

ESSENTIAL RECORDS

Auto Information

Make/Year _____	Make/Year _____
Serial No. _____	Serial No. _____
Registration No. _____	Registration No. _____
Plate No. _____	Plate No. _____
Renew Car Tags On _____	Renew Car Tax On _____
Auto Registration Due _____	Auto Registration Due _____
Auto Inspection Due _____	Auto Inspection Due _____
_____	_____
_____	_____

Medical Information

Blood Type _____	Medical Alert _____
Allergies _____	
Physician _____	Phone _____
Hospital # _____	
Medical Insurance _____	
Policy No. _____	

In Case of Emergency Notify

Name _____
Address _____
Home Phone _____
Business Phone _____

2008 ADVANCED PLANNING

JANUARY _____

FEBRUARY _____

MARCH _____

APRIL _____

MAY _____

JUNE _____

JULY _____

AUGUST _____

SEPTEMBER _____

OCTOBER _____

NOVEMBER _____

DECEMBER _____

2009 ADVANCED PLANNING

JANUARY _____

FEBRUARY _____

MARCH _____

APRIL _____

MAY _____

JUNE _____

JULY _____

AUGUST _____

SEPTEMBER _____

OCTOBER _____

NOVEMBER _____

DECEMBER _____

2008 CALENDAR

JANUARY							FEBRUARY							MARCH							APRIL						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5						1	2							1			1	2	3	4	5
6	7	8	9	10	11	12	3	4	5	6	7	8	9	2	3	4	5	6	7	8	6	7	8	9	10	11	12
13	14	15	16	17	18	19	10	11	12	13	14	15	16	9	10	11	12	13	14	15	13	14	15	16	17	18	19
20	21	22	23	24	25	26	17	18	19	20	21	22	23	16	17	18	19	20	21	22	20	21	22	23	24	25	26
27	28	29	30	31			24	25	26	27	28	29	23	24	25	26	27	28	29	27	28	29	30				
														30	31												

MAY							JUNE							JULY							AUGUST						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23
25	26	27	28	29	30	31	29	30						27	28	29	30	31			24	25	26	27	28	29	30
																					31						

SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER								
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa		
		1	2	3	4	5	6				1	2	3	4							1			1	2	3	4	5	6
7	8	9	10	11	12	13	5	6	7	8	9	10	11	2	3	4	5	6	7	8	7	8	9	10	11	12	13		
14	15	16	17	18	19	20	12	13	14	15	16	17	18	9	10	11	12	13	14	15	14	15	16	17	18	19	20		
21	22	23	24	25	26	27	19	20	21	22	23	24	25	16	17	18	19	20	21	22	21	22	23	24	25	26	27		
28	29	30					26	27	28	29	30	31	23	24	25	26	27	28	29	28	29	30	31						
														30															

2009 CALENDAR

JANUARY							FEBRUARY							MARCH							APRIL						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3	1	2	3	4	5	6	7	1	2	3	4	5	6	7				1	2	3	4
4	5	6	7	8	9	10	8	9	10	11	12	13	14	8	9	10	11	12	13	14	5	6	7	8	9	10	11
11	12	13	14	15	16	17	15	16	17	18	19	20	21	15	16	17	18	19	20	21	12	13	14	15	16	17	18
18	19	20	21	22	23	24	22	23	24	25	26	27	28	22	23	24	25	26	27	28	19	20	21	22	23	24	25
25	26	27	28	29	30	31								29	30	31					26	27	28	29	30		

MAY							JUNE							JULY							AUGUST						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2	1	2	3	4	5	6	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11	2	3	4	5	6	7	8
10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18	9	10	11	12	13	14	15
17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25	16	17	18	19	20	21	22
24	25	26	27	28	29	30	28	29	30					26	27	28	29	30	31	23	24	25	26	27	28	29	
31																					30	31					

SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5				1	2	3	1	2	3	4	5	6	7			1	2	3	4	5	
6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12
13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19
20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26
27	28	29	30				25	26	27	28	29	30	31	29	30						27	28	29	30	31		

2010 CALENDAR

JANUARY							FEBRUARY							MARCH							APRIL						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2	1	2	3	4	5	6	1	2	3	4	5	6				1	2	3	4		
3	4	5	6	7	8	9	7	8	9	10	11	12	13	7	8	9	10	11	12	13	4	5	6	7	8	9	10
10	11	12	13	14	15	16	14	15	16	17	18	19	20	14	15	16	17	18	19	20	11	12	13	14	15	16	17
17	18	19	20	21	22	23	21	22	23	24	25	26	27	21	22	23	24	25	26	27	18	19	20	21	22	23	24
24	25	26	27	28	29	30	28							28	29	30	31				25	26	27	28	29	30	
31																											

MAY							JUNE							JULY							AUGUST						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2	1	2	3	4	5	6	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
2	3	4	5	6	7	8	6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14
9	10	11	12	13	14	15	13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21
16	17	18	19	20	21	22	20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28
23	24	25	26	27	28	29	27	28	29	30				25	26	27	28	29	30	31	29	30	31				
30	31																										

SEPTEMBER							OCTOBER							NOVEMBER							DECEMBER						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5				1	2	3	1	2	3	4	5	6			1	2	3	4	5		
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25
26	27	28	29	30			24	25	26	27	28	29	30	28	29	30					26	27	28	29	30	31	

WEEK NUMBER FOR COMMERCIAL GROWERS

2008																							
Week	JANUARY							Week	May							Week	SEPTEMBER						
1	Su	Mo	Tu	We	Th	Fr	Sa	19	Su	Mo	Tu	We	Th	Fr	Sa	37	Su	Mo	Tu	We	Th	Fr	Sa
2			1	2	3	4	5	20	4	5	6	7	8	9	10	38	7	8	9	10	11	12	13
3	6	7	8	9	10	11	12	21	11	12	13	14	15	16	17	39	14	15	16	17	18	19	20
4	13	14	15	16	17	18	19	22	18	19	20	21	22	23	24	40	21	22	23	24	25	26	27
5	20	21	22	23	24	25	26	23	25	26	27	28	29	30	31		28	29	30				
	27	28	29	30	31																		
Week	FEBRUARY							Week	JUNE							Week	OCTOBER						
6	Su	Mo	Tu	We	Th	Fr	Sa	24	Su	Mo	Tu	We	Th	Fr	Sa	41	Su	Mo	Tu	We	Th	Fr	Sa
7				1	2	3	4	25	1	2	3	4	5	6	7	42				1	2	3	4
8	3	4	5	6	7	8	9	26	8	9	10	11	12	13	14	43	5	6	7	8	9	10	11
9	10	11	12	13	14	15	16	27	15	16	17	18	19	20	21	44	12	13	14	15	16	17	18
	17	18	19	20	21	22	23		22	23	24	25	26	27	28		19	20	21	22	23	24	25
	24	25	26	27	28	29			29	30							26	27	28	29	30	31	
Week	MARCH							Week	JULY							Week	NOVEMBER						
10	Su	Mo	Tu	We	Th	Fr	Sa	28	Su	Mo	Tu	We	Th	Fr	Sa	45	Su	Mo	Tu	We	Th	Fr	Sa
11							1	29	6	7	8	9	10	11	12	46	2	3	4	5	6	7	8
12	2	3	4	5	6	7	8	30	13	14	15	16	17	18	19	47	9	10	11	12	13	14	15
13	9	10	11	12	13	14	15	31	20	21	22	23	24	25	26	48	16	17	18	19	20	21	22
14	16	17	18	19	20	21	22		27	28	29	30	31			49	23	24	25	26	27	28	29
	23	24	25	26	27	28	29										30						
	30	31																					
Week	APRIL							Week	AUGUST							Week	DECEMBER						
15	Su	Mo	Tu	We	Th	Fr	Sa	32	Su	Mo	Tu	We	Th	Fr	Sa	50	Su	Mo	Tu	We	Th	Fr	Sa
16			1	2	3	4	5	33	3	4	5	6	7	8	9	51		1	2	3	4	5	6
17	6	7	8	9	10	11	12	34	10	11	12	13	14	15	16	52	7	8	9	10	11	12	13
18	13	14	15	16	17	18	19	35	17	18	19	20	21	22	23	1	14	15	16	17	18	19	20
	20	21	22	23	24	25	26	36	24	25	26	27	28	29	30		21	22	23	24	25	26	27
	27	28	29	30					31								28	29	30	31			

2009																							
Week	JANUARY							Week	May							Week	SEPTEMBER						
1	Su	Mo	Tu	We	Th	Fr	Sa	19	Su	Mo	Tu	We	Th	Fr	Sa	37	Su	Mo	Tu	We	Th	Fr	Sa
2					1	2	3	20	3	4	5	6	7	8	9	38	6	7	8	9	10	11	12
3	4	5	6	7	8	9	10	21	10	11	12	13	14	15	16	39	13	14	15	16	17	18	19
4	11	12	13	14	15	16	17	22	17	18	19	20	21	22	23	40	20	21	22	23	24	25	26
5	18	19	20	21	22	23	24	23	24	25	26	27	28	29	30		27	28	29	30			
	25	26	27	28	29	30	31		31														
Week	FEBRUARY							Week	JUNE							Week	OCTOBER						
6	Su	Mo	Tu	We	Th	Fr	Sa	24	Su	Mo	Tu	We	Th	Fr	Sa	41	Su	Mo	Tu	We	Th	Fr	Sa
7							1	25	1	2	3	4	5	6	42					1	2	3	
8	1	2	3	4	5	6	7	26	7	8	9	10	11	12	13	43	4	5	6	7	8	9	10
9	8	9	10	11	12	13	14	27	14	15	16	17	18	19	20	44	11	12	13	14	15	16	17
	15	16	17	18	19	20	21		21	22	23	24	25	26	27		18	19	20	21	22	23	24
	22	23	24	25	26	27	28		28	29	30						25	26	27	28	29	30	31
Week	MARCH							Week	JULY							Week	NOVEMBER						
10	Su	Mo	Tu	We	Th	Fr	Sa	28	Su	Mo	Tu	We	Th	Fr	Sa	45	Su	Mo	Tu	We	Th	Fr	Sa
11							1	29	5	6	7	8	9	10	11	46	1	2	3	4	5	6	7
12	1	2	3	4	5	6	7	30	12	13	14	15	16	17	18	47	8	9	10	11	12	13	14
13	8	9	10	11	12	13	14	31	19	20	21	22	23	24	25	48	15	16	17	18	19	20	21
14	15	16	17	18	19	20	21		26	27	28	29	30	31		49	22	23	24	25	26	27	28
	22	23	24	25	26	27	28										29	30					
	29	30	31																				
Week	APRIL							Week	AUGUST							Week	DECEMBER						
15	Su	Mo	Tu	We	Th	Fr	Sa	32	Su	Mo	Tu	We	Th	Fr	Sa	50	Su	Mo	Tu	We	Th	Fr	Sa
16			1	2	3	4	5	33	2	3	4	5	6	7	8	51		1	2	3	4	5	6
17	5	6	7	8	9	10	11	34	9	10	11	12	13	14	15	52	6	7	8	9	10	11	12
18	12	13	14	15	16	17	18	35	16	17	18	19	20	21	22	1	13	14	15	16	17	18	19
	19	20	21	22	23	24	25	36	23	24	25	26	27	28	29		20	21	22	23	24	25	26
	26	27	28	29	30				30	31							27	28	29	30	31		

