or low mobility cannot be remobilized and moved from older tissue to actively growing areas thus deficiency symptoms appear on younger plant parts.

## MOBILITY OF NUTRIENT ELEMENTS IN PLANTS

High Mobility	Intermediate or Low Mobility
Nitrogen	Calcium
Phosphorous	Iron
Potassium	Manganese
Magnesium	Zinc
Sulfur	Copper
Chlorine	Boron
	Molybdenum

### Correcting a Nutrient Problem

The growth of a plant is determined by the most limiting factor. These growth factors include nutrients, light, water, temperature,  $\text{CO}_2$ , and  $\text{O}_2$ . The 'law of the minimum', as it is called, can be looked at in the context of nutrient management. The level of nutrients in the plant tissue partly determines plant growth. As the nutrient level increases from a deficient level, plant growth increases. At some point, plant growth levels off even if nutrient levels continue to increase. This area where above adequate nutrient levels exist is also called a 'luxury zone'. Increasing the nutrient supply does not increase plant growth and eventually can negatively impact growth when elements are in excessive amounts. In addition, excessive amounts of fertilizer, such as nitrogen, can increase certain insect and disease problems. Nutrient management should be approached with this in mind. Once maximum growth is realized, additional fertilizer only wastes money, can increase plant problems, and causes environmental pollution.

Although roots can selectively take up nutrients, too much of one can affect the uptake of others. In other words, it is not the absolute level of nutrients that is important but the ratio among them. Toxicity symptoms of one element might actually be expressed as the deficiency symptoms of another. Plants can be healthy even when the nutrient supply is low as long as the levels are balanced.

Before fertilizing to correct a deficiency, it is important to correctly identify the deficient element. Deficiency symptoms can differ among plant species therefore it is difficult to provide descriptions of symptoms that would apply to most plants. When confronted with a potential problem, foliar and soil testing are advised to determine if a deficiency exists. Be aware that environmental and/or certain pest problems could directly or indirectly cause a nutrient deficiency symptom. In these cases, correcting the growing conditions or managing the pest problem is the best course of action, as applying a fertilizer will most likely not correct the problem. Some nutrient deficiencies, such as iron and manganese, are due to elevated soil pH, which makes the nutrients unavailable for plant uptake. Adjusting the soil pH is the best method for correcting these types of nutrient deficiencies for the long term.

Following are common fertilizer products and nutrient content for various essential nutrients that are sometimes determined deficient in plants.

## Macronutrients

### Calcium-containing carriers and Ca Content

Name	Ca %
<i>Liming Materials</i>	
Calcitic limestone	32
Dolomitic limestone	22
Hydrated lime	46
Calcium oxide	60
<i>Fertilizers</i>	
Calcium nitrate	19
Superphosphate	20
Triple superphosphate	14
<i>Others</i>	
Gypsum	23

### Magnesium-containing carriers and Mg Content

Name	Mg %
<i>Liming Materials</i>	
Dolomitic limestone	6-12
Magnesium oxide	50-55
<i>Other</i>	
Potassium magnesium sulfate	
(Sul-Po-Mag)	11
Magnesium sulfate	10

### Nitrogen-containing Fertilizers and Nitrogen Content

Name	N Content %
<i>Inorganic</i>	
Ammonium nitrate	34
Ammonium sulfate	21
Anhydrous ammonia	82
Monoammonium phosphate	11
Diammonium phosphate	16-18
Calcium nitrate	16
Sodium nitrate	16
Potassium nitrate	13
<i>Synthetic Organic</i>	
Urea	45-46
Sulfur-coated urea	40
Urea-formaldehyde	38
<i>Natural Organic</i>	
Cotton seed meal	12-13
Milorganite	12
Animal manure	10-12
Sewage sludge	10-20
Chicken litter	20-40

### Phosphorous-containing Fertilizers and P Content

Name	% P <sub>2</sub> O <sub>5</sub> Available
Superphosphate	20

Triple superphosphate	45
Monoammonium phosphate	49
Diammonium phosphate	47
Ammonium polyphosphate	34
Phosphoric acid	55
Rock Phosphate	3-26
Bone meal	22-28

### Potassium-containing Fertilizers and K Content

Name	K <sub>2</sub> O%
Potassium chloride (muriate of potash)	60-63
Potassium sulfate	50-52
Potassium magnesium sulfate (Sul-Po-Mag)	22
Potassium nitrate	44
Potassium hydroxide	83

### Micronutrients

#### Boron-containing carriers and B Content

Name	B %
Fertilizer borate	14-15
Foliarel	21
Solubor	20
Borax	11

#### Iron-containing carriers and Fe Content

Name	Fe %
Ferrous ammonium phosphate	29
Ferrous ammonium sulfate	14
Ferrous sulfate	19-21
Ferric sulfate	23
Iron chelates	5-11
Iron polyflavonoids	9-10

#### Manganese-containing carriers Mn Content

Name	Content %
Manganese sulfate	26-28
Manganese oxide	41-68
Manganese chelate	5-12

#### Molybdenum-containing carriers and Mo Content

Name	Mo %
Ammonium molybdate	54
Sodium molybdate	39-41
Molybdenum trioxide	66

#### Zinc-containing carriers and Zn Content

Name	Zn %
Zinc sulfate	35
Zinc oxide	78-80
Zinc chelates	9-14
Zinc polyflavonoids	10

