

Genus	Buddleia	Caryopteris	Caryopteris
Species			
Variety	Adonis Blue, Peacock, Emporer	Petite Blue	Sunshine Blue
Variety	English Buddleia, (Adonis Blue, Peacock, Purple Emporer)	Caryopteris Petite Bleu	Caryopteris Sunshine Blue
phMin/Max	5.8-6.4	5.8-6.4	5.8-6.4
extractionMin/Max	.6 - .9	.6 - .9	.6 - .9
fertilizationMin/Max	150 ppm	150 ppm to 200 ppm	150 ppm to 200 ppm
Over wintering Temperature (Zones 2-7):	35 to 45 degrees	35 to 45 degrees	35 to 45 degrees
Light Level	Moderate - High	Moderate to High	Low - Moderate
Shade Requirements	none	None, full sun	Light Shade with high light
WaterRequirement	Moderate	Dry to moderate	Dry to moderate
ESTIMATED FINISHING TIMES <i>Container Size / Liner Size</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>
1 GL or 8" from 50 count liners with Finishing & Timing. 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	Will finish in 8-10 weeks from 50's anytime. 2-4 Pinches.	Plant in the Summer for Spring finish with 2-3 pinches. Then 8 weeks out of the cold with flowers.	Plant in the Summer for Spring finish with 2-3 pinches. Then 8 weeks out of the cold with flowers.
1GL or 8" from 3" liners @ 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	6-8 weeks, 1-2 pinches	6-8 weeks, 0-2 pinches	6-8 weeks, 0-2 pinches
Finishing & Timing Information. Assuming early spring planting.	Spring through Fall Finish	Spring through Fall Finish	Spring through Fall Finish
PinchingGrowthRegulators	2-3 prunes will produce a very compact full 2 gallon. See Special Notes for additional pruning protocol.	Frequent early pinching produces a full plant ready for August sales. Stop pruning in late June - early July to allow for flower initiation.	Frequent early pinching produces a full plant ready for August sales. Stop pruning in late June - early July to allow for flower initiation.
pestDiseaseManagement	Spider Mites, Aphids, Downy Mildew	Well drained soil is important to ward off root diseases	Well drained soil is important to ward off root diseases
SpecialNotes	Buddleia will rebloom in approximately 4-6 weeks from a pinch prune during the summer. Hence, having up to 3-4 crop cycles will allow you to continually have fresh product ready to sell covered with large terminal blooms.	Sunshine Blue needs a sunny location to maintain chartreuse leaves. Also a well drained soil is necessary for them to thrive.	A well drained soil is necessary for them to thrive. Turns lime-green with too much shade, however, summer temps and light intensity may require the use of light shade.
Heat Zone (high to low)	10-4	9-4	9-4
Deciduous/Evergreen	Deciduous (semi evergreen with warm winters)	Deciduous	Deciduous
Vernalization for flowering	Not necessary. Long days increases flowering.	Not Necessary. They will flower in both the spring out of the cold and naturally in the fall.	Not Necessary. They will flower in both the spring out of the cold and naturally in the fall.
Flowers on new or old wood	New (blooms Long Day)	New	New

Genus	Deutzia	Euonymus	Hibiscus
Species		fortunei	
Variety	Chardonnay Pearls	Gold Splash	Lavender, White
Variety	Deutzia Chardonnay Pearls	Euonymus fortunei Gold Splash	Hibiscus Chiffon Series - Lavender & White Chiffon
phMin/Max	5.8-6.4	5.8-6.4	5.8-6.4
extractionMin/Max	.6 - .9	.6 - .9	.8 - 1.4
fertilizationMin/Max	150 ppm to 200 ppm	150 ppm to 200 ppm	200 ppm to 300 ppm
Over wintering Temperature (Zones 2-7):	35 to 45 degrees	polyhouse - no heat	35 to 45 degrees
Light Level	Low - Moderate	Moderate - High	Moderate - High
Shade Requirements	Light Shade with summer production	Full sun to light shade	Full sun
WaterRequirement	Moderate	Dry to Moderate	Moderate
ESTIMATED FINISHING TIMES <i>Container Size / Liner Size</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>
1 GL or 8" from 50 count liners with Finishing & Timing. 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	Plant in Summer for Spring finishing with 2-3 Pinches in the summer only. Then 4-6 weeks out of the cold. Flowers very quickly.	Plant in the Late spring for Spring Finish with 2-3 pinches. Then 6 Weeks out of the cold.	Plant in the Late spring for Spring Finish with 2-3 light pinches. Then 8-10 Weeks out of the cold.