HOLIDAY CALENDAR - 2008 THROUGH 2009

Holiday	2008 Leap Year		2009	
	Date	Day	Date	Day
New Year's Day	January 1	Tuesday	January 1	Thursday
Martin L. King, Jr. Day	January 21	Monday	January 19	Monday
Inauguration Day			January 20	Tuesday
Groundhog Day	February 2	Saturday	February 2	Monday
Chinese New Year	February 7	Thursday	January 26	Monday
Lincoln's Birthday	February 12	Tuesday	February 12	Thursday
Valentine's Day	February 14	Thursday	February 14	Saturday
President's Day	February 18	Monday	February 16	Monday
Washington's Birthday	February 22	Saturday	February 22	Sunday
Flag Day Mexico	February 24	Friday	February 24	Tuesday
Mardi Gras Fat Tuesday	February 5	Tuesday	February 24	Tuesday
Ash Wednesday	February 6	Wednesday	February 25	Wednesday
Quatro de Marzo	March 4	Tuesday	March 4	Wednesday
Daylight Savings Time Begins	March 9	Sunday	March 8	Sunday
St. Patrick's Day	March 17	Monday	March 17	Tuesday
Spring Equinox	March 20	Thursday	March 20	Friday
Beneto Juarez Birthday Mexico	March 21	Friday	March 21	Saturday
April Fool's Day	April 1	Tuesday	April 1	Wednesday
Palm Sunday	March 16	Sunday	April 5	Sunday
Passover	April 19	Saturday	April 9	Thursday
Good Friday	March 21	Friday	April 10	Friday
Easter Sunday	March 23	Sunday	April 12	Sunday
Administrative Professionals' Day	April 23	Wednesday	April 22	Wednesday
Eastern Orthodox Easter	April 27	Sunday	April 19	Sunday
National Day of Prayer	May 1	Thursday	May 7	Thursday
Kentucky Derby Day	May 3	Saturday	May 2	Saturday
NE Ohio Louie Run	May 4	Sunday	May 3	Sunday
Cinco de Mayo	May 5	Monday	May 5	Tuesday
Mother's Day	May 11	Sunday	May 10	Sunday
Armed Forces Day	May 17	Saturday	May 17	Saturday
Victoria Day Canada	May 17	Sunday	May 17	Saturday
Memorial Day	May 26	Monday	May 25	Monday
Flag Day/Army Day	June 14	Saturday	June 14	Sunday
Juneteenth	June 19	Thursday	June 19	Friday
Father's Day	June 15	Sunday	June 21	Sunday
Summer Solstice	June 21	Saturday	June 21	Sunday
Canada Day	July 1	Tuesday	July 1	Wednesday
Independence Day	July 4	Friday	July 4	Saturday
Parents Day	July 27	Sunday	July 26	Sunday
Air Force Day	August 1	Friday	August 1	Saturday
Friendship Day	August 3	Sunday	August 2	Sunday
Coast Guard Day	August 4	Monday	August 4	Tuesday
Civic Holiday Canada	August 4	Monday	August 3	Monday
Labor Day	September 1	Monday	September 7	Monday
Ramadan begins	September 1	Monday	August 21	Friday
Grandparents Day	September 7	Sunday	September 13	Sunday
Patriot Day	September 11	Thursday	September 11	Friday
Independence Day Mexico	September 16	Tuesday	September 16	Wednesday
Constitution/Citizenship Day	September 17	Wednesday	September 17	Thursday
Rosh Hashanah begins	September 29	Monday	September 18	Friday
Fall Equinox	September 22	Monday	September 22	Tuesday
Thanksgiving Canada	October 8	Wednesday	October 8	Thursday
Yom Kippur	October 9	Thursday	October 2	Sunday
Columbus Day	October 13	Monday	October 12	Monday
Navy Day	October 13	Monday	October 13	Tuesday
Bosses' Day	October 16	Thursday	October 16	Friday
Sweetest Day	October 18	Saturday	October 17	Saturday
Mother-In-Law's Day	October 26	Sunday	October 25	Sunday
Halloween	October 31	Friday	October 31	Saturday
Daylight Savings Time Ends	November 2	Sunday	November 1	Sunday
Day of the Dead	November 2	Sunday	November 1	Sunday
Election Day	November 4	Tuesday	November 3	Tuesday
Marine Corps Day	November 10	Monday	November 10	Tuesday
Veteran's Day	November 11	Tuesday	November 11	Wednesday
Thanksgiving Day	November 27	Thursday	November 26	Thursday
Pearl Harbor Day	December 7	Sunday	December 7	Monday
Festivus	December 15	Monday	December 14	Monday
Christmas Eve	December 24	Wednesday	December 24	Thursday
Hanukkah begins	December 21	Saturday	December 11	Saturday
Winter Solstice	December 21	Sunday	December 21	Monday
Christmas Day	December 25	Thursday	December 25	Friday
Kwanzaa begins	December 26	Friday	December 26	Saturday
New Year's Eve	December 31	Wednesday	December 31	Thursday

WEIGHTS AND MEASUREMENTS

Fahrenheit to Celsius Conversion Chart

°F	°C
100	37.8
98	36.7
96	35.6
94	34.4
92	33.3
90	32.2
88	31.1
86	30.0
84	28.9
82	27.8
80	26.7
78	25.6
76	24.4
74	23.3
72	22.2
70	21.1
68	20.0
66	18.9
64	17.8
62	16.7
60	15.6
58	14.4
56	13.3
54	12.2
52	11.1
50	10.0
48	8.9
46	7.8
44	6.7
42	5.6
40	4.4
38	3.3
36	2.2
34	1.1
32	0.0
30	-1.1
28	-2.2
26	-3.3
24	-4.4
22	-5.6
20	-6.7
18	-7.8
16	-8.9
14	-10.0
12	-11.1
10	-12.2
8	-13.3
6	-14.4
4	-15.6
2	-16.7
0	-17.8
-2	-18.9
-4	-20.0
-6	-21.1
-8	-22.2
-10	-23.3

Metric Conversions

To Convert From:	To Obtain:	Multiply by:
Centimeters	Feet	0.03281
Centimeters	Inches	0.39370
Meters	Feet	3.28100
Meters	Yard	1.09400
Feet	Meters	0.30480
Square Meters	Square Feet	10.76380
Square Meters	Square yards	1.19600
Milliliters	Ounces (fluid)	0.03381
Gallons	Liters	3.78530
Liters	Ounces (fluid)	33.81400
Liters	Quarts	1.05670
Liters	Gallons	0.26420
Kilograms	Pounds	2.20462
Ounces	Grams	28.34950
Tablespoons (dry)	Ounces	0.33330
Hectares	Acres	2.47100

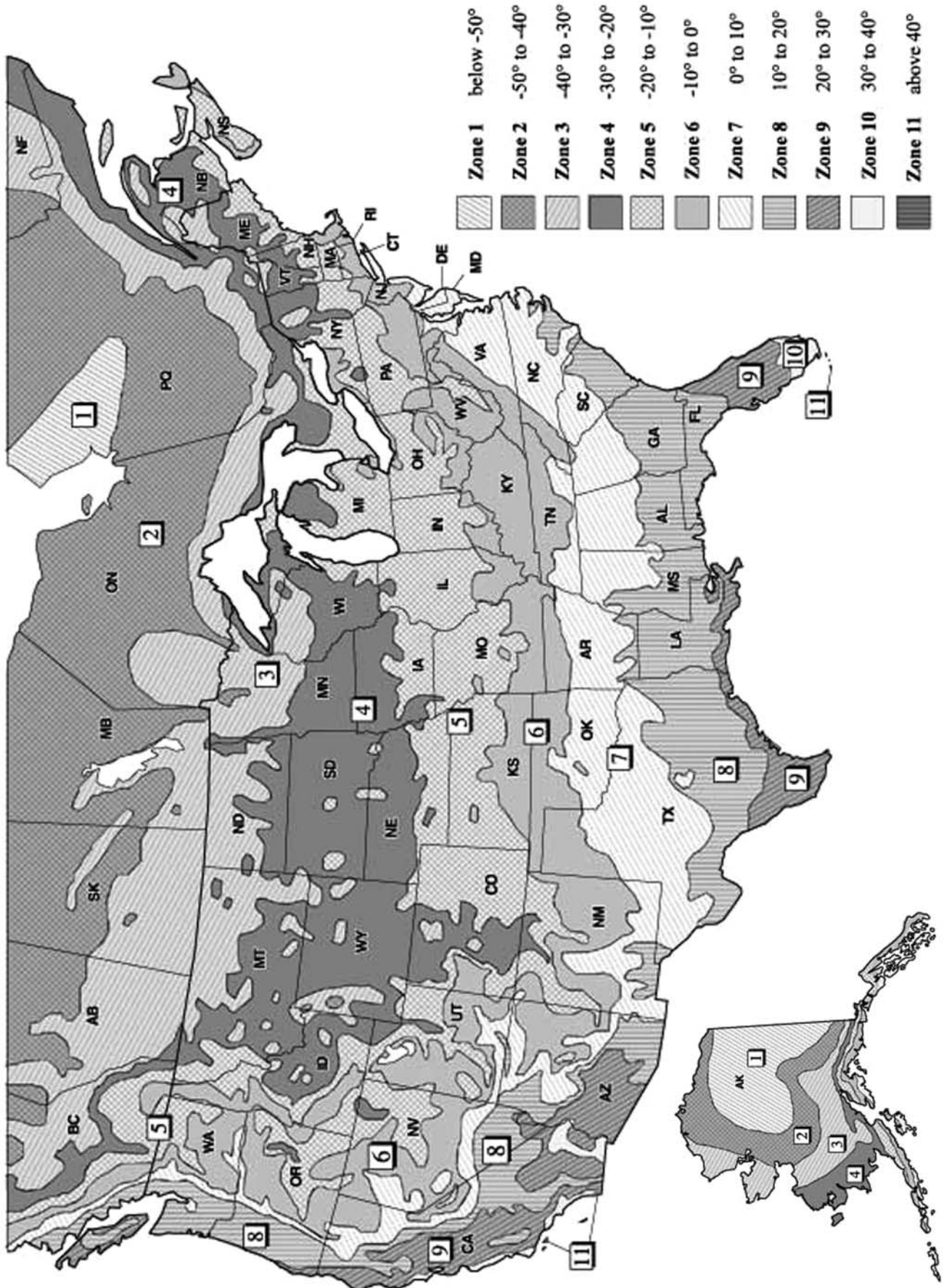
Liquid Conversions

1 Pint/100 Gallons	is equal to 1 tsp./gallon
1 Quart/100 Gallons	is equal to 2 tsp./gallon
1 Teaspoon	is equal to 1/3 tsp. or 1/6 oz.
1 Tablespoon	is equal to 3 tsp. or 1/2 oz.
1 Fluid Ounces	is equal to 2 Tbsp. or 6 tsp.
1 Cup	is equal to 8 oz. or 1/2 pint or 16 Tbsp. or 48 tsp.
1 Quart	is equal to 32 oz. or 4 cups or 2 pints or 64 Tbsp.
1 Gallon	is equal to 4 quarts or 8 pints or 16 cups or 128 oz.

