

**CIDER APPLE VARIETIES on trial at WSU Mount Vernon NWREC 2002 - 2017**

Cultivar	English Classification <sup>1</sup>	Rootstock <sup>2</sup>	Bloom Date	Bloom Density <sup>3</sup>	Productivity Rating <sup>4</sup>	Harvest Date (2012-2017)	Fruit Size (inch) <sup>5</sup>	Juice Yield (ml/lb) <sup>6</sup>	Juice Data				
									Tannin (%) <sup>7</sup>	Acid (%) <sup>8</sup>	pH <sup>9</sup>	Specific Gravity <sup>10</sup>	°Brix <sup>11</sup>
Amere de Berthcourt	BSW	Bud 9, M9	5/3	3.5	3.2	9/25	2.12	288	0.34	0.20	4.11	1.049	12.2
Amere Forestier	SW	Bud 9	5/18	2.8	2.9	10/18	2.50	255 b	0.13	0.20	3.93	1.046	11.5
Bedan de Parts	BSW	M9	5/18	2.8	2.0	10/1	2.42	247 b	0.14	0.18	4.43	1.051	10.7
Blanc Mollet	BSW	Bud 9	5/13	2.7	3.0	9/4	1.78	275 b	0.20	0.15	4.31	1.046	11.2
Bouteville	SW	M9	5/8	3.0	4.0	9/11	2.11	458	0.14	0.16	4.55	1.052	12.4
Bramley's Seedling	SH	M26	5/6	3.1	3.1	9/24	3.86	253	0.09	0.11	3.12	1.045	11.2
Bramtot	BSW	M9	5/10	4.1	3.2	9/15	2.21	374	0.50	0.32	4.04	1.057	13.1
Breakwell Seedling	BSH	M26	5/19	3.9	3.1	9/6	2.43	260	0.20	0.72	3.28	1.041	10.1
Brown Snout	BSW	M106, M9, M27	5/22	3.8	3.5	10/18	2.28	281	0.16	0.31	3.64	1.051	12.9
Brown Thorn	BSW	M9	5/19	2.4	2.7	10/8	2.42	253b	0.16	0.20	4.20	1.048	12.2
Brown's Apple	SH	M106	5/11	3.5	2.8	9/27	2.74	262b	0.10	0.74	3.23	1.039	10.2
Bulmer's Norman	SW	M106	5/8	4.5	2.8	9/12	2.95	247b	0.20	0.22	4.09	1.046	11.3
Campfield	SW	M106	5/2	3.4	2.2	10/21	2.89	159	0.17	0.23	4.38	1.055	12.8
Cap of Liberty	BSH	M106, Bud 9	5/5	4.2	3.1	10/7	2.26	249	0.20	1.14	3.14	1.047	11.8
Chisel Jersey	BSW	M106	5/19	3.3	3.0	9/29	2.65	232	0.42	0.25	4.31	1.056	13.8
Cimitiere	BSW	M9	5/29	2.7	3.0	10/9	2.09	294b	0.23	0.13	4.51	1.039	10.1
Cort Pendu Rose	SH	Bud 9	5/19	2.7	2.8	10/11	2.50	348a	0.11	0.81	3.26	1.048	11.8
Dabinett	BSW	M106	5/19	3.7	3.7	10/14	2.49	242	0.24	0.22	4.41	1.055	13.5
Domaines	BSW	M9, M de Dieppe/M106	4/29	4.1	2.4	9/29	2.73	257b (106) 244b (M9)	0.26	0.20	4.27	1.050	13.1
Doux Normandie	BSW	M9	5/12	3.7	3.1	10/6	2.43	258	0.29	0.33	3.80	1.047	11.8
Fillbarrel	BSW	M9	5/1	2.7	3.0	10/8	2.58	310	0.19	0.22	3.67	1.045	11.2
Finkenwerder Herbstprinz	SH	M9, M106	5/5	3.8	3.2	9/22	3.42	242	0.07	0.98	3.21	1.055	13.2
Foxwhelp	BSH	M106, M27	5/5	3.8	2.9	10/4	3.18	256	0.17	0.69	3.20	1.048	12.0
Frequin Rouge	BSW	M106	5/7	4.1	3.1	10/2	2.31	251b	0.30	0.26	4.17	1.047	11.4
Golden Russet	SH	M26	4/29	4.7	3.9	10/3	2.83	219	0.10	0.66	3.58	1.061	15.4
Granniwinkle	SW	Bud 9, M26	4/27	4.3	3.8	9/2	2.71	228	0.08	0.30	3.90	1.045	11.0
Gravenstein, Red (Worthen)	SH	M9	4/24	4.2	4.1	8/28	2.92	235	0.07	0.56	3.49	1.052	12.6
Grimes Golden	SH	M9	4/29	4.6	4.2	10/14	3.11	202	0.07	0.61	3.45	1.052	12.2
Grindstone	SH	Bud 9	4/30	2.7	2.8	10/25	2.74	251	0.10	0.58	3.49	1.061	13.7
Harrison	SH	M106	5/6	3.4	2.3	10/19	2.36	221	0.10	0.64	3.46	1.061	14.6
Harry Masters' Jersey	BSW	M106	5/16	4.1	3.9	10/9	2.59	174	0.21	0.19	4.34	1.051	12.5
Jonagold	SW	M26	4/30	4.8	4.0	9/25	-	-	0.06	0.40	3.60	-	12.1
Jouveaux	BSW	M9	4/29	4.4	2.8	9/28	2.75	180	0.16	0.30	4.01	1.052	13.0
Kermerrien	BSW	M106	5/12	3.0	3.1	10/1	2.41	179	0.32	0.26	3.88	1.050	12.5
Kingston Black	SH	M106	5/13	3.3	2.7	9/30	2.42	170	0.15	0.61	3.51	1.055	13.3
Lambrook Pippin	BSH	M9, M106	5/9	3.1	2.6	10/16	2.54	256	0.36	1.06	3.13	1.054	13.0
Major	BSW	M9	5/13	3.6	3.7	9/7	2.30	275	0.21	0.20	4.23	1.051	12.9
Margil	SW	M9	4/25	4.8	-	9/24	2.50	214	0.07	0.57	3.49	1.049	11.8
Marie Menard	BSW	M9	5/4	3.4	-	9/24	2.42	243	0.42	0.28	4.16	1.057	13.7
Marin Onfroy	BSW	M9	5/25	1.3	-	10/6	2.24	193a	0.19	0.24	4.30	1.053	13.2