1GL or 8" from 3" liners @ 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	4-8 weeks, no pinch for spring flowering, 1-3 for summer or fall production	10-16 weeks, 1-2 pinches	8-10 weeks, 0-2 pinches
Finishing & Timing Information. Assuming early spring planting.	Spring to Fall Finish	Summer Through Fall	Spring to Fall Finish
PinchingGrowthRegulators	Pinch prune often to build a full bodied plant, Remembering that it flowers on old wood so a dormant or early Spring prune will remove all flower buds.	When actively growing prune frequently .	Hibiscus are a genus that really benefits from pinch pruning since a hard or traditional shearing will shut them down for 3-4 weeks.
pestDiseaseManagement		Aphids, Gall,	Aphids, Whiteflies
SpecialNotes	Sun needed to hold Chartreuse leaf color. However, summer heat and afternoon sun will discolor tips, so try light shade if this occurs in your area. Can be produced in small pots as a foliage filler plant for combinations.	Adaptable to a range of pH's. Will not tolerate swampy soils	Hibiscus are very heavy feeders, light colored foliage coloration and yellowing of veins is an indication of underfeeding. Yellowing in the veins can be an indicator of underfeeding.
Heat Zone (high to low)	8-5	9-3	9-1
Deciduous/Evergreen	Deciduous	Evergreen	Deciduous
Vernalization for flowering	Required	no	no
Flowers on new or old wood	Old	None	New

Genus	Hibiscus	Hydrangea	Hydrangea
Species		paniculata	paniculata
Variety	Blue, Blush, Rose, Violet	Little Lamb	Limelight & Pinky Winky
Variety	Hibiscus Satin Series - Blue, Blush, Rose & Violet Satin	Hydrangea pan. Little Lamb	Hydrangea pan. Limelight & Pinky Winky
phMin/Max	5.8-6.4	5.8-6.4	5.8-6.4
extractionMin/Max	.8 - 1.4	.8 - 1.4	.8 - 1.4
fertilizationMin/Max	200 ppm to 300 ppm	150 ppm to 300 ppm	150 ppm to 300 ppm
Over wintering Temperature (Zones 2-7):	35 to 45 degrees	35 to 45 degrees	35 to 45 degrees
Light Level	Moderate - High	Moderate - High	Moderate - High
Shade Requirements	Full sun	None, Full Sun	None, Full Sun
WaterRequirement	Moderate	High	High
ESTIMATED FINISHING TIMES <i>Container Size / Liner Size</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>
1 GL or 8" from 50 count liners with Finishing & Timing. 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	Plant in the Late spring for Spring Finish with 2-3 light pinches. Then 10 Weeks out of the cold	Plant in Summer for Spring Finish with 2-3 Pinches. Then 10 weeks out of the cold. 14-16 to flower.	Plant in Summer for Spring Finish with 2-3 Pinches. Then 8-10 weeks out of the cold. 12-14 to flower.
1GL or 8" from 3" liners @ 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	8-10 weeks, 0-2 pinches	10 weeks to finish with no color. 16-18 with color. Needs a light pinch 2 weeks after transplant to thicken up the plant.	8 weeks to finish with no color. 14-16 with color. Needs a light pinch 2 weeks after transplant to thicken up the plant.
Finishing & Timing Information. Assuming early spring planting.	Spring to Fall Finish	Spring to Fall Finish	Spring to Fall Finish
PinchingGrowthRegulators	The Satin Series are a very slow grower. Hibiscus are a genus that really benefits from pinch pruning since a hard or traditional shearing will shut them down for 3-4 weeks. Plants may take 2 years to become salable for 50's.	Little Lamb needs to be pinched or pruned when young to build the body needed to support the flowers. Left to grow out with minimal pruning and you'll have a plant which opens up and lays over when in flower.	Flowers from late July until Early September in the landscape. A light pinch after flowering will result in fresh terminals 6-8 weeks later. NOTE: If you hard prune after mid summer flowers will be delayed until the end of September.