Approx. Rates of Application

Amount	To Area:	Equals, Equiv. Of
1 Ounce	Sq. Foot	2722 lbs. Per acre
1 Ounce	Sq. Yard	302.5 lbs. Per acre
1 Ounce	100 Sq. Feet	27.2 lbs. Per acre
1 Pound	100 Sq. Feet	435.6 lbs. Per acre
1 Pound	1000 Sq. Feet	43.6 lbs. Per acre
1 Pound	Acre	1/3 oz. Per 1000 sq. ft.
5 Gallons	Acre	1 pint Per 1000 sq. ft.
100 Gallons	Acre	2.5 gallons Per 1000 sq. ft.
100 Gallons	Acre	1 qt. Per 100 sq. ft.
500 Pounds	Acre	2.5 lbs. Per 1000 sq. ft.

USDA PLANT HARDINESS ZONE MAP



CROP TIMES FOR GARDEN LEADER ANNUALS

To find total crop time, add the weeks needed for each stage of production

Days for seed germination is listed for reference and is already included in the crop time required to finish the smallest production size listed for the crop.

Start with the product size you begin with and add the weeks, moving to the right till you reach the size you wish to finish.

EXAMPLE: AGERATUM

If you start with seeds and want to finish in large pots: Total Crop Time is 6 weeks to grow to a 512 size + 1 week to reach a 288 size + one week for the 144 + 1 week for the 72 + 1 week for a cell pack + 2 weeks for a 4" to 5" pot plus 3 more weeks for a large pot = 15 total Weeks

If you start with a 512 plug tray and want to finish in cell packs then add: 1 week to reach the 288 size + 1 wk for the 144 + 1 week for the 72 + 1 week for the Cell Pack = 4 Total Weeks

ADVANCE ORDERING PLUGS: Allow an additional 10 to 12 weeks of production and order processing time to assure you get the varieties you want on the delivery date you need. Some crops may require longer.

NOTE: Some crops and varieties are not available or not recommended to be started the smaller plug sizes and others will not be finished in large pots or baskets, for those the weeks for these sizes are not used in calculation total crop time.

CROP	SEED GERMINATION REQUIREMENTS Temperature is listed in Fahrenheit and is the soil temperature.	DAYS FOR SEED GERMINATION	WEEKS						TOTAL CROP TIME FROM SEED TO LARGE POT OR BASKET	
			512 PLUG	288 PLUG	144 PLUG	72 PLUG	606 CELL PACK	SMALL POT		LARGE POT OR BASKET
Ageratum	80 to 85 F, uncovered	9 - 10	6	1	1	1	1	2	3	15
Alyssum, Cheers Series	78 to 80 F, uncovered	8		4	1	1	1	2	3	12
Anagallis	72 F, uncovered	10		5	1	1	2	3	3	15
Asarina	72 F, covered with vermiculite	12 - 14		6	1	1	2	3	4	17
Aster	72 F, uncovered	10	6	1	1	1	1	2	2	14
Balsam	70 F, uncovered	10	6	1	1	1	1	2	3	15
Begonia Fiberous, Hot Tip, Chocolates, HiGro Series	75 F, uncovered exposed to light	14 - 21	9	2	2	2	2	2	4	22
Begonia Tuberosus, Angel, Eyepopper Series	75 to 78 F, uncovered exposed to light	14 - 28	11	2	2	2	2	2	4	24
Bidens	70 F, uncovered	10 - 12	6	1	1	1	1	2	2	14
Browallia	70 F, uncovered	15	7	1	2	1	1	3	4	19
Calandrinia	75 F, uncovered	12	6	1	1	1	1	3	5	18
Calceolaria	72 F, uncovered	21 - 28	10	1	1	1	1	8		21
Carnation	70 F, lightly covered with vermiculite	14 - 20	6	1	1	1	1	6		16
Campanula	60 to 65 F, uncovered	21 - 28	8	2	2	1	1	4		18
Celosia Cristata, Colours Series	78 F, uncovered	7 - 10	5	1	1	1	1	2	2	13
Celosia Plumosa, Dance, HiGro Series	78 F, uncovered	7 - 10	5	1	1	1	1	3	3	15
Centaurea	62 F, cover with media	7 - 14	6	1	1	1	1	2	4	16
Cineraria	70 F, uncovered	10	6	1	2	1	1	6	2	19
Coleus, Rainbow, Jazz, HiGro Series	75 F, uncovered	12 - 14	5	1	1	1	1	2	3	14
Coreopsis	72 F, uncovered	21	6	1	2	1	2	4	4	20
Cosmos Bipinnatus	72 F, uncovered	10		5	1	1	1	3	4	15
Dahlia, Cactus, Décor, Caruso, Opera, Series	80 F, cover with media	10		6	1	1	1	4	4	17
Dianthus, Award, HiGro, Samdae, Prize Series	68 F, cover lightly with vermiculite	10	6	1	1	1	1	3	4	17
Dimorphotheca	70 F, cover lightly with vermiculite	14	6	1	1	1	1	3	4	17
Dusty Miller, Snowstorm	74 F, uncovered	12	6	1	2	1	1	4	4	19
Eccremocarpus	60 to 70 F, uncovered	21 - 28		7	2	2	2	4	3	19
Gazania	78 F, cover with media	12	6	1	1	2	2	2	4	18
Geranium Ivy, Cascade Beauty Series	70 to 75 F, cover lightly with media	7 - 10		6	2	2	2	3	5	20
Geranium Zonal, LoGro, Saturn, New Wave Series	70 to 75 F, cover lightly with media	7 - 10		6	2	2	2	3	3	18
Gerbera	78 F, cover with media keep in bright light	10		6	1	1	1	2	2	13
Gloxinia	68 F, uncovered	14 - 28	8	1	1	1	1	6		18

CROP	SEED GERMINATION REQUIREMENTS Temperature is listed in Fahrenheit and is the soil temperature.	DAYS FOR SEED GERMINATION	WEEKS						TOTAL CROP TIME FROM SEED TO LARGE POT OR BASKET		
			512 PLUG	288 PLUG	144 PLUG	72 PLUG	606 CELL PACK	SMALL POT		LARGE POT OR BASKET	
Gomphrena, LoGro, HiGro Series	70 F, cover lightly with vermiculite	20	6	1	1	1	1	1	4	4	18
Helianthus	72 F, cover completely with media	4						4	3	2	9
Impatiens, Cascade Beauty, Sun & Shade, LoGro Series	71-77 F, uncovered, RH near 100%, 8 hours of light under 1500 foot-candles, pH 6.0-6.8 never lower, Media EC (salts) less than 0.75 mmhos/cm.	14	5	1	1	1	1	1	2	2	13
Impatiens, Double	Same as Impatiens	15	6	1	1	1	1	1	3	3	16
MariGold African, HiGro, American Indian, LoGro Series	75 F, cover completely with Media	10	4	1	1	1	1	1	2	2	12
MariGold Amerifrench	75 F, cover completely with Media	10	4	1	1	1	1	1	2	2	12
MariGold French, Girls, LoGro Series	75 F, cover completely with Media	10	4	1	1	1	1	1	2	2	12
Melampodium	68 F, uncovered	10	6	1	1	1	1	1	2	2	14
Mina	72 F, cover completely with media	7 - 14						6	4	6	16
Mirabilis	70 F, cover lightly with vermiculite	14			5	1	1	1	3	3	13
Nolana	70 F, uncovered	10	6	1	1	1	1	1	2	2	14
Pansy, Character, Freedom, Massive, Giants Series	60 F, lightly cover with vermiculite	10	6	1	1	1	1	1	2	3	15
Pansy Trailing	61 F, lightly cover with vermiculite	10	6	1	1	1	1	1	3	4	17
Petunia, Candyrops, Freedom, LoGro Series	72 F, uncovered	7	6	1	1	1	1	2	2	2	15
Petunia Double	74 F, uncovered	7	6	1	1	1	1	2	2	2	15
Petunia Trailing, LoGro Series	78 F, uncovered	7	7	1	1	1	1	2	3	4	18
Phlox	60 F, lightly cover with vermiculite	14 - 21	6	1	1	1	1	1	2	2	14
Poppy California	55 F, lightly covered with vermiculite	14	6	1	1	1	1	1	4	4	18
Portulaca	72 F, uncovered	12	6	1	1	1	1	1	4	4	18
Salvia Fahrenheit	85 F, 2 days then 75 F, uncovered	14 - 21	6	1	1	1	1	1	4	4	18
Salvia Firecracker	72 F, lightly covered with vermiculite	14 - 21	6	1	1	1	1	1	4	2	16
Salvia HiGro	72 F, lightly covered with vermiculite	14 - 21	6	1	1	1	1	1	4	4	18
Sanvitalia	75 F, uncovered	10	6	1	1	1	1	1	4	4	18
Silene	68 F, uncovered	14	8	1	1	1	2	1	4	4	21
Snapdragon Silks	65 to 70 F, uncovered	7	6	1	1	1	1	1	2	4	16
Snapdragon Longshot	65 to 70 F, uncovered	7	6	1	1	1	1	1	3	4	17
Snapdragon Field Mix	65 to 70 F, uncovered	7	6	1	1	1	1	1	4	5	19
Statice	70 to 72 F, lightly covered with vermiculite	14 - 21	6	1	1	1	1	1	2	2	14
Sweet Pea	65 F, completely cover with media	14 - 21	6	1	1	1	1	6	2	2	10
Torenia	70 F, uncovered	7 - 14	6	1	1	1	1	1	4	4	18
Trachelium	70 F, uncovered	15	10	2	2	1	1	1	3	2	21
Verbena Rigida	68 F, lightly covered with vermiculite	21	6	1	1	1	1	1	4	4	18
Verbena Trailing	34 F, 7 days then 70 F, lightly covered with vermiculite	14	7	1	1	1	1	1	4	4	19
Verbena Love	70 F, uncovered, avoid overwatering seed flats	9	5	1	1	1	1	1	4	4	17
Vine Cascade Beauty	75 F, completely covered with vermiculite	14 - 21	6	1	1	1	1	1	4	6	20
Vine Sunsplash	70 F, completely covered with vermiculite	14 - 21	6	1	1	1	1	1	3	4	17
Viola	34 F, 7 days then 70 F, lightly covered with vermiculite	21	6	1	1	1	1	1	4	4	18
Wahlenbergia	65 to 70 F, uncovered	7 - 14	7	1	1	1	1	1	4	6	21
Zinnia Cascade Beauty	75 to 80 F, completely covered with media	5 - 7	4	1	1	1	1	2	3	4	16
Zinnia LoGro, HiGro, Ice Cream	75 to 80 F, completely covered with media	5 - 7	0	5	1	1	1	1	4	4	16
Zinnia Phoenix	75 to 80 F, completely covered with media	5 - 7	4	1	1	1	1	2	3	4	16