# Conversion factors

## Temperature Formulas

$$^{\circ}\text{F} = 9/5 (^{\circ}\text{C}) + 32$$

$$\text{Fahrenheit temperature} = (1.8 \times \text{Celsius temperature}) + 32$$

$$^{\circ}\text{C} = 5/9 [(^{\circ}\text{F}) - 32]$$

$$\text{Celsius temperature} = 0.55556 (\text{Fahrenheit temperature} - 32)$$

## Metric Decimal Multiples and Sub multiples

<u>Multiples and sub multiples</u>	<u>Prefixes</u>	<u>Symbols</u>
109 or 1000000000	giga	G
106 or 1000000	mega	M
103 or 1000	kilo	k
102 or 100	hecto	h
101 or 10	deca	da
10-1 or 0.1	deci	d
10-2 or 0.01	centi	c
10-3 or 0.001	milli	m
10-6 or 0.000001	micro	$\mu$
10-9 or 0.000000001	nano	n

## Metric base units and abbreviations

<u>Quantity</u>	<u>Name of Unit</u>	<u>Symbol</u>
Length	Meter	m
	Centimeter	cm
Mass	Kilogram	Kg
	gram	g
Volume	Liter	l
	Milliliter	ml

## Parts per Million (PPM)

$$\text{PPM} = \text{milligrams/Kilogram} = \text{mg/Kg}$$

$$\text{PPM} = \text{milligrams/liter} = \text{mg/l}$$

Example:      2 PPM = 2 mg/l of solution  
                  2 PPM = 1 mg/ 500 ml of solution

$$\text{PPM} = \text{percent (\%)} \times 10^4$$

$$\% = \text{PPM} \times .0001$$

Example:      1% concentration  $\times 10^4 = 10,000 \text{ PPM}$   
                  0.1% concentration  $\times 10^4 = 1,000 \text{ PPM}$

## Metric to Customary Conversions

### Length/Distance

<u>Multiply</u>	<u>by</u>	<u>To obtain</u>
Centimeters	0.394	Inches
Meters	3.281	Feet
Meters	1.094	Yards
Kilometers	0.621	Miles

### Mass

<u>Multiply</u>	<u>by</u>	<u>To obtain</u>
Grams	0.035	Ounces
Kilograms	2.205	Pounds

**Volume**

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
Milliliters (cc)	0.034	Ounces (US liquid)
Milliliters (cc)	0.068	Tablespoons
Milliliters (cc)	0.203	Teaspoons
Milliliters (cc)	0.061	Cubic inches
Milliliters (cc)	0.004	Cups (US)
Liters	4.226	Cups (US)
Liters	2.113	Pints (US liquid)
Liters	1.057	Quarts (US liquid)
Liters	0.264	Gallons
Cubic meters	35.31	Cubic feet
Cubic meters	1.308	Cubic yards
Cubic meters	0.0008	Acre-foot
Cubic meters	6.290	Bushels

**Area**

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
Square centimeters	0.155	Square inches
Square meters	10.76	Square feet
Square meters	1.196	Square yards
Square meters	0.000247	Acres
Square hectares	2.47	Acres

**Customary to Metric Conversion****Length/Distance**

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
Inches	2.54	Centimeters
Feet	0.305	Meters
Yards	0.914	Meters
Miles	1.610	Kilometers

**Mass**

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
Ounces	28.35	Grams
Pounds	0.454	Kilograms

**Volume**

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
Ounces (US liquid)	29.57	Milliliters (cc)
Tablespoons	14.79	Milliliters
Teaspoons	4.929	Milliliters
Cups (US)	236.6	Milliliters
Cups (US)	0.237	Liters
Pints (US liquid)	0.473	Liters
Quarts (US liquid)	0.946	Liters
Gallons	3.785	Liters
Cubic inches	16.39	Milliliters (cc)
Cubic feet	0.028	Cubic meters
Cubic yards	0.764	Cubic meters
Bushel (US)	0.035	Cubic meters
Acre-foot	1233.5	Cubic meters

**Area**

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
Square inches	6.451	Sq. centimeters
Square feet	0.093	Square meters
Square yards	0.836	Square meters
Acre	4046.9	Square meters
Acre	0.405	Hectares

**General Conversions:****Length/Distance**

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
Inches	0.083	Feet
Inches	0.028	Yards
Feet	12	Inches
Feet	0.333	Yards
Feet	0.00019	Miles
Yards	36	Inches
Yards	3	Feet
Yards	0.00057	Yards
Miles	5280	Feet
Miles	1760	Yards

**Mass**

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
Ounce	0.062	Pounds
Pounds	16	Ounce
Pounds	0.0005	Ton (short)
Tons (short)	2000	Pounds

**Volume**

<i>Multiply</i>	<i>by</i>	<i>To obtain</i>
Teaspoons	0.333	Tablespoons
Teaspoons	0.167	Ounces (US liquid)
Teaspoons	0.021	Cups (US)
Teaspoons	0.010	Pints (US liquid)
Tablespoons	3.001	Teaspoons
Tablespoons	0.500	Ounces (US liquid)
Tablespoons	0.062	Cups (US)
Tablespoons	0.031	Pints US liquid)
Cups (US)	48.00	Teaspoons
Cups (US)	16.00	Tablespoons
Cups (US)	8.000	Ounces (US liquid)
Cups (US)	0.500	Pints (US liquid)
Cups (US)	0.250	Quarts (US liquid)
Pints (US liquid)	16	Ounces (US liquid)
Pints (US liquid)	2.000	Cups (US)
Pints (US liquid)	0.500	Quarts (US liquid)
Pints (US liquid)	0.125	Gallons (US)
Quarts (US liquid)	32	Ounces (US liquid)
Quarts (US liquid)	4.0	Cups (US)
Quarts (US liquid)	2	Pints (US liquid)
Quarts (US liquid)	0.25	Gallons (US)
Gallons (US)	128	Ounces (US liquid)
Gallons (US)	16	Cups (US)
Gallons (US)	8	Pints (US liquid)
Gallons (US)	4	Quarts (US liquid)

