

A Survey of New Early-Coloring Red Sports of Delicious Apples

QUENTIN B. ZIELINSKI

Corvallis, Oregon*

This year, as perhaps never before, there is widespread interest and discussion among growers, processors and fruit handlers as to the possible merits of the various new early-coloring sports of Delicious. Therefore, an attempt has been made to tabulate all of the known or announced new Delicious bud sports. This information, as tabulated in Table I, presents the pertinent information for each of twenty-eight bud mutations affecting red skin color. Growers or field-men knowing of any additional ones now, or in the future, are urged to report them to the county agricultural agents or to the Horticultural Department of each state. This will facilitate work in evaluation studies and may uncover new strains of superior merit.

When considering the advisability of planting any of the new red sports, it is well that growers understand the benefits and possible limitations that some strains may possess. Therefore, we would like to point out the following points which should be kept in mind.

Not All Sports Are Equally Desirable

Both the experience of fruit growers and experimental workers have shown that some sports are not superior. For example, Bank's Red Gravenstein and Red Northern Spy have not been successful varieties. Many growers are not well satisfied with the red sports of Jonathan, for they do not seem to size up well, and the fruit does not have the true flavor of the parent variety. Likewise, while over eleven sports of

common Delicious are known, only a few of these have ever been planted commercially.

Color Pattern

Color patterns of the red-colored sports can be classified into two groups: solid blushed and solid striped. Differences of opinion exist as to which is best for the apple areas of the United States. Many growers now seem to prefer the solid blushed type. Some growers feel that these sports are less apt to revert to the original type. Among the solid blushed sports are such varieties as Chelan, Starkrimson (Bisbee) and Azwell. Growers in early districts are showing some preference toward the striped types that are darker in color. The trends now observed could very well change in the future as new types appear.

Stability of the color pattern should be of vital interest to all growers. It is rather common knowledge that the striped color pattern has varied in Starking and Shotwell even though the original tree has remained constant. There are reports circulating which are not verified, that this tendency is being exhibited in the Red King and Neff strain in 1956 in Washington. Other instances of color instability are well known in the Max Red Bartlett pear and in some sports of Red Rome Beauty apples.

Quality of Red Color

The quality of the red skin color of the fruit contributes much to the market value, particularly the inten-

*Associate Professor, Dept. of Horticulture, Oregon State College.

Early Coloring Red Sports of Delicious Apples, as of 1957

<i>Parent Variety</i>	<i>Red Sport</i>	<i>Entire Tree or Limb Sport</i>	<i>Tree Type</i>	<i>Color Pattern</i>	<i>Origin of Bud Sport</i>	<i>Date Discovered</i>	<i>Patented before 1957</i>
Red Delicious (Common)	Redwin	Tree	Standard	Striped red	Peshastin, Wash.	1925	No
Red Delicious (Common)	Starking Delicious	Limb	Standard	Striped red	Monroeville, New Jersey	Before 1924	Yes
Red Delicious (Common)	Bridgham Delicious	Limb	Standard	Striped red	First Creek, Washington	1930	No
Red Delicious (Common)	Okanoma Delicious	Tree	Spurred semi-standard	Blushed Richared type	Omak, Washington	Before 1925	No
Red Delicious (Common)	Richared Delicious	Limb	Standard	Solid red to blushed	Moniter, Washington	Before 1926	No (Trademark)
Red Delicious (Common)	Vance Delicious	Limb	Standard	Solid red	Albemarle, Virginia	1930	No
Red Delicious (Common)	Shotwell Delicious	Limb	Standard	Striped red	Wenatchee, Washington	1928	Yes
Red Delicious (Common)	Woeke Delicious	Limb	Standard	Solid red	Salem, Oregon	1950	No
Red Delicious (Common)	Red Prince Delicious	Limb	Standard (?)	Solid red	Martinsburg, W. Virginia	1954	No
Red Delicious (Common)	Jardine Red Delicious	Limb	Standard (?)	Solid red to blush	Oliver, B. C., Canada	1953	No
Red Delicious (Common)	Hardeman Red Delicious	Tree	Standard	Intense red, striped	Red Hook, New York	1951	No
Richared	Royal Red Delicious	Limb	Standard	Solid red	Wenatchee, Washington	1950	Yes
Starking Delicious	Red King Delicious	Limb	Standard	Striped red	Riverside, Washington	Before 1950	Yes
Starking Delicious	Earli-Red Delicious	Limb	Standard	Striped red	Pateros, Washington	1952	No
Starking Delicious (?)	Atwood Red Delicious	Limb	Standard	Striped red	Wenatchee, Washington	1952	No
Starking Delicious (?)	Chelan Delicious	Tree	Semi-standard,	Solid dark red	Manson, Washington	About 1948	No
			spurred				
Starking Delicious	Watson Hi-Red Delicious	Limb	Standard	Mixed striped and solid red	Cashmere, Washington	Before 1948	No
Starking Delicious	Bisbee Delicious	Tree	Spurred semi-standard	Solid red to blush	Hood River, Oregon	About 1950	Yes
Starking Delicious	Rypcznski Delicious	Limb	Standard	Striped red	Hood River, Oregon	1954	No
Starking Delicious	Red Queen Delicious	Limb	Standard (?)	Striped red	Paw Paw, W. Virginia	1952	No
Starking Delicious	Hi Early Red Delicious (Neff strain)	Limb	Standard	Striped red	Pateros, Washington	1946	Yes
Starking Delicious (?)	Show strain	Tree	Spurred	Solid red	Parker, Washington	1955	No
Starking Delicious (?)	Azwell	Tree	Spurred	Solid red	Azwell, Washington	1954	No
Starking Delicious	Houser	Limb	Standard	Solid red	Selah, Washington	1956	No
Starking Delicious	Ryan	Limb	Standard	Solid red	Wapato, Washington	1956	No
Starking Delicious	Hariold	Limb	Standard	Solid red	Zillah, Washington	1956	No
Starking Delicious	Williams	Tree	Standard	Solid red	Yakima, Washington	1955	No
Shotwell	Hutchinson	Limb	Standard	Striped red	Tonasket, Washington	1955	No