pestDiseaseManagement	Aphids, Whiteflies	Aphids, Leaf Spot, Spider Mites	Aphids, Leaf Spot, Spider Mites
SpecialNotes	The Satins require additional pinching in contrast to the Chiffons which are naturally branching. Very heavy feeders, light green foliage is an indication of underfeeding.	NOTE: If you hard prune you will delay flowering by an additional 4 weeks versus pinching. For summer flowering your last pinch should occur in late May or early June in nursery production crops.	NOTE: Even though Pinky Winky is a REBLOOMER if you hard prune in mid summer flowers will be delayed until the end of September. Versus a light pinch which will produce flowers by early September. Try staging your crop and have 3-4 blocks pinching a block every 2 weeks.
Heat Zone (high to low)	9-1	8-1	8-1
Deciduous/Evergreen	Deciduous	Deciduous	Deciduous
Vernalization for flowering	no	Required	Required
Flowers on new or old wood	New	New	New

Genus	Hydrangea	Itea	Kolkwitzia
Species	paniculata		amabilis
Variety	Quick Fire	Little Henry	Dream Catcher
Variety	Hydrangea pan. Quick Fire	Itea Little Henry	Kolkwitzia amabilis Dream Catcher™
phMin/Max	5.8-6.4	5.8-6.4	5.8-6.4
extractionMin/Max	.8 - 1.4	0.6 to 1.2	0.6 to 1.2
fertilizationMin/Max	150 ppm to 300 ppm	150 ppm to 300 ppm	150 ppm to 300 ppm
Over wintering Temperature (Zones 2-7):	35 to 45 degrees	polyhouse- no heat	35 to 45 degrees
Light Level	Moderate - High	Moderate - High	Low - Moderate
Shade Requirements	None, Full Sun	None,	Shade in summer
WaterRequirement	High	Dry to Moderate	Moderate
ESTIMATED FINISHING TIMES <i>Container Size / Liner Size</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>
1 GL or 8" from 50 count liners with Finishing & Timing. 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	Plant in Summer for Spring Finish with 2-3 Pinches. Then 8-10 weeks out of the cold. 10-12 to flower.	Plant in the Late spring for Spring Finish with 2-3 pinches. Then 6 weeks out of the Cold.	Plant in the Late spring for Spring Finish with 2-3 pinches. Then 6-8 weeks out of the cold.
1GL or 8" from 3" liners @ 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	8 weeks to finish with no color. 10-14 with color.	10-14 weeks, 1-3 pinches	10-12 Weeks, 1-2 Pinches.
Finishing & Timing Information. Assuming early spring planting.	Spring to Fall Finish	Summer to Fall Finish	Summer to Fall Finish
PinchingGrowthRegulators	Because this plant can bloom so early it is really important to go into the winter ready to ship in the Spring as Spring pruning will delay flowering.	Frequent pinching will produce a full bodied container. Consider producing a Spiraea like mounding container.	Can be very leggy without frequent pruning
pestDiseaseManagement	Aphids, Leaf Spot, Spider Mites	Aphids	Aphids, Bacterial leaf spot
SpecialNotes	QuickFire flowers 3-4 weeks earlier than Limelight. You should be able to flower QuickFire by early June possibly by Memorial Day. See Hydrangea Little Lamb for additional tips.	Best targeted for summer and fall sales due to great fall foliage color. For spring flowering sales, plant in summer and over winter.	As with many gold foliage plants this one requires shading during summer.
Heat Zone (high to low)	8-1	9-5	9-5
Deciduous/Evergreen	Deciduous	Semi-evergreen to Evergreen	Deciduous
Vernalization for flowering	Required	Required	Required
Flowers on new or old wood	New	Old	Old

Genus	Leycesteria	Physocarpus	Physocarpus
Species			
Variety	Golden Lanterns	Coppertina	Summer Wine
Variety	Leycesteria Golden Lanterns	Physocarpus Coppertina	Physocarpus Summer Wine
phMin/Max	5.8-6.4	5.8-6.4	5.8-6.4
extractionMin/Max	.6 - .9	.6 - .9	.6 - .9
fertilizationMin/Max	150 ppm to 200 ppm	150 ppm to 200 ppm	150 ppm to 200 ppm
Over wintering Temperature (Zones 2-7):	35 to 45 degrees	35 to 45 degrees	35 to 45 degrees
Light Level	Moderate	Moderate - High	Moderate - High
Shade Requirements	None to light shade	None	Light shade with high heat
WaterRequirement	Moderate	Moderate, avoid dry down	Moderate, avoid dry down
ESTIMATED FINISHING TIMES <i>Container Size / Liner Size</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>
1 GL or 8" from 50 count liners with Finishing & Timing. 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	Will finish in 8 weeks from 50's anytime. 1-2 Pinches.	Plant early Summer for Spring Finishing, 2-4 Pinches. Then 6 weeks out of the cold.	Plant early Summer for Spring Finishing, 2-4 Pinches. Then 6 weeks out of the cold.