Cubic inches	0.0006	Cubic feet
Cubic inches	0.000021	Cubic yards
Cubic feet	1728	Cubic inches
Cubic feet	0.037	Cubic yards
Cubic feet	0.804	Bushels (US)
Cubic yards	27	Cubic feet
Cubic yards	21.70	Bushels (US)
Cubic yards	0.0006	Acre-feet
Bushels (US)	1.244	Cubic feet
Bushels (US)	0.046	Cubic yards
Bushels (US)	0.000029	Acre-feet
Acre-foot	43560	Cubic feet
Acre-foot	1613	Cubic yards
Acre-foot	35003	Bushels (US)

### Area

<u>Multiply</u>	<u>by</u>	<u>To obtain</u>
Square inches	0.007	Square feet
Square feet	144	Square inches
Square feet	0.111	Square yards
Square mile	640	Acres
Square yards	1296	Square inches
Square yards	9	Square feet
Acre	43560	Square feet
Acre	4840	Square yards
Circumference of circle	0.3183	Diameter of the circle
Diameter of circle	3.14	Circumference of circle
Diameter squared	0.7854	Area of circle
Radius squared	3.14	Area of circle

### Area of a square or rectangle

Length x width

### Area of a triangle (with a 90°)

Length x width

2

# Using Growing Degree Days for Insect and other Pest Management

When pest management is based on calendar timings, daily temperatures are not taken into consideration. This can result in misleading information regarding current insect and pest activity. Insects, like plants and many organisms, are dependent on temperature to develop. Depending on weather conditions, especially temperatures, insect and plant development may vary from year to year by a few weeks, consequently predicting the proper time for control measures can be difficult.

Knowing that insect and plant development is dependent on temperature it is possible to utilize daily maximum and minimum temperatures and a “threshold” or “base” temperature and calculate the accumulation of heat units, which are referred to as Growing Degree Days (GDD). By tracking accumulated GDD during the season you can document the rate of development of a particular plant or insect pest. The rate of insect development increases as temperatures exceed the base temperature and decreases as temperatures drop below the base temperature. It is possible to use this information for predicting insect pests as well as certain weed pests.

There are several mathematical equations that can be used to for calculating accumulated GDD based on daily maximum and minimum temperatures. The easiest method is to average the daily maximum and minimum temperatures and subtract from it the base temperature. The threshold or base temperature used for most situations is 50°F.

$$\frac{\text{Max Temp} + \text{Min Temp}}{2} - \text{Base Temperature (50°F)} = \text{Daily GDD}$$

For each day that the average temperature is one degree above the base temperature, one degree-day accumulates. Each day from March 1 to September 30 the daily GDD is calculated and added to the previous day's total. If the average temperature falls below the base temperature this would return a negative GDD. In this case the daily GDD calculation should be entered as **zero** since negative numbers are not included.

Cornell Cooperative Extension – Suffolk County calculates accumulated GDD for a number of locations on Long Island and in New York City. Commercial growers of nursery stock, vegetables and fruit, as well as arborists, landscape gardeners, those in charge of athletic fields, parks, and golf courses and other horticulture related entities can receive this information via email. To sign up for the email, which also includes soil temperatures and precipitation data contact Cornell Cooperative Extension by phone at 631-727-7850, or email Sandra Vultaggio at [sib7@cornell.edu](mailto:sib7@cornell.edu).

# Meteorological Extremes

The following table lists the Meteorological Extremes (°F) at Brookhaven National Laboratory. The period covered is from 1949 to the present. <https://www.bnl.gov/weather/4cast/extremes.php>

Absolute Highest Temperature	100.5°F July 21 1991 & July 22, 1957
Absolute Lowest Temperature	-23.0°F January 22, 1961
Average Yearly Temperature	50.39°F
Coldest Year	1967 (Avg. Temp. = 47.5°F)
Warmest Year	2012 (Avg. Temp. = 54.2°F)
Greatest Daily Temperature Range	56.5°F
Least Daily Temperature Range	0.5°F
Maximum Annual Degree Days	6753 for 1967
Maximum Monthly Degree Days	1414 in January 1977
Average Annual Precipitation	48.93"
Maximum Annual Precipitation	68.66" in 1989
Minimum Annual Precipitation	34.35" in 1965
Maximum Monthly Precipitation	22.14" in October 2005
Minimum Monthly Precipitation	0.04" in October 2024
Maximum Daily Precipitation	9.02" September 10 - 11, 1954 Hurricane Edna
Maximum Hourly Rainfall	2.42" August 11, 2018 and July 1, 2020
Maximum Seasonal Snowfall	90.8" 1995 - 96
Minimum Seasonal Snowfall	4.5" 1997 - 98
Maximum Monthly Snowfall	35.8" February 2013
Maximum Daily Snowfall	19.0" February 1978
Maximum Snowfall, Single Storm	30.9" February 2013
Longest Period Snow Cover	55 days (Dec. 26, 1947 - February 18, 1948)
Absolute First Day of Snowfall	October 17
Absolute Last Day of Snowfall	April 27
Peak Wind Speed	125 mph - August 31, 1954 Hurricane Carol
Lowest Barometric Pressure	28.375" September 12, 1960 Hurricane Donna

# Personal Protective Equipment - Gloves

Listed on the label of your pesticide in the Personal Protective Equipment (PPE) section, there should be a glove type or a category A-H. The label may provide several examples of glove materials which are resistant to that chemical. To find what types of gloves can be used with the pesticide, consult the chart on the next page. According to the Environmental Protection Agency's Worker Protection Standard, only unlined gloves or gloves with separatable liners may be used.

