

VARIETY	CHILL HOURS	ZONE
See note below	REPORTED*	
Akane	800	5-9
Anna	100-300	4-9
Arkansas Black	800-900	5-8
Ashmead's Kernel	800-1000	3-7
Auvil™ Early Fuji	100-400	4-10
Baldwin		4-8
Beacon		3-7
BELLA™ - Rebella cv		5-8
Belle de Boskoop		3-6
Ben Davis		3-8
Benoni		4-7
Binet Rouge (Sweet-Hard Cidre)		5-9
Black Gilliflower (Sheepnose)		6-9
Black Twig		6-9
Blaze		4-8
Blondee®		5-8
Braeburn	500-700	6-7
Bramley's Seedling (Sharp- Hard Cidre)		4-9
Brown Snout (Bitter-sweet- Hard Cidre)		5-8
Brown Thorn (Bitter-sweet- Hard Cidre)		5-8
Brown's Apple (Bitter-sharp- Hard Cidre)		4-8
Burgundy		3-8
Cameo		5-8
Carroll		3-7
Caville Blanc d'Hiver		5-9
Centennial Edible-Flowering CRAB		3-9
Chenango Strawberry		4-9
Chestnut Edible-Flowering CRAB		3-5
Connel Red-Red Fireside		3-5
Cortland		3-8
Cox's Orange Pippin	600-800	4-10
Crimson® Gold (Svatava cv)		5-8
Crimson® Topaz (Topaz cv)		5-8
CrimsonCrisp™ (Co-op 39 cv)		5-8
Criterion		5-8
DandeeRed®		4-7
Dolgo Edible-Flowering CRAB (Bit-sharp HC)	400	2-8
Domaines (Bitter- Hard Cidre)		5-8
Dorsett Gold	100-250	5-9
Duchess		3-7
Early Golden Delicious (Carnefix cv.)	600-700	5-9
Ein Shemer	100-400	5-9
Ellis Bitter (Bitter-sweet- Hard Cidre)		4-6
Elstar (Valstar™		5-9

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See note below	REPORTED*	
Empire	800	4-7
Enigma		3-7
Enterprize		4-9
Esopus Spitzenburg	600-800	4-10
Fameuse	600	3-10
Fireside		3-5
Flamin' Early Red™	400-500	5-8
Foxwhelp		4-9
Freedom		4-7
Frostbite™ (MN 447)		4-6
Fuji	100-400	4-10
Gala	500-600	4-9
Galarina™ (X-4982 cv)		5-8
Gano		5-8
Gilliflower		6-9
Ginger Gold®		5-9
Golden Delicious	600-700	5-9
Golden Noble		6-9
Golden Russet	800-1000	4-6
Goldrush		4-9
Goodland		2-7
GP's Early Red Rezista® - Resi cv		4-8
GP's Gala-like Rezista®- Releika cv		4-8
GP's Golden Rezista® - Goldstar cv		4-8
GP's Rome-like Rezista® - Rajka cv		4-8
Grandpa's SummerGold--Harvey cv		4-8
Granny Smith	400-600	5-9
Gravenstein	600-700	2-9
Grimes Golden		5-8
Haas		5-8
Haralson		2-8
Hardy Cumberland		4-8
Harrison (Cidre apple)		4-8
Hawkeye- Original Delicious	700-800	4-8
Holiday		4-8
Honeycrisp™	800-1000	3-8
Honeygold		3-7
Hopa Edible-Flowering CRAB		4-7
Hubbardston Nonesuch		6-10
Hyslop Edible CRAB		3-8
Idagold		3-7
Idajon		3-7
Idared		3-7
Initial (X-6163 cv)		5-8

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See note below	REPORTED*	
Irish Peach		3-7
JerseyMac		5-8
Jonafree™		4-8
Jonagold	700-800	4-8
Jonalicious		3-8
Jonamac		3-8
Jonathan	700-800	4-8
Kandil Sinap		6-9
Keepsake		3-8
King David		5-8
Kingston Black (Bitter-sharp- Hard Cidre)		4-6
Kinsei		5-9
Kitanosachi		5-9
Kogetsu		5-9
Lady (Decorative & Cidre apple)		4-8
Late Strawberry		4-8
Liberty	800	4-9
Lodi		2-9
LuraRed		5-8
Macoun	600	4-7
Maiden Blush		3-8
Manchurian Ornamental/Pollinating Crab		4-8
McIntosh	900	4-8
Melissa Sweet™		4-8
Melrose		5-9
Michelin (Bitter-sweet- Hard Cidre)		5-8
Middleton Fameuse		4-8
Molly's Delicious (See PF Early Red)	400-500	5-8
Mother		4-9
Mutsu or Crispin	500-900	4-8
Newtown (Yellow) Pippen	700	4-10
Nittany		4-8
Noel des Champs (Bitter-sweet- Hrd Cidre))		5-8
Norkent		2-7
Norland		2-7
Norson		1-7
Northern Lights		3-8
Northern Spy	800-1000	3-9
Northwest Greening		2-8
Nova EasyGro		2-8
NovaMac		4-8
NovaSpy		4-8
Old Nonpariel		4-8
Opalescent		4-8