1GL or 8" from 3" liners @ 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	5-7 weeks, 1 pinch	6-8 weeks, 0-2 pinches (pinch new growth only)	6-8 weeks, 0-2 pinches (pinch new growth only)
Finishing & Timing Information. Assuming early spring planting.	Spring to Fall Finish	Summer to Fall Finish	Summer to Fall Finish
PinchingGrowthRegulators	A very rapid grower early and frequent pruning is a must or your finished container will be tall and upright. Starts flowering in late Spring - early Summer at which time stop pruning.	Frequent pinching will produce a full bodied container. Consider producing a Spiraea like mounding plant in a container as this will be much more appealing to the consumer.	Frequent pinching will produce a full bodied container. Consider producing a Spiraea like mounding plant in a container as this will be much more appealing to the consumer.
pestDiseaseManagement	Spider Mites, Aphids, Thrips	None	None
SpecialNotes	Can be over wintered in a 29 degree polyhouse. Red calyxes are very showy making this great for Fall sales. In Zone 6 this is a dieback shrub that performs like a perennial.	Coppertina is showing more tolerance for high summer temps. The Fall color on this plant is outstanding, echoing the bright colors exhibited in the Spring.	High container soil temps may require the use of shade. In the landscape the plant tolerates the high summer temperatures just fine. Very tough, will withstand acid and alkaline soils, and dry situations.
Heat Zone (high to low)	9-5	8-1	7-1
Deciduous/Evergreen	Deciduous to semi-evergreen	Deciduous	Deciduous
Vernalization for flowering	Not Necessary	Required	Required
Flowers on new or old wood	New	Old	Old

Genus	Rhamnus	Sambucus	Sambucus
Species			
Variety	Fine Line	Black Beauty	Black Lace
Variety	Rhamnus Fine Line	Sambucus Black Beauty	Sambucus Black Lace
phMin/Max	5.8-6.4	5.8-6.4	5.8-6.4
extractionMin/Max	.6 - .9	.6 - .9	.6 - .9
fertilizationMin/Max	150 ppm to 200 ppm	150 ppm to 200 ppm	150 ppm to 200 ppm
Over wintering Temperature (Zones 2-7):	35 to 45 degrees	35 to 45 degrees	35 to 45 degrees
Light Level	Moderate - High	Moderate - High	Moderate - High
Shade Requirements	Light shade with high heat	Light shade in summer heat (High light for darkest leaf color)	Light shade in summer heat (High light for darkest leaf color)
WaterRequirement	Dry	Moderate	Moderate
ESTIMATED FINISHING TIMES <i>Container Size / Liner Size</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>
1 GL or 8" from 50 count liners with Finishing & Timing. 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	Plant early Summer for Spring Finishing, 2-4 Pinches. Then 8-10 weeks out of the cold.	Plant early Summer for Spring Finishing, 2-4 Pinches. Then 6 weeks out of the cold.	Plant early Summer for Spring Finishing, 2-4 Pinches. Then 6 weeks out of the cold.