Not all gloves will give you the same level of protection. Some glove materials will last longer against certain types of pesticides and chemicals. They will be highly, moderately or slightly chemical resistant.

With highly chemical resistant gloves, you should clean or replace them at the end of each day's work period. Rinse off all pesticides at rest breaks.

With moderately chemical resistant gloves, you may need to clean or replace them within an hour or two of contact.

With slightly chemical resistant gloves, you may need to clean or replace them within 10 minutes of contact.

Not chemical resistant. Do not wear this type of material as PPE when contact is possible.

The chart on the next page shows the information in an alternative grid format.

The chart on page 108 gives you a range of PPE materials from which to choose for each glove category that may be listed on your pesticide label. It also tells you how long you can expect the material to be resistant to the pesticide you are using. For example, the label might say: "If you want more options, follow the instructions for category F on an EPA chemical resistance selection chart." This means you should select PPE made from barrier laminate, butyl, nitrile or Viton because they are highly chemical resistant to that pesticide.

TYPE OF PERSONAL PROTECTIVE MATERIAL								
Selection Category Listed On Pesticide Label	Barrier Laminate	Butyl Rubber >14 mils	Nitrile Rubber >14 mils	Neoprene Rubber* >14 mils	Natural Rubber >14 mils	Polyethylene	Polyvinyl Chloride (PVC) >14 mils	Viton >14 mils
<b>A</b> (dry and water based foundations)	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
<b>B</b>	HIGH	HIGH	SLIGHT	SLIGHT	NONE	SLIGHT	SLIGHT	SLIGHT
<b>C</b>	HIGH	HIGH	HIGH	HIGH	MOD	MOD	HIGH	HIGH
<b>D</b>	HIGH	HIGH	MOD	MOD	NONE	NONE	NONE	SLIGHT
<b>E</b>	HIGH	SLIGHT	HIGH	HIGH	SLIGHT	NONE	MOD	HIGH
<b>F</b>	HIGH	HIGH	HIGH	MOD	SLIGHT	NONE	SLIGHT	HIGH
<b>G</b>	HIGH	SLIGHT	SLIGHT	SLIGHT	NONE	NONE	NONE	HIGH
<b>H</b>	HIGH	SLIGHT	SLIGHT	SLIGHT	NONE	NONE	NONE	HIGH

\* Includes natural rubber blends and laminates. "MOD" = Moderate

# Requirements for Service Containers

Any person utilizing a service container containing a pesticide must comply with ECL 33-1301 (1)(b) and (c), and must ensure that the container bears the following, or must directly affix to the container a label bearing:

1. The name and address of the manufacturer or registrant as it appears on the pesticide product label
2. The registered product name and the USEPA registration number
3. The maximum volume or weight of pesticide that the container can hold.

In addition, if the service container contains pesticides with any substance or substances in quantities highly toxic to humans, the service container must also bear:

1. The skull and crossbones
2. The word "POISON" prominently, in red, on a background of distinctly contrasting color
3. A statement of an antidote for the pesticide

As an alternative to both of these requirements, a person may directly and securely affix a copy of the registered product label of the pesticide to the container or application device and indicate maximum weight and volume.

Please also note that in addition to properly labeling service/alternative containers, certified applicators, certified technicians, and commercial pesticide apprentices must have a copy of the entire label in their custody during pesticide use.

## **NYS DEC Contact & Reporting Information**

Following is some information useful to those involved in the application and sale of pesticides.

The Bureau of Pesticide Management regulates the registration, application, use, distribution, and sale of pesticides, oversees the certification and supervision of pesticide applicators, promotes Integrated Pest Management, provides compliance assistance and public outreach activities, and enforces portions of the Environmental Conservation Law (ECL).

### **Albany Central Office**

NYS DEC

Division of Materials Management  
Bureau of Pesticides Management  
625 Broadway, Albany, NY 12233-7254  
518- 357-2045 • 518-357-2593 fax  
[www.dec.ny.gov](http://www.dec.ny.gov) • [contact@dec.ny.gov](mailto:contact@dec.ny.gov)

### **NYS DEC Region 1**

Bureau of Pesticide Management  
Bldg 40, SUNY Stony Brook, Stony Brook, NY 11790-2356  
631-444-0350 • 631-444-0231 fax  
[r1pesticides@dec.ny.gov](mailto:r1pesticides@dec.ny.gov)

### **Pesticide Reporting Law**

DEC PRL webpage:

<http://www.dec.ny.gov/chemical/27506.html>

The Cornell Cooperative Extension's Pesticide Sales and Use Reporting Program (PSUR) is a subunit of the Cornell Cooperative Extension's Pesticide Management Education Program. PSUR was assembled in response to the Pesticide Reporting Law of 1996 (Environmental Conservation Law Article 33, Title 12).

The Pesticide Reporting Service Bureau at Cornell University provides technical support to assist you in installing and using the electronic reporting programs and submitting your PRL reports.

Phone: 800-281-7538 (toll free in New York State)  
607-255-9098 (a toll call) outside of New York State

Both numbers are answered Monday–Friday 9:30–5:30 and have voice mail.