CROP TIMES FOR GARDEN LEADER CUTTINGS AND LINERS

To find total crop time, add the weeks needed for each stage of production

EXAMPLE: BACOPA GARDEN LEADER SCOPIA

If you start with Unrooted Cuttings and want to finish in Baskets, Total Crop Time is 4 weeks for rooting + 6 weeks for a 4" + 6 weeks to a Basket = 16 Total Weeks

If you start with Rooted Liners and want to finish in Baskets, Total Crop Time is 6 weeks for a 4" + 6 weeks to a Basket = 12 Total Weeks

ADVANCE ORDERING OF YOUNG PLANTS: Allow an additional 10 to 12 weeks of production and order processing time to assure you get the varieties you want on the delivery date you need.

NOTE: *Some crops and varieties are available as liners only, on these crop time begins with the rooted liner.

** Calculated finish time for large pots and baskets assuming multiple liners are used per container.

CROP	SERIES	VARIETY	WEEKS			
			ROOTING TIME FROM UNROOTED CUTTING TO LINER	GROWING TIME FROM LINER TO 4" OR 5" POT	GROWING TIME FROM 4" OR 5" POT TO LARGE POT OR BASKET *	TOTAL GROWING TIME **
Abutilon	Garden Leader	Apricot	5	6	8	19
Acalypha	Garden Leader	Firetail	5	6	6	17
Agastache	Garden Leader	Apricot	N/A	6	5	11
Ageratum	HiGro	Blue	N/A	6	5	11
Ajuga	Garden Leader	Purple Shine	4	6	5	15
Alternanthera	Garden Leader	Saffron	4	8	8	20
Alternanthera	Garden Leader	Purple Knight	N/A	6	6	12
Alternanthera	Garden Leader	Royal Tapestry	N/A	6	6	12
Angelonia	Garden Leader	Blue	4	7	6	17
Angelonia	Garden Leader	Lavender	N/A	7	6	13
Angelonia	Garden Leader	Pink	N/A	7	6	13
Angelonia	Garden Leader	White	N/A	7	6	13
Antirrhinum (Snap.)	LoGro	Fruit Salad Series	4	5	5	14
Argeranthemum	Angelic	Dark Pink	4	6	5	15
Argeranthemum	Angelic	Neptune White	4	6	5	15
Argeranthemum	Angelic	Pink Delight	4	6	5	15
Argeranthemum	Angelic	Reflection Yellow	4	6	5	15
Argeranthemum	Garden Leader	Butterfly Yellow	4	6	5	15
Asparagus	Garden Leader	Sprengeri	N/A	10	6	16
Asteriscus	Garden Leader	Golden Dollar	4	6	6	16
Bacopa	Scopia	Series	4	6	6	16
Bacopa	Garden Leader	Blue Showers	4	6	6	16
Bacopa	Garden Leader	Lavender Showers	4	6	6	16
Bacopa	Garden Leader	Cascade Beauty Blue	N/A	6	5	11
Bacopa	Garden Leader	Cascade Beauty White	N/A	6	5	11
Begonia	Garden Leader	Dragon Wing Red	N/A	6	5	11
Bidens	HiGro	Inspiration Yellow	N/A	6	5	11
Bidens	LoGro	Yellow Empire	4	6	6	16
Brachycome	Garden Leader	Mauve Delight	4	6	6	16
Bracteantha	Helica	Bicolor Lemon	4	6	5	15
Bracteantha	Helica	Bicolor Orange	4	6	5	15
Bracteantha	Helica	Bicolor Plum	4	6	5	15
Bracteantha	Helica	Yellow Queen	4	6	5	15
Calibrachoa	LoGro	ColorburstPro Series	4	6	5	15
Calibrachoa	Noa	Series	4	6	5	15
Calitunia	Garden Leader	Purple	4	6	6	16
Capsicum	Garden Leader	Black Pearl	N/A	8	6	14
Capsicum	Garden Leader	Blue Chilis	N/A	8	6	14
Coleus	Garden Leader	Dark Raider	3	5	5	13
Coleus	Garden Leader	Ducksfoot	3	5	4	12
Coleus	Garden Leader	Hay Ride	3	5	4	12
Coleus	Garden Leader	Hot Pink	3	5	4	12
Coleus	Garden Leader	Lime Red	3	5	5	13
Coleus	Garden Leader	Mango	3	5	4	12
Coleus	Garden Leader	Righteous Radish	3	5	4	12
Coleus	Garden Leader	Scarlet Poncho	3	5	4	12
Coleus	Garden Leader	Sunrise	3	5	4	12
Coleus	Garden Leader	Black Dragon	N/A	6	5	11
Coleus	Garden Leader	Kong Mosaic	N/A	6	4	10
Coleus	Garden Leader	Velvet Poncho	N/A	6	4	10

CROP	SERIES	VARIETY	WEEKS			
			ROOTING TIME FROM UNROOTED CUTTING TO LINER	GROWING TIME FROM LINER TO 4" OR 5" POT	GROWING TIME FROM 4" OR 5" POT TO LARGE POT OR BASKET *	TOTAL GROWING TIME **
Coleus	Garden Leader	Lemon Lime	3	5	5	13
Coreopsis	Garden Leader	Sun Pops	N/A	7	7	14
Cuphea	Garden Leader	Lavender	6	6	6	18
Cuphea	Garden Leader	Matchstick	N/A	7	7	14
Dahlia	HiGro	Series	4	8	4	16
Dahlia	LoGro	Series	4	8	5	17
Diascia	Garden Leader	Antique Red	4	6	6	16
Diascia	Garden Leader	Blush	4	6	6	16
Diascia	Garden Leader	Pink	4	6	6	16
Diascia	Garden Leader	Apricot	N/A	6	6	12
Diascia	Garden Leader	Lavender	N/A	6	6	12
Diascia	Garden Leader	Salmon	N/A	6	6	12
Dichondra	Garden Leader	Silver Falls	N/A	8	6	14
Ecklonis	Garden Leader	Lavender	N/A	8	6	14
Ecklonis	Garden Leader	Passion Mix	N/A	8	6	14
Ecklonis	Garden Leader	White	N/A	8	6	14
Eucalyptus	Garden Leader	Silverdrop	N/A	6	6	12
Euphorbia	Garden Leader	Blue Silver	N/A	6	6	12
Euryops	Garden Leader	Yellow	4	6	6	16
Evolvulus	Garden Leader	Blues	5	6	6	17
Fuchsia	Garden Leader	Gardenmeister	5	6	6	17
Gaura	Garden Leader	The Pink	4	5	5	14
Gaura	Garden Leader	The Bride	N/A	6	5	11
Geranium	Patriot	Series	4	8	4	16
Geranium Ivy	Cascade Beauty	Series	N/A	8	6	14
Gomphrena	Garden Leader	Purple Gomp	N/A	6	5	11
Grass	Garden Leader	Avena French Black	N/A	5	7	12
Grass	Garden Leader	Carex Coco Sedge	N/A	5	8	13
Grass	Garden Leader	Carex Fire Grass	N/A	6	8	14
Grass	Garden Leader	Carex Paintbrush	N/A	6	8	14
Grass	Garden Leader	Eragrostis Wind Grass	N/A	6	7	13
Grass	Garden Leader	Isolepis MagicWands	N/A	5	6	11
Grass	Garden Leader	Juncus Blue Arrows	N/A	5	7	12
Grass	Garden Leader	Juncus Javelin	N/A	6	8	14
Grass	Garden Leader	Juncus Screw Grass	N/A	5	7	12
Grass	Garden Leader	Stipa Odessa	N/A	5	6	11
Grass	Garden Leader	Stipa Pony Tails	N/A	5	6	11
Grass	Garden Leader	Stipa Sirocco	N/A	5	6	11
Helichrysum	Garden Leader	Licorice	5	6	6	17
Helichrysum	Garden Leader	Silver Mist	N/A	8	5	13
Helichrysum	Garden Leader	Moes Silver	4	6	6	16
Helinium	Garden Leader	Dakota Gold	N/A	5	5	10
Hemigraphis	Garden Leader	Hologram	4	5	5	14
Hibiscus	HiGro	Big Red	N/A	5	5	10
Hypoestes	Garden Leader	Pink Spots	N/A	5	5	10
Hypoestes	Garden Leader	White Spots	N/A	5	5	10
Impatiens Double	LoGro	Tioga Compact Series	4	4	6	14
Impatiens Double	Garden Leader	Tioga Series	4	4	5	13
Ipomea	Garden Leader	Autumn bronze	4	3	5	12
Ipomea	Garden Leader	Blackie	4	3	5	12
Ipomea	Garden Leader	Marguerite	4	3	5	12
Ipomea	Garden Leader	Tricolor	4	4	6	14
Iresine	Garden Leader	Bloodleaf	4	5	6	15
Iresine	Garden Leader	Purple Cascade	N/A	5	6	11
Lamiastrum	Garden Leader	Silver Spots	4	5	5	14
Lamium	Garden Leader	White	4	5	5	14
Lantana	Garden Leader	Series	5	7	5	17
Lavandula	Garden Leader	Fragrant Butterflies	N/A	8	7	15
Lobelia	Anabel	Blue	4	6	6	16
Lobelia	Anabel	Blue Romance	4	6	6	16
Lobelia	Anabel	White	4	6	6	16
Lysimachia	Garden Leader	Gold nomenclaria	5	6	6	17
Lysimachia	Garden Leader	Variogated	5	6	6	17
Nemesia	Garden Leader	Lavender	N/A	7	5	12

