

Apple Cultivars for the Cool, Humid Climate of Northwest Washington

ROBERT A. NORTON*

Large scale commercial apple production in the Northwest is confined to the semi-arid areas on the leeward side of the Cascade Mountains, Wenatchee and Yakima being the important centers. The coastal area of northwest Washington, formerly a commercial production area in pre-irrigation days, is typified by 15 to 80 inches of rainfall, lower summer and higher winter temperatures. Spring frosts occasionally occur, damaging apricots and plums, but seldom is an apple crop lost for this reason. Spring winds and rain are more apt to cause poor fruit set than any other factor. Under such conditions insect activity is reduced and diseases such as apple scab, *Venturia inaequalis* and powdery mildew, *Podosphaera leucotricha* develop rapidly.

Though commercial apple production for the fresh market may be doubtful in a coastal region, the reliability of cropping makes home and local market production of apples feasible. The varieties presently grown are 'Yellow Transparent', 'Gravenstein' and 'King' (of Tompkins Co.) with a sprinkling of other older varieties ('Winter Banana', 'McIntosh', 'Golden Delicious', 'Red Delicious', 'Greening' and 'Wolf River'). 'Yellow Transparent' develops very well here and has a fairly high degree of resistance to scab and mildew. It is primarily used for sauce. 'Gravenstein', on the other hand, is highly susceptible to scab and somewhat resistant to mildew. It is also biennial bearing. When sprayed properly it can be kept free of disease. Its quality for dessert or cooking is

world renowned. Yet 'Gravenstein' is almost never seen in commercial markets because of its rather homely appearance. 'King' is an excellent quality dual-purpose fall apple which keeps fairly well but becomes oily in storage. It is not as severely attacked by apple scab and mildew as is 'Gravenstein'. 'King', like 'Gravenstein', is seldom seen in the market.

Since 1963 we have evaluated cultivars at this station in an attempt to find some superior to the above for both home garden and limited commercial use. All trees are grown on dwarfing rootstocks, predominantly EM 26, EM VII and EM IX. From one to seven single tree replications of each cultivar were established, the budding or grafting work usually being done at the site. A minimal spray program is used consisting of a delayed dormant lime-sulfur spray followed by a petal-fall spray of Cypress (for scab control) plus an insecticide for aphids and leaf rollers. Codling moth is not a problem. This program we feel is suitable for the home owner who wants the satisfaction of fruit growing without the effort of an intensive spray program.

Listed below are some of the cultivars being evaluated. Many not listed have been discarded or were recently acquired. We are not attempting to maintain a variety collection, but hope to demonstrate for the people of the area the availability of the many fine cultivars which they can grow easily. The evaluation of scab and mildew susceptibility is admittedly preliminary, since some of the cultivars have

*Horticulturist, Washington State University, Northwestern Washington Research and Extension Unit, Mount Vernon, Washington 98273.
Scientific Paper No. 3847. Washington State University, College of Agriculture, Project 1741.

been established in the orchard for only a few years. All are fruiting, however, and the close tree spacing, 10 x 15 feet, creates optimum conditions for tree to tree inoculation of diseases.

Considering disease resistance, appearance, dessert and cooking quality, the most promising cultivars to date,

in approximate order of maturity, are: 'Lodi', 'Julyred', 'Gravenstein' (Common, not the red strains), 'Summerred', 'Tydeman Red', 'Paulared', 'Chehalis', 'Macoun', 'Spartan', 'Idared' and 'Mutsu'. Newer cultivars which have fruited only a few seasons but which show distinct promise are 'Raritan', 'Empire', 'Jonagold', 'Sinta' and "Spingold".

Table 1. Scab and mildew susceptibility of apple cultivars.

Cultivar	No. of yrs. in orchard	% Infection ¹		General rating ²	Remarks
		scab	mildew		
Barry	6	30	20	4	Too dark, lacking quality.
Beacon	6	70	—	2	Unattractive, poor quality.
Belle de Boskoop	5	10	—	4	Cooking only, large fruit, high yield.
Buckley Giant (Ohlson)	5	20	50	5	Very large fruit, mediocre quality, susceptible to bitter pit.
Chehalis	5	7	10	7	Scab resistant, early Golden type, mild flavor, vigorous growth.
Chieftain	6	70	—	4	Delicious type with less color, tends to overbear.
Davies Pear	5	20	—	6	Similar and perhaps better quality than Yellow Transparent.
Delicious, Red	4	60	—	2	Unadapted to environment, lacks size, color, susceptible to scab.
Empire	4	60	—	8	Very promising, McIntosh type, needs scab control.
Esopus Spitzenburg	6	60	—	4	Variable quality, no commercial value.
Fameuse (Snow)	6	55	5	4	Good dessert quality, oversets, lacks size.
Fortune	5	15	—	5	Not attractive but has good dessert quality when mature.
Golden Delicious	6	80	—	3	Severe scab, doesn't color some years.
Granny Mac	5	60	—	4	Fair quality but must be picked in late November and stored.
Granny Smith	5	50	20	6	Better quality than Granny Mac, pick in late November.
Gravenstein, Common	60	10	7	7	Excellent quality but poor shape, color. Scab susceptible.
Gravenstein, Red	7	32	—	5	Good quality but inferior to common Gravenstein, dual purpose.