Email: [prlsupport@nysprl.com](mailto:prlsupport@nysprl.com)

Web Site: [www.nysprl.com](http://www.nysprl.com)

All annual reports must be submitted electronically in a format developed or accepted by the department consistent with the system file specifications. Due to a change in the PRL in 2022, the DEC can no longer accept paper reports.

To access DEC's electronic reporting software and forms or for more information on electronic reporting, including step-by-step videos, go to [www.nysprl.com](https://www.nysprl.com).

### **Annual Reports for Commercial Applicators/Technicians/Businesses/Agencies**

*Deadline:* February 1 of the year immediately following the reporting year is the deadline to submit Annual Reports for commercial applicators/businesses/agencies.

**All annual reports must be submitted electronically. The DEC no longer accepts paper reports.**

For people who prefer to keep their field notes or record keeping on paper before transferring the data into an electronic format for submitting to the DEC, a Printable PRL Field Notes Template (PDF, 146 KB) is available for this purpose at: <https://dec.ny.gov/sites/default/files/2024-07/prlfieldnotestemplate.pdf>.

These printable templates are not to be submitted to the DEC and are not an acceptable format for the Pesticide Annual Report. DO NOT send these in the mail, email or upload them to the DEC as your annual report. The data needs to be typed into one of the electronic spreadsheets or software to be uploaded to the DEC.

To learn more about electronic spreadsheets and software or to submit your annual report, visit <https://www.nysprl.com/>.

### **Pesticide Business/Agency Registration**

Official DEC info page:

<https://dec.ny.gov/environmental-protection/pesticides/business-agency-information>

Albany Office: 518-402-8748

PestMgt@dec.ny.gov

*Deadline:* Renewal applications must be submitted to the Department at least 45 days before the current registration expires.

Forms can be obtained from the DEC or their website at <https://dec.ny.gov/environmental-protection/pesticides/business-agency-information>

The Business and Agency Registration application and Commercial Permit application forms are now available using DEC's online form tool, nForm. Users must have an NY.gov account to use nForm. Instructions on creating an account can be found at <https://dec.ny.gov/maps/nysdec-nform>.

nForm requires the use of one of the following browsers: Chrome, FireFox, or Microsoft Edge.

*Requirements:*

- The business/agency must be registered with the DEC.
- The business must employ a certified applicator or technician who is certified in each category the business will operate in.
- Completed application.
- Valid insurance certificate. Visit <https://dec.ny.gov/environmental-protection/pesticides/business-agency-information> for detailed information about insurance certificate requirements under the Business and Agency Registration sections.
- All sole proprietorship applicants must be in good standing with child support, if applicable.

The Business Registration fee is \$900 and the registration period is three years. Some Agencies may be fee exempt.

Mail original form to:

NYSDEC Pesticide Reporting and Certification Section  
625 Broadway 9th Floor  
Albany, NY 12233-7254

### **Commercial Permit Application**

Required for distribution, sale, offer for sale, purchase for the purpose of resale or possession for the purpose of resale of a restricted use pesticide. Any person who engages in the sale of a restricted-use pesticide shall be certified by the Commissioner. Each business requiring a Commercial Permit must employ or retain under contract at least one applicator who is certified in NYS.

Official DEC info: <https://dec.ny.gov/environmental-protection/pesticides/business-agency-information>

Forms can be obtained from the DEC or their website at [http://www.dec.ny.gov/docs/materials\\_minerals\\_pdf/comform.pdf](http://www.dec.ny.gov/docs/materials_minerals_pdf/comform.pdf)

The Commercial Permit Application fee is \$600 for 2 years.

Mail original form to:

NYSDEC Pesticide Reporting and Certification Section  
625 Broadway 9th Floor  
Albany, NY 12233-7254

## Pesticides Registered in New York

Official DEC info page:

<https://dec.ny.gov/environmental-protection/pesticides/product-registration>

Pesticide products that are registered in New York State can be found on the NYS Pesticide Administration Database (NYSPAD). NYSPAD is an information portal that allows users to view pesticide product labels, search for re-certification courses and exams, and more.

- <https://extapps.dec.ny.gov/nyspad/>

Be sure the label on the product you are using matches the approved label in NYS.

NOTE: Some products registered in New York State are prohibited from use in Nassau and Suffolk Counties and will be indicated in the entries at each website. There are over 400 New York State registered products that are prohibited from use in Nassau and Suffolk County. Additional products have Long Island use limits. Applicators are advised that some products, while not on the prohibited list, can contain language relating to the products ability to leach and contaminate groundwater especially where the groundwater table is shallow and soils are permeable. Applicators should determine the appropriateness of their use under site-specific circumstances.

# Extension Educators

## Cornell Cooperative Extension of Suffolk County

Extension Education Center

423 Griffing Avenue, Suite 100, Riverhead, NY 11901-3071

Tel: 631-727-7850 • Fax: 631-852-3205

[www.ccesuffolk.org](http://www.ccesuffolk.org)

\*denotes educators located at LIHREC

Marie Boulier – Structural Pests & Public Health

[mwb38@cornell.edu](mailto:mwb38@cornell.edu)

Dakota Caruso - Agriculture Stewardship Technician

[dlc328@cornell.edu](mailto:dlc328@cornell.edu)

Jared Dyer - Entomology Educator

[jd852@cornell.edu](mailto:jd852@cornell.edu)

Daniel Gilrein\* – Entomology

[dog1@cornell.edu](mailto:dog1@cornell.edu)