1GL or 8" from 3" liners @ 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	10-12 weeks or until rooted in, 0-2 pinches	6-8 weeks, 1 pinch	6-8 weeks, 1 pinch
Finishing & Timing Information. Assuming early spring planting.	Summer to Fall Finish	Spring to Summer Finish	Spring to Summer Finish
PinchingGrowthRegulators	Give this plant a flat top and then repeat a few times during the season to produce a fuller plant without loss of height. Normal for Fine Line to have no foliage on the bottom 8-10 inches of the plant.	Frequent pruning is required to produce a full bodied plant. Grow like you would a Spiraea NOTE: a hard shearing once the summer heat arrives will shut down all new growth until cool nights arrive in early fall.	Really benefits from frequent pinching or shearing. NOTE: a hard shearing once the summer heat arrives will shut down all new growth until cool nights arrive in early fall. (September in Michigan)
pestDiseaseManagement	Aphids	Spider Mites, Cercospora, Spray on a regular rotation with a fungicide to control .	Spider Mites, Cercospora, Spray on a regular rotation with a fungicide to control .
SpecialNotes	High night temps can cause some defoliation in container production in zones 6b-7, shading will moderate this.	Black Beauty can be treated as a perennial and cut back or thinned out after it blooms. Poly grown plants will have lighter colored foliage.	When going direct to a 3 gallon watch the watering so as not to keep too wet. Black Lace can be treated as a perennial and cut back or thinned out after it blooms. Poly grown plants will have lighter colored foliage.
Heat Zone (high to low)	7-1	8-6	8-6
Deciduous/Evergreen	Deciduous	Deciduous	Deciduous
Vernalization for flowering	Required	Required	Required
Flowers on new or old wood	None	Old	Old

Genus	Weigela	Weigela	Weigela
Species			
Variety	Fine Wine	Midnight Wine	Wine and Roses
Variety	Weigela Fine Wine™	Weigela Midnight Wine	Weigela Wine and Roses
phMin/Max	5.8-6.4	5.8-6.4	5.8-6.4
extractionMin/Max	.6 - .9	.6 - .9	.6 - .9
fertilizationMin/Max	150 ppm to 200 ppm	150 ppm to 200 ppm	150 ppm to 200 ppm
Over wintering Temperature (Zones 2-7):	35 to 45 degrees	35 to 45 degrees	35 to 45 degrees
Light Level	High	High	High
Shade Requirements	Light shade in high summer heat with low humidity (High light for darkest leaf color)	Light shade in high summer heat with low humidity (High light for darkest leaf color)	Light shade in high summer heat with low humidity (High light for darkest leaf color)
WaterRequirement	Moderate	Moderate	Moderate
ESTIMATED FINISHING TIMES <i>Container Size / Liner Size</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>	ESTIMATED FINISHING TIMES <i>Weeks, # pinches / Weeks, # Shears</i>
1 GL or 8" from 50 count liners with Finishing & Timing. 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	Plant early Summer for Spring Finishing, 2-4 Pinches. Then 6 weeks out of the cold.	Plant early Summer for Spring Finishing, 2-4 Pinches. Then 6 weeks out of the cold.	Plant early Summer for Spring Finishing, 2-4 Pinches. Then 6 weeks out of the cold.
1GL or 8" from 3" liners @ 1 Plant Per Pot. Assuming greenhouse grown during cold weather @ 55-65 degrees.	8-12 weeks, 1-2 pinches	8-12 weeks, 1-2 pinches	8-12 weeks, 1-2 pinches
Finishing & Timing Information. Assuming early spring planting.	Summer to Fall Finish	Summer to Fall Finish	Summer to Fall Finish
PinchingGrowthRegulators	Frequently pinching will produce a tightly mounding product which will have a longer shelf life at retail.	Frequently pinching will produce a tightly mounding product which will have a longer shelf life at retail.	Frequently pinching will produce a tightly mounding product which will have a longer shelf life at retail.
pestDiseaseManagement	None Serious	None Serious	None Serious
SpecialNotes	For burgundy foliage, full sun is required. Leaves will fade to almost green the greater the shade. As with Midnight Wine watch your watering.	Watch your watering, Midnight Wine does not like to be kept too wet. Especially make sure to go into the winter well rooted and on the dry side. Fall potting is not recommended in northern zones.	For burgundy foliage, full sun is required. Leaves will fade to almost green the greater the shade.
Heat Zone (high to low)	8-1	8-1	8-1
Deciduous/Evergreen	Deciduous	Deciduous	Deciduous
Vernalization for flowering	Required in the spring. They will rebloom in fall if kept shaped up.	Required in the spring. They will rebloom in fall if kept shaped up.	Required in the spring. They will rebloom in fall if kept shaped up.
Flowers on new or old wood	Old	Old	Old