¹Approximate percentage of fruits showing some scab infection or twigs showing mildew infection. Subjective visual ratings only. (—) No mildew observed.

²Rated on 1-10 basis with 10 being best rating.

Table 1. (Cont.)

Cultivar	No. of yrs. in orchard	% Infection ¹ scab	% Infection ¹ mildew	General rating ²	Remarks
Hanson Spitzenburg	5	60	20	5	Little better than Esopus Spitzenburg.
Hudson Golden Gem	3	10	—	—	Not sufficiently evaluated here.
Idared	8	45	40	8	Excellent in all but dessert quality which is fair.
James Grieve	5	30	—	5	Good dessert quality at prime maturity but loses quality rapidly.
Jerseyred	5	70	—	3	Late maturity, scab susceptible.
Jonagold	5	40	—	8	Promising, excellent quality but poor finish.
Jonalicious	9	14	—	7	Good dessert, lacks color
Jonnee	2	40	30	—	Not evaluated.
Julyred	6	80	20	5	Excellent quality but requires scab control.
Kendall	6	50	—	3	Mediocre color and quality.
Linnton	5	20	—	7	Unusual flavor (Anise), appeals to the connoisseur.
Lodi	3	10	—	8	Similar to Yellow Transparent, one week later, firmer.
Macoun	5	40	13	9	Excellent dessert, color not overly attractive.
Mantet	6	80	40	4	Not attractive, drops, dessert quality not lasting, scab.
McIntosh, Kidder	3	40	30	—	Not evaluated sufficiently.
Melba, Red	5	60	15	5	Excellent quality when mature, susceptible to scab.
Melrose	5	48	27	6	Excellent keeper, finish and uniformity mediocre.
Mingan	5	35	30	4	Greenish apple lacking in dessert quality.
Mio	4	20	—	6	Promising for fresh market, doesn't store well.
Mollie's Delicious	5	50	30	5	Unattractive, but good dessert apple.
Multnomah	6	20	20	—	Slow to come into bearing, fruits very large, no commercial value.
Mutsu	8	65	—	7	Fruits don't color some seasons, scab susceptible, good quality.
Niagara	6	90	20	4	Inferior to McIntosh in color and flavor.
NJ 32	5	90	—	5	Early dessert type, Gravenstein season, scab susceptible.
NJ 36	6	80	50	6	Good quality, early dessert type, Transparent season, scab susceptible.
Jerseymac (NJ 38)	5	90	50	3	Inferior to Red Melba. Scab sus-

Table 1. (Cont.)

Cultivar	No. of yrs. in orchard	% Infection ¹		General rating ²	Remarks
		scab	mildew		
NJ 46	2	55	—	—	susceptible.
NY E-18	4	30	—	7	Not evaluated sufficiently.
NY 44410-1	5	53	27	4	Similar to Gravenstein but more uniform, larger fruit.
NY 44428-5	4	40	70	—	Late ripening, poor finish, greenish flesh.
NY 49-19	4	50	70	—	Not evaluated sufficiently, McIntosh type.
Oriole	5	20	20	6	Not evaluated sufficiently.
Paulared	5	10	—	7	Fruit large, uniform, fair-good quality, consistent bearer.
Puritan	6	50	—	4	Excellent appearance, dessert quality, mediocre, promising market type.
Quinte	5	40	—	4	Good quality, early, susceptible to pre-harvest drop, inferior to Summerred.
Raritan	6	40	25	7	Attractive but inferior quality.
Ruby	6	70	—	3	Good dessert quality, appearance mediocre.
Sinta (CDA 8C-4-5)	2	60	—	—	Too late, excellent color.
Spartan	3	14	—	9	Too early to rate but looks promising as early Golden type with pink blush.
Spencer	6	60	—	5	Excellent color, quality, keeps well, medium size.
Spigold	5	20	—	6	Good dessert quality, variable size and color.
Spur Golden	5	50	—	5	Excellent quality, may be too large, late.
Stayman, Early Red	6	90	40	2	Doesn't color consistently.
Summerred	6	45	—	8	Poor color, quality, scab susceptible.
Sunset	5	10	—	4	Excellent quality, color, needs careful thinning for size.
Tohoku-2	5	23	7	7	Unattractive, fair quality.
Tydeman Red	8	10	—	7	Attractive, excellent color, medium size.
Wagener	6	50	20	4	Uniform, attractive, poor growth habit, fair quality.
Wealthy, Red	6	30	20	7	Lacks color, quality, excellent finish.
Weatherly Early Spy (Weatherberry)	6	20	—	7	Excellent color, fair quality.
Williams Early Red	6	30	30	4	Attractive, large, fair dessert.
					Attractive, mediocre quality.