Emily Lindback - Agricultural Stewardship Specialist

[el684@cornell.edu](mailto:el684@cornell.edu)

Sandra Menasha – Potato/Vegetable

[srm45@cornell.edu](mailto:srm45@cornell.edu)

Dale Moyer - Extension Educator

[ddm4@cornell.edu](mailto:ddm4@cornell.edu)

Alice Raimondo – Horticulture Consultant

[aw242@cornell.edu](mailto:aw242@cornell.edu)

Andrew Senesac\* – Weed Science

[afs2@cornell.edu](mailto:afs2@cornell.edu)

Kyle Smith – Greenhouse Technician

[ks2224@cornell.edu](mailto:ks2224@cornell.edu)

Mina Vescera, Nursery / Landscape

[mv365@cornell.edu](mailto:mv365@cornell.edu)

Sandra Vultaggio – Horticulture Consultant

[sib7@cornell.edu](mailto:sib7@cornell.edu)

Alice Wise\* – Viticulture Specialist / Ag Program Director

[aww1@cornell.edu](mailto:aww1@cornell.edu)

Dominick Zeppetella - Agricultural Stewardship Technician

[djz45@cornell.edu](mailto:djz45@cornell.edu)

Roxanne Zimmer - Community Horticulture

[rz378@cornell.edu](mailto:rz378@cornell.edu)

*Agriculture Administrative Assistants*

Courtney Fenyo - Ag Program  
cf389@cornell.edu

Sarah Osborn – Agricultural Stewardship Program  
so348@cornell.edu

**Cornell University's Long Island Horticultural Research and Extension Center (LIHREC)**

3059 Sound Avenue, Riverhead, NY 11901

Tel: 631-727-3595 • Fax: 631-727-3611

<https://cals.cornell.edu/agricultural-experiment-station/research-farms/long-island-horticultural-research-and-extension-center-lihrec>

Nora Catlin – Director / Floriculture  
njc23@cornell.edu

Margery Daughtrey – Plant Pathology / Ornamentals  
mld9@cornell.edu

Daniel Heck – Plant Pathology / Vegetables  
dwh237@cornell.edu

**Cornell Cooperative Extension of Nassau County**

[www.ccenassau.org](http://www.ccenassau.org)

*East Meadow Farm*

*Horticulture Education Center & Diagnostic/ Soil Testing Lab*  
832 Merrick Avenue, East Meadow, NY 11554

Tel: 516-832-2591 Ext 200

Email: nassau@cornell.edu

Michael Fiorentino – Natural Resources Team Leader

Chloe Dymek – Natural Resources Program Coordinator  
cid7@cornell.edu

Vincent Drzewucki, Jr – Urban Forestry and Horticulture Educator  
vad37@cornell.edu

Peter Henneberry – East Meadow Farm Operations Coordinator  
pth36@cornell.edu

# Professional Horticulture Associations

## American Hort (*Formerly American Nursery & Landscape Association*)

2130 Stella Court, Columbus, OH 43215  
Tel: Ohio 614-487-1117 • D.C. 202-789-2900  
carolb@AmericanHort.org • [www.americanhort.org/](http://www.americanhort.org/)

## American Horticultural Society

7931 East Boulevard Drive, Alexandria, VA 22308  
Tel: 703.768.5700 • Fax: 703.768.8700  
webmaster@ahsgardening.org • [www.ahsgardening.org/](http://www.ahsgardening.org/)

## American Society of Landscape Architects, New York Chapter

450 Lexington Avenue, 4th Floor New York, NY 10017  
Tel: 212-269-2984  
secretary@aslany.org • [www.aslany.org/](http://www.aslany.org/)

## Christmas Tree Farmers Association of New York

PO Box 705, Salem NY 12865  
Tel: (518) 854-7386  
info@ctfany.org • [www.ctfany.org/](http://www.ctfany.org/)

## The Garden Center Group

PO Box 801494, Acworth, GA 30101  
Tel: 678-909-7770  
danny@thegardencentergroup.com  
<https://www.thegardencentergroup.com/>

## Horticulture Research Institute

525 9th St. NW, Suite 800, Washington, DC 20004  
Tel: 614-487-1117  
jenniferg@americanhort.org • [www.hriresearch.org](http://www.hriresearch.org)

## International Plant Propagator's Society (Eastern Region)

7685 Kiana Dr, Colorado Springs, CO 80908  
Tel: 930-842-9339  
ippser@gmail.com • <https://ena.ipps.org>

## International Society of Arboriculture

P.O. Box 191  
Annapolis Junction, MD 20701  
Tel: 888-472-8733 (toll free US and Canada)  
Fax change to: 240-547-1795  
[www.isa-arbor.com](http://www.isa-arbor.com)

**Irrigation Association of New York**  
1069 Main St, Suite #319 Holbrook, NY 11741  
Tel: 631-665-4545  
info@iany.org • [www.iany.org](http://www.iany.org)

**Landscape Contractors Association of Long Island**  
P.O. Box 489, Brightwaters, NY 11718  
Tel: 631-968-8210  
admin@lcali.org • <https://www.lcali.org/>

**Long Island Arboricultural Association, Inc.**  
P.O. Box 2215  
North Babylon, NY 11779  
Tel: 516-415-2298  
Longislandarborists@gmail.com  
<https://longislandarboriculturalassociation.org/>

**Long Island Farm Bureau**  
104 Edwards Avenue Suite 3, Calverton, NY 11913  
Tel. 631-727-3777  
[www.lifb.com](http://www.lifb.com)