CROP TIMES FOR GARDEN LEADER CUTTINGS AND LINERS Continued

CROP	SERIES	VARIETY	WEEKS			
			ROOTING TIME FROM UNROOTED CUTTING TO LINER	GROWING TIME FROM LINER TO 4" OR 5" POT	GROWING TIME FROM 4" OR 5" POT TO LARGE POT OR BASKET *	TOTAL GROWING TIME **
Nemesia	Garden Leader	White	N/A	7	5	12
Nemesia	Nemesis	Series	4	6	6	16
New Guinea	Harmony	Series	4	7	5	16
Oenothera	Garden Leader	Glowing Magenta	N/A	7	6	13
Oregano	Garden Leader	Goldie	5	8	7	20
Osteospermum	Hotspots	Series	4	6	6	16
Osteospermum	Side Show	Series	4	6	6	16
Pansy	Cascade Beauty	Purple Rain	N/A	5	7	12
Pansy	Cascade Beauty	Sunshine	N/A	5	7	12
Pansy	Cascade Beauty	Waterfall	N/A	5	7	12
Perilla	Garden Leader	The Thrillah	4	5	5	14
Peristrophe	Garden Leader	Auro-variegata	4	6	5	15
Petunia	Cascadia	Series	4	6	5	15
Petunia	GL Trailing	Prime Color Series	N/A	6	5	11
Petunia	LoGro	Potunia Series	4	6	6	16
Petunia Dbl	Doubloom	Series	4	6	6	16
Phlox	Power	Hot Pink	4	5	6	15
Phlox	Power	Sky	4	5	6	15
Phlox	Power	Violet	4	5	6	15
Phlox	Power	White	4	5	6	15
Plectranthus	Garden Leader	Giant Frosty	5	6	5	16
Plectranthus	Garden Leader	Emerald Lace	N/A	6	6	12
Plectranthus	Garden Leader	HiGro Silver	N/A	6	5	11
Polygonum	Garden Leader	Pink Sprite	N/A	6	6	12
Porphyroma	Garden Leader	Maracus	N/A	8	6	14
Purslane	Garden Leader	Series (flat leaf)	4	5	5	14
Rosemary	Garden Leader	Concord Grape	6	10	8	24
Ruellia	Garden Leader	Purple	5	6	6	17
Salvia	Garden Leader	Pelican Black & Blue	5	6	6	17
Salvia	Garden Leader	Tricolor	5	6	6	17
Salvia	Garden Leader	Fahrenheit Series	N/A	6	6	12
Salvia	Garden Leader	Foreman Red	N/A	6	6	12
Salvia	Garden Leader	Furbee	N/A	6	6	12
Salvia	Garden Leader	Pelican Blue	N/A	7	6	13
Salvia	Garden Leader	Pelican White	N/A	7	6	13
Salvia	HiGro	Big Bang	5	6	5	16
Sanchezia	Garden Leader	Ecuadoris	N/A	8	6	14
Sanvitalia	Garden Leader	Gold	4	5	5	14
Scabiosa	Garden Leader	Blue	N/A	8	6	14
Scaevola	LoGro	Soft Blue	5	6	6	17
Scaevola	Garden Leader	Blue Haze	5	6	6	17
Scaevola	Garden Leader	Blue Ice	5	6	6	17
Sedum	Garden Leader	VooDoo	N/A	8	6	14
Setcreasea	Garden Leader	Purple Heart	3	4	5	12
Spikes	Garden Leader	Green Draceana	N/A	8	10	18
Streptocarpella	Garden Leader	Concord Blue	3	6	6	15
Strobilanthes	Garden Leader	Purple Passion	4	6	6	16
Talinum	Garden Leader	Kingswood Gold	N/A	6	6	12
Thunbergia	Garden Leader	Orange W/Eye	N/A	5	6	11
Thunbergia	Garden Leader	Sunset Shades	N/A	5	6	11
Thunbergia	Garden Leader	White W/Eye	N/A	5	6	11
Thunbergia	Garden Leader	Yellow W/Eye	N/A	5	6	11
Thymus	Garden Leader	Creeping Quicksilver	5	8	8	21
Torenia	Moon	Series	4	6	6	16
Trachelium	Garden Leader	Purple	N/A	8	8	16
Tweedia	Garden Leader	Blue	N/A	6	5	11
Verbena	Empress	Series (broad leaf)	4	5	6	15
Verbena	Garden Leader	Rigida Blue	N/A	6	5	11
Verbena	Garden Leader	Rigida Rose	N/A	6	5	11
Verbena	Veralena	Series (thin leaf)	4	5	6	15
Vinca	Garden Leader	Major Variegated	5	5	7	17
Zinnia	Garden Leader	White	N/A	4	4	8

GROWERS TIMETABLE

Order Month	Crop	Form	To be Received	Sale Date
January	Poinsettias	URC, Callus, Liners	July, August	Christmas
	Garden Mums	URC, rooted cuttings	May, June	Early Fall
	Tropical Ferns	liners	Jan	Spring
February	Geraniums	URC, liners	Winter	Spring
	Fall-planted Bulbs	bulbs	Fall	Use for fall retail sales or landscaping
March	Pansies	seeds	mid May - June	Fall
April/May	Pansies	plugs	July - August	Fall
	Perennials	bareroots	October - November	Spring
	Perennials	plugs vernalized	Spring	Spring
	Perennials	plugs non-vernalized	Fall	Spring
June	Allamandas	liners	late January - February	May
	Bougainvilleas	liners	late January - February	May
	New Guinea Impatiens	liners	mid February	Mother's Day Spring
	Hibiscus	liners	late January - February	May
	Mandevillas	liners	late January - February	May
	Begonias	liners	mid February	May
	Annual Plugs	plugs	late winter/early spring	Spring
	Gerberas	liners	October	Winter
	Gerberas	liners	February	Spring
July	Miniature Roses	liners	mid-November	Valentine's Day
	Miniature Roses	liners	mid-February	Mother's Day
August	Fall-planted Bulbs	bulbs	September	Sept. - Oct.
September	Annual Plugs	plugs	January - March	Spring
October	Spring-planted Bulbs	bulbs	Spring	
	Pansies	seeds	mid February - March	Spring
November	Remember, you can still book your Spring Pansies, Perennials, and Bulbs!			
December	Do marketing analysis for Poinsettias to prepare the January order for next year!			

CULTURE FOR PERENNIALS REQUIRING NO VERNALIZATION

Cultural details (based on Mid Western North America conditions) for scheduling of the Prime Perennial Collection®, indicating the production time for plug production (Plug weeks), and production time for finishing the product (Finish weeks).

Germination : 18-22°C / 64-71°F

Growing : 14-18°C / 57-64°F

	Sow time	Sds/plug	Cover seed	Germination weeks	Plug weeks	Finish weeks	Height in cm	Hardiness zone	Comments
Agastache Pink Pop	Jan-May	2	yes	3-4	6-7	6-10	30	7-10	grow at minimum of 15°C/59°F; tender perennial
Alyssum Luna	Jan-May	4	no	3	6-8	7-11	8	6-8	
Armeria Joystick Series	Dec-Apr	2-3	yes	2	7-8	8-12	30-35	6-8	
Campanula Advance Blue & White	Dec-May	4	no	3	6-8	8-14	15-20	5-7	needs 16 hours light for flowering
Chaenorhinum Summer Skies	Dec-May	4	yes	3	6-8	6-10	15-20	7-9	tender perennial
Chrysanthemum White Knight F1	Dec-May	2-3	yes	3	6-8	7-12	20-25	4-7	needs 16 hours light for flowering
Delphinium Blue Mirror	Feb-May	4	yes	4	6-8	8-13	25-30	4-7	needs active growing climate
Delphinium Blue Pygmy	Feb-May	4	yes	4	6-8	8-13	25-30	4-7	needs active growing climate
Delphinium Redcap	Jan-May	4	yes	4	6-8	8-12	20-25	7-9	needs well drained medium; tender perennial
Dianthus Arctic Fire	Jan-May	4	yes	4	6-8	10-14	15-20	5-8	low fertilisation required
Dianthus Shrimp	Jan-May	4	yes	4	6-8	8-12	15-20	4-7	low fertilisation required
Digitalis Carillon	Jan-May	4	no	3	6-7	6-10	20-25	5-8	
Erigeron Stallone	Jan-May	4	no	2	6-7	6-10	15-20	5-8	
Erysimum Goldrush	Feb-May	4	yes	2	6-7	8-12	25-30	6-9	
Gaura The Bride	Feb-May	4	yes	4	6-8	8-12	30-35	6-8	one time pinching, just after potting
Gypsophila Silverstar	Dec-May	6	yes	3	6-8	6-10	15-20	5-8	
Heuchera Palace Purple	Jan-May	4	yes	4	6-8	6-10	15-20	4-7	sold for ornamental foliage
Hutchinsia Crystal Carpet	Jan-Apr	4	no	3	6-7	8-10	10	6-8	
Hysopus Nectar Series	Feb-May	4	yes	4	6-8	10-16	25-30	4-7	needs 16 hours light for flowering
Lavandula Purple Ribbon	Dec-Mrc	4	no	3	6-7	13-15	35-40	7-10	tender perennial
Lobelia Blue Shadow	Dec-May	4	yes	3	6-8	10-16	20-25	4-7	grow relatively dry
Microseris Girandole	Feb-May	4	Yes	3	6-7	10-14	25-30	5-6	
Mimulus Bounty Series	Jan-Jul	4	yes	2	3-5	4-8	10-15	7-9	tender perennial
Nepeta Blue Moon & Pink Cat	Feb-May	4	yes	3	5-7	7-10	25-30	4-6	
Nepeta Felix	Feb-May	4	yes	3	5-7	8-11	30-35	3-5	
Platycodon Balou Series	Feb-May	4	yes	2	6-7	7-10	20-25	4-5	light germinator, thin layer of vermiculite
Papaver Moondance	Jan-May	4	yes	3	6-7	8-12	15-20	4-7	needs 16 hours light for flowering
Penstemon Navigator	Jan-May	4	yes	3	6-7	8-10	20-25	5-7	
Penstemon Tubular Bells Red	Jan-May	4	yes	3	6-7	8-12	30-35	7-10	tender perennial
Penstemon Tubular Bells Rose	Jan-May	4	yes	3	6-7	8-12	30-35	7-10	tender perennial
Polemonium Bambino Blue	Feb-May	4	yes	3	6-7	8-14	30-35	4-7	needs 16 hours light for flowering
Primula Noverna® Deep Blue	Feb-Apr	4	no	3	7-8	8-12	20-25	4-7	needs long days for flowering
Rosa Angel Wings	Dec-May	4	yes	4	6-7	4-8	15-20	6-9	precool 2 weeks at 10°C/50°F improves germination
Sagina Crispy	Jan-May	6	no	3	6-7	6-10	10-15	4-7	
Salvia Purple Vulcano	Feb-Jun	2-3	yes	3	6-8	6-10	20-25	6-8	sold for ornamental foliage; tender perennial
Salvia Select Blue & Rose	Jan-May	4	yes	3	6-7	8-12	30-35	5-7	needs 16 hours light for flowering
Salvia Hot Trumpets	Feb-May	4	no	3	6-7	6-8	20-25	7-10	tender perennial
Santolina Santa	Jan-May	4	yes	3	6-7	8-12	20-25	6-8	sold for ornamental foliage
Scabiosa Blue Diamonds	Dec-Apr	2-3	yes	4	6-8	9-13	20-25	5-7	
Sedum Purple Carpet	Feb-May	6	no	3	6-7	6-10	10-15	7-9	ow fertilisation & well drained; sold for ornamental foliage
Sedum Selsie	Feb-May	6	no	3	6-7	6-10	15-20	5-7	low fertilisation required & well drained
Silene Icecups	Feb-May	4	no	3	6-7	8-10	20-25	4-7	needs 16 hours light for flowering
Sisyrinchium Yellow Stone	Dec-Apr	4	yes	3	8-9	8-12	20-25	6-8	precool 2 weeks at 10°C/50°F improves germination
Veronica Nestor	Dec-Apr	4	yes	3	6-7	10-16	10-15	5-7	precool 2 weeks at 10°C/50°F improves germination
Viola Cornetto	Dec-Apr	4	yes	3	5-7	8-14	15-20	6-9	also suitable for hanging baskets