Maude	SH	M9	4/30	4.3	3.1	9/7	2.72	240	0.07	0.49	3.43	1.050	11.6
Medaille D'Or	BSW	M106, M26	5/29	3.2	3.0	10/15	2.15	248	0.82	0.32	4.09	1.059	14.9
Mettais	BSW	M9, M de Dieppe/M106	5/8	3.8	2.7	9/23	2.21	195b	0.25	0.19	4.49	1.056	12.9
Michelin	BSW	M106	5/12	4.1	3.6	10/12	2.52	166	0.14	0.27	4.09	1.048	11.4
Mott Pink	SH	M9	4/30	4.0	3.5	9/6	2.62	301	0.05	0.76	3.18	1.043	10.5
Muscadet de Dieppe	BSW	M9, M27	5/9	3.1	2.6	9/13	2.63	212	0.21	0.26	4.12	1.057	14.2
Muscat de Bernay	BSW	Bsnout/M106	5/8	3.4	3.7	10/16	2.82	244b	0.19	0.28	3.94	1.050	11.9
Nehou	BSW	M9	4/19	3.8	-	9/17	2.53	216b	0.34	0.32	4.10	1.056	14.0
Peau de Vache	SW	Bud 9	5/14	4.3	4.2	10/1	2.67	262	0.14	0.26	4.00	1.048	11.7
Porter's Perfection	BSH	M9	5/2	3.8	-	9/26	2.16	253	0.30	0.93	3.20	1.054	13.0
Redstreak, Hereford	SH	M106	5/9	3.6	3.3	9/7	2.64	532a	0.09	0.95	3.18	1.048	11.7
Reine des Hatives	BSW	M26, M106	5/9	2.4	2.7	9/29	2.73	244a	0.17	0.93	3.32	1.044	11.5
Reine des Pommes	BSW	M26	5/5	3.0	2.5	10/1	2.42	233b	0.52	0.41	3.92	1.063	14.7
Ribston Pippin	SH	M9	4/24	5.0	-	9/13	2.71	258	0.11	0.67	3.37	1.060	13.2
Rosemary Russet	SH	M9	4/25	3.0	-	9/24	2.51	260	0.07	0.86	3.28	1.055	13.0
Ross Nonpareil	SH	M9	4/27	4.4	2.3	9/28	2.53	211b	0.15	0.68	3.53	1.059	14.0
Roxbury Russet	SW	Bud 9	5/1	3.3	3.2	9/21	2.47	202a	0.08	0.61	3.50	1.061	15.9
Royal Jersey	BSW	Bud 9	5/22	2.6	2.3	9/25	2.24	227	0.36	0.19	4.17	1.048	11.9
Russet King	SH	M9	4/26	2.4	-	9/26	-	279a	0.05	0.71	3.48	1.053	12.5
Smith's Cider	SW	Bud 9	5/2	4.0	3.6	10/1	2.94	262	0.08	0.55	3.39	1.050	11.8
Stembridge Jersey	BSW	M9	5/16	2.5	2.2	9/30	2.25	230	0.27	0.37	4.07	1.047	11.4
Stoke Red	BSH	M9	5/19	2.3	3.3	9/30	2.42	286b	0.28	0.66	3.49	1.045	11.7
Sweet Alford	SW	M9	5/4	4.0	3.9	10/7	2.75	219	0.07	0.16	4.47	1.049	11.8
Sweet Coppin	SW	M9	5/18	2.4	2.7	10/10	2.67	273b	0.11	0.20	4.03	1.048	11.3
Taliaferro (Colaw)	SH	Bud 9	5/6	2.8	3.3	9/30	2.97	246	0.09	0.77	3.12	1.047	11.4
Taylor's	SW	M106, M9	5/17	3.4	2.8	9/22	2.40	439b	0.14	0.20	4.29	1.051	12.4
Tom Putt	SH	M106	5/4	4.6	4.4	8/31	3.11	219b	0.11	0.67	3.38	1.044	10.9
Track Zero <sup>12</sup>	SW	Bud 9	5/2	3.8	3.8	10/9	2.76	212	0.10	0.18	4.13	1.053	12.3
Tramlett's, Geneva <sup>13</sup>	SH	M106	5/5	4.0	2.8	9/30	2.52	223	0.17	1.01	3.17	1.044	10.9
Vilberie	BSW	M106, M9	5/24	3.4	2.9	10/19	2.59	279b	0.41	0.27	3.91	1.044	11.5
Virginia Crab, Hewes	BSH	M9	4/19	4.6	3.9	8/31	1.55	282	0.19	0.91	3.29	1.060	14.8
Whidbey	SW	M9	5/7	3.7	3.8	9/18	3.08	282	0.12	0.69	3.46	1.049	11.9
Yarlington Mill	SW	M106	5/13	3.7	3.7	9/26	2.74	239	0.21	0.23	4.10	1.048	11.9
Zabergau Reinette	SH	M9	5/2	3.9	3.8	9/25	3.41	252	0.12	0.79	3.46	1.057	13.4