**Long Island Flower Growers Association**  
P.O. Box 102, Jamesport, NY 11947  
Tel: 631-886-2213  
info@lifga.com • <https://www.lifga.com/>

**Long Island Golf Course Superintendents Association**  
P.O. Box 84, Wading River, NY 11792  
Tel: 631-886-2434  
ligcsa@aol.com • [www.ligcsa.com](http://www.ligcsa.com)

**Long Island Native Plant Initiative, Inc. (LINPI)**  
PO Box 106, Brentwood, NY 11717 (Mailing Address)  
(Greenhouse Address) The Sisters of St. Joseph  
1725 Brentwood Road, Brentwood, NY  
Tel: 631-260-1513  
[www.linpi.org](http://www.linpi.org)

**Long Island Invasive Species Management Area (LIISMA)**  
1725 Brentwood Road Building 2, Brentwood, NY 11717  
Tel: 631-560-9945  
invasive@liisma.org • [www.liisma.org/](http://www.liisma.org/)

**Long Island Nursery & Landscape Association**  
PO Box 832, Sayville, NY 11782  
info@linla.org • [www.linla.org](http://www.linla.org)

**National Association of Landscape Professionals**  
12500 Fair Lakes Circle, Suite 200, Fairfax, VA 22033  
Tel: 800-395-2522 • Fax: 703-322-2066  
info@landscapeprofessionals.org  
[www.landscapeprofessionals.org](http://www.landscapeprofessionals.org)

**NYS Arborists ISA Chapter**  
136 Everett Rd, Albany, NY 11205  
Tel: 518-694-5507 • Fax: 518-935-9436  
info@nysarborists.com • [www.nysarborists.com](http://www.nysarborists.com)

**NYS Nursery and Landscape Association**  
230 Washington Avenue Extension, Suite 101  
Albany, New York 12203-3539  
Tel: 518-580-4063 • Fax: 518-463-8656  
info@nysnla.com • <https://www.nysnla.com/>

**NYS Turfgrass Association**  
P.O. Box 612, Latham, NY 12110  
Tel: 518-783-1229 • Fax: 518-783-1258  
nysta@nysta.org • [www.nysta.org](http://www.nysta.org)

**Perennial Plant Association**  
P.O Box 6652, Raleigh, NC 27628  
Tel: 888-440-3122  
info@perennialplant.org • [www.perennialplant.org](http://www.perennialplant.org)

**Professional Certified Applicators of Long Island**  
P.O. Box 1106, Sound Beach, NY 11789  
Tel: 631-744-0634  
pcaofli@gmail.com • [www.pcaofli.com](http://www.pcaofli.com)

**Quality Parks**  
Port Jefferson, NY 11777  
Tel: 631-473-6760  
mblock@qualityparks.org • [www.qualityparks.org](http://www.qualityparks.org)

**Tree Care Industry Association**  
Tel: 800-733-2622  
memberservices@tcia.org • [www.tcia.org](http://www.tcia.org)

# **Colleges/Schools on Long Island with Horticulture Programs**

## **Farmingdale State College**

Urban Horticulture & Design Department  
2350 Broadhollow Road  
Thompson Hall, Room 202  
Farmingdale, New York 11735  
Tel: 934-420-2711  
[jonathan.lehrer@farmingdale.edu](mailto:jonathan.lehrer@farmingdale.edu)  
<https://www.farmingdale.edu/business/hor/>

## **Wilson Tech**

Adult Education  
17 Westminister Ave.  
Dix Hills, NY 11746  
Tel: 631-667-6000  
<https://www.wilsontech.org/adults/>

# **Gardens and Arborets in the Long Island/New York City Area**

## **Bailey Arboretum**

Bayville Road and Feeks Lane, Lattington, NY 11560  
516-571-8020 • [www.baileyarboretum.org](http://www.baileyarboretum.org)

## **Bayard Cutting Arboretum**

440 Montauk Hwy., Great River, NY 11739  
631-581-1002  
[www.bayardcuttingarboretum.com](http://www.bayardcuttingarboretum.com)

## **Bridge Gardens**

36 Mitchell Lane, Bridgehampton, NY 11932  
631-283-3195  
[www.peconiclandtrust.org/bridge\\_gardens.html](http://www.peconiclandtrust.org/bridge_gardens.html)

## **Brooklyn Botanic Garden**

1000 Washington Avenue, Brooklyn, NY 11225  
718-623-7200 • [www.bbg.org](http://www.bbg.org)

## **Clark Botanic Garden**

193 I.U. Willets Road, Albertson, NY 11507  
516-484-8602  
[www.clarkbotanic.org](http://www.clarkbotanic.org)

## **Conservatory Garden**

Central Park  
105th Street and Fifth Avenue, New York, NY 10029  
212-360-2766  
[www.centralpark.com](http://www.centralpark.com)

## **Farmingdale State College Ornamental Horticulture Gardens**

2350 Broadhollow Rd, Farmingdale, NY 11735  
631-420-2113

<https://farmingdalesc.maps.arcgis.com/apps/MapJournal/index.html?appid=f85639c4505146c7b322bbe9c40f9dbf>

## **The Garden City Bird Sanctuary & Arboretum**

Garden City, NY 11530 (opposite 181 Tanners Pond Rd.)  
Tel: 516-326-1720  
<https://gcbirdsanctuary.com/>

## **The Hofstra University Arboretum**

129 Hofstra University, Hempstead, NY 11549  
516-463-6623  
[www.hofstra.edu/community/Arbor/index.html](http://www.hofstra.edu/community/Arbor/index.html)