Please note:

- Sds/plug : seeds per plug, based on a 264 or 288 tray.
- Cover seed : yes means cover lightly with a fine fraction of vermiculite.
- Germination weeks : weeks to germinate.
- Plug weeks : this includes the germination period (germination weeks).
- Finish weeks : from potting the plug to sale.
- Height cm : height (in cm) at time of sale.
- Final potsize : above information is based on a 12cm pot.
For larger potsize more plugs per pot may be necessary.

CULTURE FOR PERENNIALS REQUIRING VERNALIZATION

Cultural details (based on Mid Western North America conditions) for scheduling of the Prime Perennial Collection®, indicating the production time for plug production (Plug weeks), and production time for finishing the product (Finish weeks).

Germination : 20-22°C / 68-72°F
 Growing : 10-14°C / 50-54°F

	Sow time	Sds/plug	Cover seed	Germination weeks	Plug weeks	Finish weeks	Sales period	Height in cm	Hardiness zone	Comments
Alchemilla Irish Silk	Jul-Aug	4	yes	4-5	8-9	26-30	Apr-May	15-20	4-7	precool 2 weeks at 10°C/50°F improves germination
Anacyclus Spring Carpet	Jul-Aug	4	no	4	6-7	26-30	Apr-May	10-15	5-7	precool 2 weeks at 10°C/50°F improves germination
Anemone Madonna	Jun-Jul	4	yes	4	8-9	30-34	Apr-May	20-25	4-7	
Aquilegia Angel Series	Apr-May	4	yes	4-5	8-9	32-36	Mrch-Apr	15-20	3-5	precool 2 weeks at 10°C/50°F improves germination
Aquilegia Clementine Series	☼☼☼☼ May-June	1	yes	2	6-8	32-36	Apr-May	35	3-5	TunedSeeds® no precooling needed
Aquilegia Winky Series	☼☼☼☼ Jun-Jul	1	yes	4	8-9	30-34	Apr-May	35	3-5	precool 2 weeks at 10°C/50°F improves germination
Arabis Spring Charm	Jul-Aug	4	yes	3	6-8	24-28	Mrch-Apr	15-20	4-7	Autumn pinching advised
Arabis Pinky	Aug-Sep	4	yes	2	5-6	22-26	Mrch-Apr	10-15	4-7	
Arenaria Avalanche	Jun-Jul	4	yes	5-6	8-9	30-34	Apr-May	15-20	4-7	
Armeria Ministicks Rose & White	Jun-Jul	4	yes	3	7-8	30-34	Apr-May	15-20	4-7	
Aruncus Noble Spirits	May-Jun	4	yes	4	8-9	34-38	Apr-May	20	4-7	
Barbarea Sunnyola	Jul-Aug	3	yes	3	6-7	24-28	Mrch-Apr	15	6-8	
Bergenia Red Beauty	Jul-Aug	4	no	4	8-9	26-30	Mrch-Apr	20	3-5	sold for ornamental foliage
Calceolaria Goldcap	Jun-Jul	4	no	4	7-8	30-34	Apr-May	15-20	7-9	well drained
Chiastophyllum Solar Yellow	Jun-Jul	4	yes	4	8-10	36-40	Apr-May	20	5-7	Pelleted seed: SowEasy®
Iberis Snowflake	June	4	yes	3-4	8-10	34-36	Apr-May	20-25	6-8	Autumn pinching advised
Pulsatilla Bells Series	Mar-Apr	4	yes	5	10-11	40-44	Mrch-Apr	15-20	5-7	precool 3 weeks 5°C/41°F improves germination
Rehmannia Rufus	Jul-Aug	4	yes	3-4	6-8	26-30	Apr-May	35-40	8-10	pinch first flowerstem, potsize minimal 18cm, tender perennial
Saxifraga Purple Robe & Snow Carpet	June-Jul	6	yes	3	6-7	26-30	Mrch-Apr	15-20	6-9	low fertilisation required, sandy and well drained soil
Veronica Ramona	Jun-Jul	4	yes	4	6-7	30-34	Apr-May	30-35	5-8	grow cool (8-10°C / 46-50°F)

Please note:

- Sds/plug : seeds per plug, based on a 264 or 288 tray.
- Cover seed : yes means cover lightly with a fine fraction of vermiculite.
- Germination weeks : weeks to germinate.
- Plug weeks : includes germination weeks.
- Finish weeks : from potting the plug to sale.
- Sales period : based on regular (cold) production.
- Height in cm : height at time of sale in cm.
- Final potsize : above information is based on a 10,5 cm pot.
For larger potsize more plugs per pot may be necessary.

INSECTICIDE CHART

Biological	Insecticides	REI Hours	Rate/100 gal.	Active Ingredient	Aphids	Beetles	C. Looper	Caterpillar	Fungus Gnats	Lace Bugs	Leaf Hopper	Leaf Miner	Leaf Roller	Mealy Bug	Mites	Scale	Shore Fly	Thrips	Webworm	Whitefly	Other
	Adept 25W	12	1-8 oz.	IGR					•			•					•				
	Avid	12	8 oz.	Abamectin								•									
•	Azatin XL	4	10-21 oz.	Azadirachtin	•	•	•	•	•		•	•					•		•	•	g-moth
•	BotaniGard	12	0.5-2 qts.	Beauveria bassiana (GHA)	•									•							
•	Cinnamite	4	61-85 oz.	Cinnamaldehyde	•																
	Citation	12	2.66 oz.	IGR								•									
•	Conserve SC	4	6-22 fl. oz.	Spinosad		•		•				•							•		g-moth
	Deadline	12	see label	Metaldehyde																	slugs
	Dibrom	24	see label	Naled	•						•	•		•						•	
•	DiPel DF	4	0.5-2 lbs.	Bacillus thuringiensis (kurstaki)																	g-moth
	Distance	12	6-12 oz.	IGR	•				•			•					•	•		•	
	Endeavor	12	2.5-5 oz.	Pymetrozine	•															•	
	Enstar II	4	5-10 oz.	IGR	•				•											•	
	Floramite	4	2-4 oz.	Bifenazate																	
•	Gnatrol	4	16-128 oz.	Bacillus thuringiensis (israelensis)					•												
	Kelthane T/O	48	0.5-1 lb.	Dicofol																	
	M-Pede	12	2 gal.	Potassium Salts of Fatty Acids																	
	Marathon 1% G	12	see label	Imidacloprid	•	•			•	•	•	•	•	•	•	•				•	
	Marathon 60 WP	12	see label	Imidacloprid	•	•				•	•	•	•	•	•	•				•	
	Marathon II WP	12	50 ml	Imidacloprid	•	•															
	Mavrik Aquaflow	12	4-10 oz.	Tau-fluvalinate	•	•		•			•		•	•	•	•		•		•	
	Merit 75 WP	n/a	0.5 oz.	Imidacloprid	•						•		•	•						•	
	Merit 0.5 G	n/a	see label	Imidacloprid	•						•		•	•						•	
	Ornamite		1-5 lbs.	Propargite																	
•	Ornazin 3% EC	12	8-10 oz.	Azadirachtin	•				•		•	•	•	•							
	Orthene 97	24	1/3 - 1-1/3 lbs.	Acephate									•	•	•	•		•			g-moth
	Pinpoint 15 G	12	see label	Acephate	•					•	•	•	•	•	•	•					
	Preclude TR	12	see label	Fenoxycarb	•											•					
•	PT1100 Pyrethrum	12	see label	Pyrethrins	•	•			•	•			•	•	•	•					
	PT1300 Orthene TR	24	see label	Acephate	•		•	•	•	•		•	•	•	•	•		•	•		
	PT1600 X-Clude DS	12	see label	Pyrethrins	•	•		•	•		•					•	•				
	PT1800 Attain TR	12	see label	Bifenthrin	•			•					•	•	•						
	Sanmite	12	2-6 oz.	Pyridazinone												•					
	SunSpray UF oil	4	1-2 gal.	Paraffinic Oil	•	•			•	•	•	•	•	•	•	•			•		
	Talstar GH	12	8-40 oz.	Bifenthrin	•				•		•	•	•	•							
	Tempo SC Ultra	n/a	1.5 fl. oz.	Cyfluthrin					•							•					
	Thiodan 50 WP	24	0.5-2 lbs.	Endosulfan	•	•	•														
	Tristar	24	1-4 packets	Chloronicotinyil	•						•	•	•	•						•	sawfly

CROP TIMES FOR GARDEN LEADER PERENNIALS

To find total crop time, add the weeks needed for each stage of production

Start with the product size you begin with and add the weeks, moving to the right till you reach the size you wish to finish.