WSU Cider Program <http://www.cider.wsu.edu/>

<sup>1</sup>English cider classification system: bittersweet (BSW > 0.20 tannin, < 0.45 acid), bittersharp (BSH > 0.20 tannin, > 0.45 acid), sharp (SH < 0.20 tannin, > 0.45 acid), sweet (SW < 0.20 tannin, < 0.45 acid).

<sup>2</sup>Rootstock(s) on which a scion was evaluated for the period of observation (e.g. M106, M26); topworked trees indicated by Interstem/Rootstock.

<sup>3</sup>Bloom density rated subjectively (1-5) where 1 = very sparse bloom, unproductive; 2 = light bloom; 3 = moderate bloom; 4 = abundant bloom; and 5 = snowball bloom; thin early to reduce biennial bearing.

<sup>4</sup>Productivity rating taken annually pre-harvest (2011-2014, 2016-2017), utilizing a subjective rating scale (1-5) where 1 = sparse to no fruit; 2 = light fruiting; 3 = moderate fruiting; 4 = abundant fruiting; and 5 = overloaded fruiting, multiple fruit per spur with loaded branches bending to the ground. '-' indicates insufficient data collection for reporting.

<sup>5</sup>Fruit Size: Large = 3.2-3.9 in., Medium = 2.4-3.1 in., Small = 1.6-2.3 in; these relative categories were established based on our varietal publication (Miles et al, 2017).

<sup>6</sup>Juice yield of 25 fruit in mL/lb, averaged for 2015, 2016, and 2017 (a = 1 year data, b = 2 years data) as achieved with a MuliMax 30 shredder (2.8-horsepower; Zambelli Enotech, Camisano Vicentino, Italy) and Carezza bladder press (10.5-gal capacity, Enotecnica Pillan, Camisano Vicentino, Italy).

<sup>7</sup>The term "tannin" is used in adaptation of cider literature; expressed as tannic acid equivalents, in percent.

<sup>8</sup>Expressed as malic acid equivalents, in percent.

<sup>9</sup>pH = -log[H<sup>+</sup>]

<sup>10</sup>The ratio of the density of the juice to the density of pure water, unitless.

<sup>11</sup>Degree Brix was measured with a hand refractometer 2002-2008 and with a digital refractometer 2009 to current.

<sup>12</sup>Track Zero is a seedling found by cider maker John Ross in the old trolley yards, Seattle, WA.

<sup>13</sup>'Geneva Tramlett's' is a tentative designation; uncertainty exists whether what was received from USDA Geneva, N.Y. was the true 'Tramlett's Bitter'.