## **The John P. Humes Japanese Stroll Garden**

Dogwood Lane, Mill Neck, NY 11765  
516-922-1028  
<https://northshorelandalliance.org/places-to-visit/humes-japanese-stroll-garden/>

**LongHouse Reserve**

133 Hands Creek Rd., East Hampton, NY 11937  
631-329-3568 • [www.longhouse.org](http://www.longhouse.org)

**The Madoo Conservancy**

618 Sagg Main Street, Sagaponack, NY 11962  
631-537-8200 • [www.madoo.org](http://www.madoo.org)

**Nassau County Museum of Art**

One Museum Drive at Northern Blvd., Roslyn Harbor, NY 11576  
516-484-9338  
[www.nassaumuseum.org](http://www.nassaumuseum.org)

**The NY Botanical Garden**

2900 Southern Blvd., Bronx, NY 10458  
718-817-8700 • [www.nybg.org](http://www.nybg.org)

**Old Westbury Gardens**

71 Old Westbury Road, Old Westbury, NY 11568  
516-333-0048  
[www.oldwestburygardens.org](http://www.oldwestburygardens.org)

**Planting Fields Arboretum**

1395 Planting Fields Road  
PO Box 58, Oyster Bay, NY 11771  
516-922-9210  
[www.plantingfields.org](http://www.plantingfields.org)

**Queens Botanical Garden**

43-50 Main Street, Flushing, NY 11355  
718-886-3800  
[www.queensbotanical.org](http://www.queensbotanical.org)

**Colonial Herb Garden at the Water Mill Museum**

41 Old Mill Road, Water Mill, NY 11976  
631-726-4625  
[www.watermillmuseum.org](http://www.watermillmuseum.org)

**Wave Hill**

4900 Independence Ave, Bronx, NY 10471  
718-549-3200  
[www.wavehill.org](http://www.wavehill.org)

# Agency Contact Information:

## NYS Department of Agriculture and Markets

*Division of Plant Industry*

4 Stewart Avenue

Westhampton Beach, NY 11978

Tel: (631) 288-4191

*General Information*

Tel: (800) 554-4501

<https://agriculture.ny.gov/division-plant-industry>

## NYS Agriculture and Markets Plant Industry Horticultural Inspectors

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**New York State Department of Environmental Conservation**  
625 Broadway  
Albany, NY 12233  
[www.dec.ny.gov](http://www.dec.ny.gov)

- *Chemical Bulk Storage Helpline* 518-402-9543
- *Hazardous Waste Generators, Small Quantity Generators, and Household Hazardous Wastes*  
518-402-8652 or [info.sqg@dec.ny.gov](mailto:info.sqg@dec.ny.gov)
- *Inspector General Hotline* (800) 367-4448
- *Poachers and Polluters* 844-DEC-ECOS (844-332-3267)
- *Regulatory Fee Program* 518-402-9362  
9 AM - 12 PM and 1:30 PM - 4 PM
- *Spills Hotline* (800) 457-7362  
or (518) 457-7362, twenty-four-hour service

**New York State Department of Labor**  
State Campus, Building 12  
Albany, NY 12240  
[info.nysdol@labor.ny.gov](mailto:info.nysdol@labor.ny.gov)  
[www.labor.ny.gov](http://www.labor.ny.gov)

*Division of Labor Standards*  
400 Oak St, Suite 101  
Garden City, NY 11530  
Tel: (516) 794-8195

**Suffolk County Department of Health Services**  
3500 Sunrise Highway, Ste 124  
P.O. Box 9006  
Great River, NY 11739  
Tel: (631) 853-3000  
[www.suffolkcountyny.gov/departments/healthservices.aspx](http://www.suffolkcountyny.gov/departments/healthservices.aspx)

**Suffolk County Department of Health Services**  
*Migrant Housing General Sanitation*  
Division of Public Health / Bureau of Public Health Protection  
360 Yaphank Avenue, Suite 2A  
Yaphank, NY 11980  
Tel: 631-852-5999

**Suffolk County Farmland Select Committee**

*Purchase of Development Rights*  
H. Lee Dennison Building - 11th Floor  
100 Veterans Memorial Highway  
Hauppauge, NY 11788  
Tel: 631-853-5191

**Suffolk County Department of Economic Planning and Environment**

*Open Space & Farmland Preservation*  
*Suffolk County Agricultural District Program*  
H. Lee Dennison Building - 11th Floor  
100 Veterans Memorial Highway  
Hauppauge, New York 11788  
Tel: (631) 853-5191

**Suffolk County Soil and Water Conservation District**

423 Griffing Ave  
Riverhead, NY 11901  
Tel: (631) 852-3285

**USDA/APHIS/PPQ**

*Animal and Plant Health Inspection Service*  
4 Stewart Avenue  
Westhampton Beach, NY 11978  
Tel: (631) 288-4191  
[www.aphis.usda.gov](http://www.aphis.usda.gov)

**USDA/Natural Resources Conservation Service**

423 Griffing Ave.  
Riverhead, NY 11901  
Tel: (631) 727-2315  
[www.ny.nrcs.usda.gov](http://www.ny.nrcs.usda.gov)

**US Department of Labor**

*Wage and Hour Division*  
1400 Old Country Road, Suite 410  
Westbury, NY 11590  
Tel: (516) 338-1890  
[www.dol.gov](http://www.dol.gov)

**US Department of Transportation**

1200 New Jersey Avenue, SE  
Washington D.C. 20590  
Tel: (202) 366-4000  
[www.dot.gov](http://www.dot.gov)