Days for seed germination is listed for reference and is already included in the crop time required to finish the smallest production size listed for the crop.

EXAMPLE: AGHILLEA

If you start with seeds and want to finish in large pots: Total Crop Time 9 weeks to reach a 288 size + 2 weeks for the 144 + 2 week for the 72 + 3 weeks for a quart + 4 more weeks for a large pot = 20 total Weeks
If you plant with a 72 size plug tray and want to finish in quarts then simply plant and grow 3 weeks = 3 Total Weeks

ORDERING STARTER PLUGS: Allow an additional 18 to 22 weeks of production and order processing time to assure you get the varieties you

want on the delivery date you need. Some crops may require longer.
NOTE: Some crops and varieties are not available or not recommended to be started in the smaller plug sizes and others will not be finished in large pots, the weeks for these sizes are not used in calculation of total crop time.

Finish time for Perennials does not always mean a flowering plant at sale because not only time but season and temperature are a significant factor in the flowering of Perennials.

CROP NAME	SEED GERMINATION REQUIREMENTS Temperature is listed in Fahrenheit and is the soil temperature.	DAYS FOR SEED GERMINATION	WEEKS				TOTAL CROP TIME FROM SEED TO LARGE POT	
			288 PLUG	144 PLUG	72 PLUG	QUART POT 5 1/2" TO 6" GREEN PLANTS		GALLON POT 8" GREEN PLANTS
Achillea	65 to 70 F, uncovered	7 - 14	9	2	2	3	4	20
Agastache	70 F, uncovered	10 - 14	9	2	2	3	4	20
Alchemilla	70 F, uncovered	10 - 14	12	2	2	4	4	24
Aquilegia	40 F, 14 days then 70 F, lightly covered	14 - 18	9	2	2	3	3	19
Armeria	65 to 70 F, uncovered	14 - 18	9	2	2	3	3	19
Asclepias	34 F, 28 days then 70 F, lightly covered	14 - 18	12	2	2	4	4	24
Bellis	68 to 75 F, uncovered	14 - 18	8	2	2	2	2	14
Berkeya	65 F, uncovered	17 - 21	9	2	2	4	4	21
Campanula	60 to 65 F, uncovered	21 - 28	11	2	2	5	5	25
Centaurea	62 F, cover with vermiculite	10 - 14	8	2	2	2	4	18
Chrysanthemum	70 F, uncovered	10 - 18	8	2	2	2	4	18
Coreopsis	68 F, uncovered, lower temp at night	7 - 14	8	2	2	3	3	18
Cyclamen	60 F, cover with vermiculite	14 - 21	10	3	3	6	6	22
Delphinium	35 F, 7 days then 70 F, cover with vermiculite	21 - 28	9	2	2	4	4	21
Dianthus	60 F, uncovered	7 - 14	8	2	2	5	5	17
Digitalis	70 to 80 F, uncovered	7 - 14	7	2	2	3	4	18
Echolocarpus	60 to 70 F, uncovered	21 - 28	7	2	2	4	8	19
Echinacea	34 F, for 25 days then 68 F, cover lightly with vermiculite	21 - 28	8	2	2	4	4	20
Erigeron	70 F, uncovered	14 - 18	8	2	2	2	2	14
Gaillardia	70 to 75 F, uncovered	8 - 12	8	2	2	3	4	19
Geranium	65 to 70 F, uncovered and exposed to strong light	14 - 21	9	2	2	4	5	22
Geum	85 F, during day then 70 F at night, lightly covered	14 - 21	8	2	2	4	4	20
Gypsophila	72 F, uncovered	7 - 14	8	1	1	4	4	18
Kniphofia	65 to 70 F, uncovered	21 - 28	10	2	2	4	4	22
Lallemantia	65 to F, uncovered	10 - 14	8	2	2	4	4	20
Lavandula	70 F, lightly covered with vermiculite	10 - 14	9	3	3	6	6	27
Liatris	75 F, during day then 65 F night, lightly covered	14 - 21	9	2	2	4	4	21
Lupine	85 F, during day then 70 F at night, completely covered	14 - 21	8	2	2	12	6	18
Malva	68 F, uncovered	10 - 12	8	2	2	4	4	20
Oenothera	75 F, during day then 65 F night, lightly covered	14 - 21	8	2	2	2	2	14
Petrorhagia	65 F, completely covered	12 - 14	8	1	1	4	4	18
Platycodon	65 to 70 F, uncovered	14 - 21	9	2	2	4	4	17
Plumbago	70 F, covered	14 - 21	9	2	2	6	6	19
Primula	60 F, maximum, uncovered	21 - 28	10	2	2	10	24	24
Prunella	60 F, uncovered	14 - 21	10	1	1	4	4	20
Pyrethrum	60 F, uncovered	14 - 21	9	1	1	8	4	23
Rudbeckia	68 F, completely covered	21 - 28	10	2	2	6	4	24
Salvia	85 F, 2 days then 75 F, uncovered	14 - 21	9	2	2	4	4	21
Scabiosa	65 to 70 F, uncovered	14 - 21	9	2	2	4	4	21
Sedum	65 F, uncovered	14 - 17	9	2	2	6	4	19
Verbena	34 F, 7 days then 68 F, lightly covered	21 - 28	9	2	2	4	4	21
Veronica	60 F, uncovered	14 - 21	10	2	2	4	4	22
Viola	34 F, 14 days then 65 F, covered lightly with vermiculite	14 - 21	8	2	1	4	4	15