VARIETY	CHILL HOURS	ZONE
See note below	REPORTED*	
Oriole		3-8
Ozark Gold		5-8
Pink Lady®- Cripps Pink cv	400-500	6-9
Pink Pearl	600	4-9
Pitmaston Pineapple		6-9
Poundsweet		4-8
Prairie Spy		3-9
Pristine®		4-7
Querina® (Florina cv)		5-8
Quinte		3-5
Red Astrachan	700	4-8
Red Baron		3-5
Red Delicious	700-800	4-8
Red Summer Rambo		4-9
Red Westfield Seek-No-Further		3-6
Redfree		4-7
Regent		4-7
Rhode Island Greening		4-8
Rome	700-1000	5-9
Roxbury Russet (Sharp)		4-8
Sansa		5-8
Sekai-Ichi		5-9
Shizuka		4-9
Smokehouse		3-9
Snowdrift Ornamental/Pollinating Crab		3-8
Snowsweet™ MN 1797		4-8
Spartan		3-8
Spigold	600	3-10
Spijon		3-9
State Fair		3-8
Stayman	600-900	5-8
Steele Red (Baldwin)		4-8
Summer Rambo		4-9
SummerMac (Arends cv)		4-7
Sweet Coppin (Sweet- Hard Cidre)		5-8
Sweet Sixteen		3-8
Swiss Gourmet™ (Arlet cv)		4-8
Tolman Sweet		3-6
Tompkins County King		4-8
Tramlett's Bitter (Bitter-swt- Hard Cidre)		6-9
Tsugaru		5-8
Turley Winesap		4-8
Twenty Ounce		4-8
Valentine		2-7

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See note below	REPORTED*	
Valstar™- (Red Lustre Elstar)		5-9
Wagener		4-9
Washington Strawberry		3-6
Wealthy		2-8
Westfield Seek-No-Further		3-6
Whitney Edible CRAB (Bitter Hard Cidre)	600	2-9
Williams Pride		4-9
WineCrisp™ (Co-op 31)		4-8
Winesap	800	5-9
Winter Banana	100-400	3-9
Wolf River		2-9
Worcester Pearmain		4-8
Yellow Bellflower	400	4-7
Yellow Transparent		2-7
York- Spur Red		4-8
Zestar!(R)		3-8

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See note below	REPORTED*		
NOTES ABOUT CHILLING HOURS AND HARDINESS ZONES:			
<p>Because so many customers have asked about chilling hours, Grandpa has compiled these charts from the best sources that he has. As you can see, many varieties have not been researched as to their specific chilling hour requirements. There is a reason for this! Unless you live in a region where it is VERY WARM all year around, such as Southern California, Florida, or the Gulf Coast regions, you may likely get enough chilling hours in most years for many varieties to properly break dormancy and bloom.</p>			
<p>Enough chilling hours are required during the dormant season to satisfy the plants need for dormancy. Insufficient chilling hours may delay bloom or even the breaking of dormancy and growth of the tree in the spring. Chilling hours are typically calculated at an optimum temperature of 40 degrees F. Over 50 degrees F no chilling hours are accumulated. Under 32 degrees F no chilling hours are accumulated because the plant is fully dormant with no cellular activity. The total number of hours during the winter that the plant is in that 32-50 degree range will determine whether it has accumulated enough chilling hours. Because accumulated chilling is such a variable thing, the requirements are not hard firm numbers, but rather soft areas.</p>			
<p>Micro-climates and regional variations will also affect chilling hours, as well as hardiness zone issues. For the most part it is more important to make sure that you have selected varieties that are sufficiently hardy for your zone. Higher altitudes and elevations often are colder and will accumulate more chilling hours than lower elevations, such as valleys or sunny slopes, and their hardiness zone may differ slightly also.</p>			
<p>Even so, many varieties vary in their response to chilling hours, and as you can see there seems to be little pattern in the above numbers. Therefore, Grandpa takes them with a "grain of salt!" Unless you are in a region with very low chilling hours, you should not get too worried about this issue.</p>			
<p>Hardiness zones and chilling hours really show no relationship. This is likely due to the genes that control winter hardiness and cold tolerance not being the same or linked to the genes that control when a plant will come out of dormancy and bloom (chilling hour requirement). Once again, you can not see a real pattern relating chilling hours to hardiness by zone in these charts.</p>			
<p>For the most part, if you live in or near an area that has 600 or more chilling hours, you will likely be able to grow almost all varieties. If you live in a zone with less than 600 hours of chilling in a typical year, then you may want to grow varieties that are in the lower chilling hour requirement range. It helps to also talk with experienced gardeners and/or orchardists in your area and find out which varieties do best for them. Local experience is a very good guide.</p>			