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CRITICAL SPRING TEMPERATURES FOR FRUIT BUD DEVELOPMENT STAGES

Apples									
Apples	Silver tip	Green Tip	1/2 inch green	Tight Cluster	First Pink	Full Pink	First Bloom	Full Bloom	Post Bloom
Old temp	16	16	22	27	27	28	28	29	29
10% kill	15	18	23	27	28	28	28	28	28
90% kill	2	10	15	21	24	25	25	25	25
Pears									
Pears	Bud scales separating	Blossom buds exposed	Tight cluster	First White	Full White	First Bloom	Full Bloom	Post Bloom	
Old temp	18	23	24	28	29	29	29	30	
10% kill	15	20	24	25	26	27	28	28	
90% kill	0	6	15	19	22	23	24	24	
Apricots									

Apricots	Swollen Bud	Tips separate	Calyx red	First White	First Bloom	Full Bloom	In the shuck	Green Fruit	
Old temp	--	23	--	25	--	28	--	31	
10% kill	15	20	22	24	25	27	27	28	
90% kill	--	0	9	14	19	22	24	25	



Peaches	Swollen Bud	Calyx Green	Calyx Red	First Pink	First Bloom	Full Bloom	Post Bloom		
Old temp	23	--	--	25	--	27	30		
10% kill	18	21	23	25	26	27	28		
90% kill	1	5	9	15	21	24	25		



European Plums	First Swelling	Side White	Tip Green	Tight Cluster	First White	First Bloom	Full Bloom	Post Bloom	
Old temp	--	--	--	--	23	27	27	30	
10% kill	14	17	20	24	26	27	28	28	
90% kill	0	3	7	16	22	23	23	23	

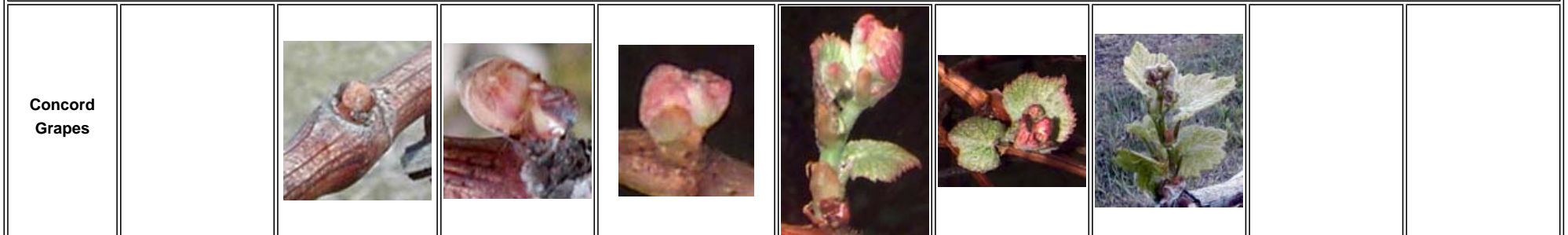


Sweet Cherries	Swollen Bud	Side Green	Green Tip	Tight Cluster	Open Cluster	First White	First Bloom	Full Bloom	Post Bloom
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Old temp	23	23	25	28	28	29	29	29	30
10% kill	17	22	25	26	27	27	28	28	28
90% kill	5	9	14	17	21	24	25	25	25



Tart Cherries	Swollen Bud	Side Green	Green Tip	Tight Cluster	Open Cluster	First White	First Bloom	Full Bloom	
10% kill	15	24	26	26	28	28	28	28	
90% kill	0	10	22	24	24	24	24	24	



Concord Grapes	Dormant	First Swell	Late Swell	Bud Burst	First Leaf	Second Leaf	Third Leaf	Fourth Leaf	
10% kill	varies	13	21	25	27	28	28	28	
90% kill		-3	10	16	21	22	26	27	

Old standard temperature is the lowest temperature that can be endured for 30 minutes without damage.

This chart also shows the temperature that will kill 10 % and 90 % of normal fruit buds.

These numbers were taken from Washington (WSU), Michigan (MSU) and North Carolina (NCS) Extension Bulletins. Apple - WSU EB0913, Pears - WSU EB0978, Sweet Cherries - WSU EB1128, Peaches - WSU EB0914, Apricots - WSU EB1240, Tart Cherries - MSU Research. Rpt. 220,

Portions of these bulletins are posted at Gregg Lang's [Fruit Bud Hardiness](#) Page at the [MSU Horticulture Department](#)

Two others are posted on the web: Concord Grapes - [WSU EB1615](#), Blueberries, [NCS- HIL-201-E](#)

For information on current SW Michigan Fruit Development see the [Fruit Update](#).

For more information on freezing injury see my [Frost Freeze Page](#)



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Last modified: May 10, 2004