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sity of the red color and its brightness. In some early-coloring sports a bronzing or buckskin color has developed in hot weather, and possibly this could be important in early ripening districts such as the Milton-Freewater area of Oregon. Where early hot weather occurs the bronzing may develop early. In later ripening districts, where red coloring occurs at a later period, the red over-color may well mask out the bronze undercolor. Thus, early coloring sports may be less advantageous or less acceptable than now anticipated in very early coloring districts. Another factor is the final color developed in cold storage. Some early coloring sports may well become too dark or black during the storage period.

Maturity of Fruit

Maturity of the fruit is also important, particularly in determining the picking date and its influence on the storage life. In general, most early coloring red sports of Delicious do not actually ripen earlier than Starking or Shotwell. W. M. Mellenthin, Superintendent at the Mid-Columbia Branch Station, has found this to be true in tests in that area. One possible exception is the variety Vance Red Delicious, a bud sport of the common Delicious that occurred in Virginia. Recent work at the New York Station indicates that in addition to coloring earlier and more intensely, this variety also matures earlier.

Tree Form

Change in tree type or tree form is associated with the red-color factor in some of the red sports. Two types are now found: standard and a spurred tree-type. The spurred tree tends to produce a heavy set of lateral spurs, resulting at maturity in trees about $\frac{2}{3}$ or $\frac{3}{4}$ the size of standard trees. Those promoting this type are report-

ing younger and heavier production, more consistent and even bearing, and even more frost resistance. Some available evidence, however, indicates that the spurred-type of tree, being shorter with more of its bearing surface nearer the ground, is more apt to be hurt by frost than the standard tree, which is taller with more of its bearing surface further from the ground. This would happen under low temperature situations where excessive radiation of heat at night from the surface of the ground resulted in freezing temperatures up to a few feet above ground level while non-freezing temperatures prevailed at higher levels.

Fruit Shape

Fruit shape is particularly important to western apple growers since this is more or less a market "trademark" for western-grown apples. Western Delicious apples are notably more blocky with a more distinct and prominent five-point crown than eastern Delicious. This is characteristic of some sports, notably Starkrimson. This shape may or may not be characteristic of all sports and it should be watched closely because of its market importance.

Fruit Flavor

Fruit flavor, of course, is important in any variety or sport. Actually, most red colored sports of Delicious are so new that very little information is currently available. Our experiences, however, with red sports of Jonathan, Gravenstein and Melbas would indicate that we can also anticipate some variations in flavor among Delicious sports. Thus, flavor and aroma should be carefully noted by growers, fieldmen and processors when testing and comparing the qualities of each sport.

The needs of the various apple districts undoubtedly are different. Most of the newer sports are of too

recent origin to recommend at present for any particular area. Some early trends in grower preference, however, can be noted. In new plantings, growers in the early ripening areas seem to prefer the darker solid-striped types. In the later ripening districts much interest is shown in the solid red blushed types such as Starkrimson, or Royal Red.

In all areas, growers should be cautioned with regard to the limited range of adaptation of many varieties. The performance of sports can well vary in characteristics from district to district. Growers would be wise not to assume that the color and quality of a variety in another district will be reproduced in their orchard. Selection of a sport for planting, therefore, should be done carefully and deliberately, and on the basis of as much information and first hand knowledge as is available. Particular stress should be placed in the preliminary performance of so-called "test trees" in the fruit grower's district or on his own farm.



Grower Discusses Apple Stocks

I've gone over our Malling block containing standard varieties on Mallings I, II, VII and XIII, and have made careful observations and notes; but the trees are only two to four years of age, and difficult to judge as yet. Our Mallings just need more testing for tree responses and yields in summer heat, winter cold and spring wetness.

I wish we could predict the answers, because I don't want to plant one more standard tree; but there are still too many unknowns in regard to dwarfs that only experience can clear up. At this point it could be disastrous to make large plantings of the wrong

type of dwarf tree in our area.—*Mark Beyers, Vincennes, Indiana.*



Yellows in Strawberries

R. D. Reid, of the Scottish Horticultural Institute, has the following to say about the inheritance of susceptibility to June yellows in strawberry in *The Grower*:

"Our observations would suggest that a genetic factor for yellows may be present in most if not all strawberry varieties, and the risk of this factor developing into the active June yellows or streak form is neither certain nor predictable."

"Much capital has been made of the fact that in America the variety Howard 17 developed June yellows nearly 30 years ago, and that a number of varieties, including Blakemore, which have been bred from it, have also become affected. The facts are that Howard 17 has proved such an excellent breeding parent that the great majority of varieties grown commercially in America have been bred from it, so that while it is true that Howard 17 is parent of a number of varieties which have developed June yellows, it is equally true that it is the parent of a vastly greater number of varieties which have never shown any trace."

"Our own observations have tended to support the view that the inheritance of June yellows is dependent upon the state of development of the malady in the parent plant. A plant of Climax or any other variety in an advanced stage of June yellows will yield seedlings of which the majority will develop June yellows at an early stage, but we still have seedlings raised from Climax 11 years ago in which there is no suggestion of June yellows."