CULTURE FOR POPULAR ANNUAL PLANTS

Garden Leader Crop Name	pH	Light Levels	Growing Temperature	Fertilization	Water Requirements
Abutilon	5.5 - 6.5	Light shade	65 - 70 (F)	Alternate 150 ppm N w/ clear water	Constantly moist, avoid wilt due to dryness
Acalypha	5.5 - 6.0	High, full sun	65 - 72 (F)	Constant 200 ppm N	Constantly moist, not wet
Agastache	6.0 - 6.8	High, full sun	65 - 70 (F)	Constant 150 ppm N	Allow to thoroughly dry between watering
Ageratum	5.8 - 6.2	Very high, full sun	62 - 86 (F)	Constant 200 ppm N	Constantly moist
Ajuga	5.8 - 6.2	High, full sun	70 - 75 (F)	Constant 200 ppm N	Constantly moist, not wet
Alternanthera	5.5 - 6.5	High light to part shade	65 - 72 (F)	Weekly 200 ppm N	Constantly moist, avoid wilt due to dryness
Angelonia	5.5 - 6.2	Very high, full sun	68 - 72 (F)	Constant 100 ppm N	Constantly moist, avoid wilt due to dryness
Antirrhinum	5.5 - 5.8	Very high, full sun	55 - 72 (F)	Weekly 200 ppm N	Dry between watering
Argyranthemum	6.0 - 6.5	Very high, full sun	63 - 68 (F)	Constant 200 ppm N	Constantly moist, avoid wilt due to dryness
Asparagus	5.8 - 6.2	High, full sun	70 - 75 (F)	Constant 200 ppm N	Constantly moist, not wet
Asteriscus	5.8 - 6.2	Full sun to part shade	65 - 72 (F)	Constant 100 ppm N	Constantly moist, not wet
Bacopa(Sutera)	5.5 - 6.0	Filtered sun, light shade	65 - 70 (F)	Constant 200 ppm N	Constantly moist, never allow to dry out
Begonia	5.4 - 6.0	Full sun to part shade	68 - 75 (F)	Weekly 200 ppm N	Dry between watering
Bidens	5.5 - 6.2	Very high, full sun	65 - 72 (F)	Constant 200 ppm N	Constantly moist, never allow to dry out
Brachycome	5.8 - 6.2	High, full sun	63 - 68 (F)	Constant 200 ppm N	Constantly moist, not wet
Bracteantha	5.8 - 6.2	Very high, always full sun	65 - 72 (F)	Constant 100 ppm N	Dry side, avoid frequent wilting
Calibrachoa	5.5 - 6.0	High, full sun	65 - 72 (F)	Constant 200 ppm N	Constantly moist, not wet
Calitunia	5.5 - 6.0	High, full sun	65 - 72 (F)	Constant 200 ppm N	Constantly moist, not wet
Capsicum	5.8 - 6.2	High, full sun	70 - 75 (F)	Constant 200 ppm N	Dry between watering
Coleus	5.5 - 5.8	Light to moderate shade	70 - 75 (F)	Weekly 200 ppm N	Constantly moist, not wet
Coreopsis	5.8 - 6.2	Very high, full sun	62 - 86 (F)	Constant 200 ppm N	Constantly moist
Cuphea	5.8 - 6.2	High, full sun	70 - 75 (F)	Constant 200 ppm N	Constantly moist, not wet
Dahlia	6.0 - 6.5	High, full sun	62 - 72 (F)	Constant 200 ppm N	Constantly moist, not wet
Diascia	5.8 - 6.2	High, full sun	60 - 68 (F)	Constant 200 ppm N	Constantly moist, not wet
Dichondra	5.5 - 6.2	High, full sun	65 - 75 (F)	Weekly 300 ppm N	Dry between watering
Ecklonis	5.8 - 6.2	High, full sun	63 - 68 (F)	Constant 200 ppm N	Constantly moist, not wet
Eucalyptus	6.0 - 6.8	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Euphorbia	6.0 - 6.8	High, full sun	65 - 70 (F)	Constant 150 ppm N	Allow to thoroughly dry between watering
Euryops	5.8 - 6.2	High, full sun	70 - 75 (F)	Constant 200 ppm N	Constantly moist, not wet
Evolvulus	5.6 - 6.2	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Fuchsia	5.5 - 6.0	High, full sun	55 - 66 (F)	Constant 200 ppm N	Constantly moist, not wet
Gaura	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Geranium	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Geranium Ivy	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Gomphrena	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Grass	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Helichrysum	5.5 - 6.5	Moderate to high	65 - 75 (F)	Constant 200 ppm N	Allow to slightly dry between watering
Helinium	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Hemigraphis	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Hibiscus	5.5 - 6.3	High, full sun	68 - 75 (F)	Weekly 200 ppm N	Constantly moist, never allow to dry down
Hypoestes	5.6 - 6.2	Partial shade	60 - 65 (F)	Weekly 100 ppm N	Constantly moist, not wet
Impatiens Double	6.0 - 6.2	Full to partial shade	62 - 65 (F)	Weekly 100 ppm N	Constantly moist, not wet
Ipomea	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Iresine	5.5 - 6.5	Partial shade	65 - 72 (F)	Weekly 150 ppm N	Allow to slightly dry between watering
Lamium	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Lantana	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Lavandula	5.6 - 6.2	Full sun to part shade	58 - 62 (F)	Weekly 200 ppm N	Constantly moist, not wet
Lobelia	5.6 - 6.2	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Lysimachia	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Nemesia	5.6 - 6.2	High, full sun	63 - 70 (F)	Constant 200 ppm N	Constantly moist, never allow to dry down
New Guinea	6.0 - 6.5	Partial shade	68 - 75 (F)	No feed to start, then 100 ppm N Constant	Moderate moisture when young, then constantly moist
Oenothera	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 200 ppm N	Dry thoroughly between watering
Oregano	5.5 - 6.5	Moderate to high	65 - 75 (F)	Constant 200 ppm N	Allow to slightly dry between watering
Osteospermum	5.8 - 6.2	High, full sun	63 - 68 (F)	Constant 200 ppm N	Constantly moist, not wet
Pansy	5.5 - 5.8	High, full sun	55 - 65 (F)	Weekly 200 ppm N	Dry thoroughly between watering
Perilla	5.5 - 5.8	Light to moderate shade	70 - 75 (F)	Constant 200 ppm N	Constantly moist, not wet
Peristrotthe	5.5 - 6.0	High, full sun	68 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Petunia	5.5 - 6.0	High, full sun	63 - 72 (F)	Constant 300 ppm N	Keep well watered
Phlox	5.8 - 6.2	High, full sun	63 - 72 (F)	Constant 200 ppm N	Light watering at first, keep moist to finish
Plectranthus	5.5 - 6.2	High, full sun	70 - 80 (F)	Constant 200 ppm N	Keep well watered
Polygonum	5.5 - 6.0	High, full sun	68 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Porphyroma	5.5 - 6.0	High, full sun	68 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Purslane	5.8 - 6.2	High, full sun	68 - 78 (F)	Constant 200 ppm N	Dry thoroughly between watering
Rosemary	5.5 - 6.5	Moderate to high	65 - 75 (F)	Constant 200 ppm N	Allow to slightly dry between watering
Ruellia	6.0 - 6.5	High, full sun	70 - 75 (F)	Constant 150 ppm N	Constantly moist, not wet
Salvia	5.4 - 6.2	High, full sun	65 - 72 (F)	Weekly 200 ppm N	Dry thoroughly between watering
Sanchezia	5.5 - 6.0	Full to moderate shade	70 - 75 (F)	Constant 200 ppm N	Constantly moist, never allow to dry down
Sanvitalia	5.5 - 6.0	High, full sun	65 - 75 (F) never colder	Constant 200 ppm N	Keep dry
Scabiosa	6.0 - 6.5	High, full sun	70 - 75 (F)	Constant 150 ppm N	Constantly moist, not wet
Scaevola	5.5 - 6.0	High, full sun	68 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Sedum	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 150 ppm N	Dry thoroughly between watering
Setcreasea	5.5 - 6.0	Full to moderate shade	70 - 75 (F)	Constant 200 ppm N	Constantly moist, never allow to dry down
Spikes	6.0 - 6.5	High, full sun	65 - 70 (F)	Constant 150 ppm N	Dry thoroughly between watering
Streptocarpella	5.8 - 6.2	Partial sun, light shade	68 - 75 (F)	Constant 200 ppm N	Constantly moist, not wet
Strobilanthes	5.5 - 6.0	Full to moderate shade	70 - 75 (F)	Constant 200 ppm N	Constantly moist, never allow to dry down
Talinum	5.5 - 6.0	Full sun to part shade	68 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Thunbergia	6.0 - 6.5	High, full sun	70 - 75 (F)	Constant 150 ppm N	Constantly moist, not wet
Thymus	5.5 - 6.5	Moderate to high	65 - 75 (F)	Constant 200 ppm N	Allow to slightly dry between watering
Torenia	5.8 - 6.2	Partial sun, light shade	68 - 75 (F)	Constant 150 ppm N	Constantly moist, not wet
Trachelium	5.5 - 6.0	High, full sun	68 - 70 (F)	Constant 200 ppm N	Constantly moist, not wet
Tweedia	5.5 - 6.0	High, full sun	65 - 70 (F)	Weekly 200 ppm N	Constantly moist, not wet
Verbena	5.4 - 6.2	High, full sun	65 - 72 (F)	Constant 200 ppm N	Constantly moist, never allow to dry down
Vinca	5.5 - 6.0	High, full sun	65 - 70 (F)	Weekly 200 ppm N	Constantly moist, not wet
Zinnia	5.4 - 6.2	High, full sun	65 - 72 (F)	Weekly 200 ppm N	Dry thoroughly between watering

QUICK 10" BASKETS USING GERANIUMS FROM SEED.

Here is a method to minimize the use of expensive greenhouse space and produce high value hanging basket combinations. By shifting container size as the plants mature you maximize your greenhouse space saving you production dollars.

MATERIALS

Hybrid Zonal Geranium seed. Use Garden Leader Saturn for the large flower heads. Use the Black Velvet series for its dramatic black foliage. Use the LoGro Series for high density cropping.

Companion plants: Select from the great Garden Leader Ivy Geraniums, Dichondra, Sprengeri, Bacopa, Calibrachoa, Helichrysum, Hypoestes, Lysmachia, Plectranthus, Talinum, Verbena or Trailing Zinnia

- 288 size plug trays
- 4 1/2" pots
- 10" hanging baskets.

METHOD:

- Plan the number of baskets you will want to produce.
- Order our Geranium seeds and companion plant seeds to arrive 15 weeks before your planned finish date.
- If you choose to use companion plants liners, schedule them to arrive 9 to 10 weeks after you receive your Geranium seeds.
- Sow one Hybrid Zonal Geranium seed per cell in a 288 size tray and cover with coarse vermiculite.
- Sow your companion plant seed according to specific instructions in the catalog or on the seed packet.
- Maintain a soil temperature of 70°. Geranium seedlings will emerge in 5 to 7 days.
- Grow in full sun for 5 weeks then transplant Geraniums into 4 1/2" pots and space pot to pot on the bench about 4 to 5 weeks.
- Transplant your companion plant seedlings into 48 sized cell packs.
- When the foliage covers the pots, transplant each Geranium into the center of a 10" hanging basket.
- Plant 3 to 4 companion plants around the outside rim of the basket.
- Space on the bench or hang the baskets for 3-4 weeks and sell.

CALCULATING FERTILIZER NEEDS

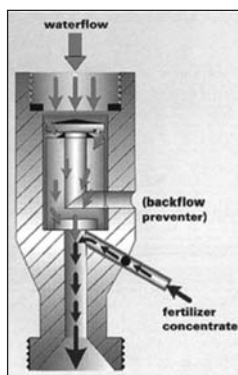
How to Calculate Fertilizer Stock Solutions When Using Injectors or Proportioners.

Greenhouse growers frequently express the concentration of fertilizers, in terms of parts per million (ppm). Fertilizer bags for the commercial grower will list mixing instructions on the label to achieve a desired ppm of Nitrogen. The amount used varies depending on the amount of Nitrogen in the formula. Nitrogen is the first value in the formula. For example: 20-10-15 formula has 20% Nitrogen.

The initial calculation relies on weight. Going to the scale each time you mix a stock tank solution is inconvenient so use a container that you can mark on. Once you weight the fertilizer needed for your stock tank you can draw a mark on the container and in the future simply refill to the mark.

Here are two examples of how to achieve 100 ppm Nitrogen using first, a Siphonex (Hozon) Proportioner and then a 1:100 Gator XL Injector. 100 ppm is a handy rate because to increase to 200 you simply double the amount of fertilizer you use with the same amount of water in your stock tank. For 300 ppm, triple the amount, etc.

HOZON - SYPHONEX PROPORTIONER



The Hozon has a proportion ratio of 1:16. For each gallon of concentrate taken up, it produces 16 gallons of liquid fertilizer solution. Example: If a fertilizer recommendation is 2 TBSP per gallon for final concentration, make the solution 16 times greater than the 2 TBSP rate (i.e., $16 \times 2 = 32$) so 32 TBSP per gallon is the concentrated rate. When mixed with water by the Hozon, the solution will come out of the hose end at the recommended rate of 2 TBSP per gallon.

The Hozon draws 1 gallon of concentrate in about 5 minutes, and this will be mixed with approximately 12 to 18 parts of water through the hose, i.e., 5/8 inch instead of 1/2 inch, produces a higher flow rate. Excessive back-pressure will cause the siphon to stop drawing. The Hozon should not be more than 50 feet from the nozzle end to work properly. If more than 50 feet of hose is used, the Hozon can be connected between two sections of hose.

Ounces of different types of water-soluble fertilizer needed to make 1 gallon of concentrate for use with Hozon (1:16 ratio).

Fertilizer Analysis	PPM of Nitrogen Desired				
	100	150	200	250	300
10-30-20	2.0	3.0	4.0	5.0	6.0
15-30-15	1.35	2.03	2.70	3.38	4.05
20-20-20	1.0	1.5	2.0	2.5	3.0

GATOR XL INJECTOR

These injectors operate without electricity, using water pressure as the power source. They are installed directly in the water supply line. Water flow activates the injector, which takes up the required percentage of concentrate directly from a container with stock solution. Inside the injector, concentrate is mixed with water, and water pressure forces the solution downstream. The amount of concentrate dispensed is directly proportional to the volume of water entering the injector, irrespective of variations in water flow or pressure that may occur in the main line. The Gator XL delivers at a fixed proportion of 1:100.



This is the basic formula for determining ppm in 100 gallons of water:
 $A \times 75 = B$

A = the % active ingredient in the fertilizer

B = ppm contained in 1 ounce of the material in 100 gallons of water

Example: 20-10-15 contains 20% Nitrogen (.20).
 So: $.20 \times 75 = 15$

Divide the desired ppm by this number to determine the amount of fertilizer needed in 100 gallons of water.

$100/15 = 6.66$ ounces of 20-10-15 in 100 gallons of water will equal 100 ppm Nitrogen.

Since the 1:100 injector mixes at a rate of 1gallon of stock to 100 gallons of clear water, you would add 6.66 ounce of dry fertilizer to each gallon of water in your stock tank to achieve a 100ppm rate delivered to the plants.