Washington, A Peach With Outstanding Frost-Escaping Ability

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Prevalance of blossoming season frosts in the Blacksburg, Virginia area has interfered seriously with the peach and nectarine breeding program of the Virginia Agricultural Experiment Station. The period of 1948 through 1959 included five years in which serious frost damage occurred to peaches and nectarines, as shown in the following table.

TABLE I. Frost damage to Commercial Peach Varieties at Blacksburg, Virginia

Year	*Estimated percent damage to crop*
1949	100
1950	90
1953	75
1955	95
1957	50

The freeze in 1950 demonstrated pronounced variability in frost-escaping ability of various varieties and selections of peaches and nectarines. The fruit crop was destroyed completely on Elberta, Sunhigh, Triogem, Redskin, Golden Jubilee, J. H. Hale and other varieties. Veteran, Vedette, Fisher, Erly-Red-Fre, Colora, Sunrise, and several V. P. I. seedling selections came through with full crops of fruit. Intermediate levels of ability to escape damage from frosts were also demonstrated.

In 1953 a severe frost occurred on April 22, three weeks after the full bloom stage. The varietal response to the frosts as demonstrated by loss of crop was very similar to that in 1950. These observations indicated that there is pronounced variation in the ability of peach varieties to withstand frost damage to the developing buds, blossoms and young fruits. The variation in ability to escape frost damage appears to be of a physiological nature and is not the result, entirely, of later blossoming, nor does it appear to be due to the development of more or less latent blossom buds after frost damage has occurred to the major wave of buds.

The variations in frost-escaping ability observed in 1950 led to the conclusion that breeding for expression of that character could be expected to yield commercially acceptable varieties of peaches that are at least as hardy at the blossoming stage as any varieties then in existence. That goal has been a major objective in the peach and nectarine breeding program since that time. All crosses made since 1951, other than those made either for genetic studies or to retain some specific character, have involved at least one hardy parent.

Among the varieties and selections that bore full crops of fruit in 1950, was V.P.I.-15, which was grown from an unidentified lot of pits planted in 1938. One seedling from this lot was selected for further testing because of its fruit size, firm flesh, attractive color and better than average quality

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The tree lacks vigor however, and the blossoms are pollen sterile. After its demonstration of frost-escaping ability, crosses were made on it, using pollen of Sunhigh in addition to several other varieties. This cross resulted in 225 seedlings. Most of them blossomed in 1954 and bore fruit that indicated it to be an outstanding cross. Eighty-one seedlings were held for further study.

The 1955 season presented an opportunity to test the frost-escaping ability of these seedling selections when the official temperature at Blacksburg dropped to 10°F. on March 27. Peach blossoms in the V.P.I. orchard varied generally from the pink to the balloon stage, with some trees having some buds retarded in the well swollen grap tip stage, and some trees having a scattering of open blossoms. Severe damage to the buds and blossoms was observed immediately. A few days after the freeze apparently undamaged buds, blossoms and pistils were found on some trees. As the season progressed heavy sets of fruit were noted on trees of the varieties and seedling selections that had shown evidence of frost hardiness in 1950 and 1953. Some seedlings of the 1951 crosses also had good survival of buds and blossoms. Among these were 10 seedlings of V.P.I-15 x Sunhigh parentage.

The set of fruit on some varieties and seedlings made fruit thinning essential. Among the seedlings of this parentage that required thinning of the fruit was D-36 which had been described in 1954 as having outstanding fruit characters. Its fruit characters were again described as being outstanding in 1955.

The 1956 season presented no frost hazard. The D-36 seedling again was noted as having outstanding fruit characters.

The 1957 peach blossoming season was again beset with frosts, and severe damage occurred to the buds of varieties and selections that had been reported as being tender to frost in previous years. The D-36 seedling again came through with a medium crop of fruit, but did not require thinning. The selection number V.P.I.-49 was assigned to D-36 when the fruit ripened, and it was again observed to be outstanding.

V.P.I.-49 set a heavy crop of fruit in 1958 and was thinned heavily. Young trees of V.P.I.-49, which were budded in 1954, bore fruit in 1958 and demonstrated the same merits shown by the original tree. The comments on its fruit characters were so outstanding that decision was made to propagate it for naming and releasing in the summer of 1959.

Selecting a name for this new variety called for considerable thought and discussion. Director H. N. Young, of the Virginia Agricultural Experiment Station, suggested a plan for naming new peach varieties developed at the Virginia Agricultural Experiment Station after Virginians who were elected to the presidency of the United States. The plan seemed to be

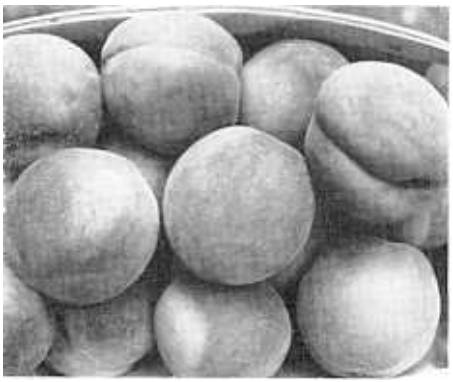

Figure 1. **Washington peach is average in size, with a medium to bright red overcolor covering about three-fourths of the fruit.**

a unique, desirable and practical one since Virginia has contributed six of her sons to the highest office in our land. The name of George Washington seemed a most appropriate one to assign to this first new variety of peach developed through the research efforts of the State that gave him to the Nation.

The fruit of Washington (See Fig. 1) ripens at Blacksburg about 21 days before Elberta and three days before Sunhigh. The fruits are round-ovate with slightly unequal halves, and may have a very slight tip some seasons. The skin has a bright yellow ground color and usually about three-fourths medium to bright red overcolor. The skin pubesence is short. Fruit size of Washington has been above average, approaching that of Sunhigh, even when it has a full crop of fruit. The flesh is orange-yellow with bright red at the pit, and is fully freestone. The flesh is medium to fine texture and very firm for a freestone peach. The flavor resembles that of Sunhigh but is slightly more acid and has a slight bitterness suggestive of its V.P.I.-15 parent. Fruit grown at Blacksburg has been rated as very close to that of Sunhigh in quality. The fruit ripens uniformly and hangs well, even after becoming eating-ripe.

The tree grows vigorously in the nursery and in the orchard. The bud-set on the twigs is much heavier than that of Sunhigh and comparable to that of Halehaven. The blossoms are showy and have good pollen. Brown rot control on Washington has presented no problem at Blacksburg. No studies of chilling requirements were conducted, since that problem does not exist in Virginia. It appears, likely, however, that Washington has a high chilling requirement.

Trees of Washington were distributed as Selection No. V.P.I.-49 to 18 agricultural experiment stations in the United States and Canada and to 31 growers in Virginia in 1956, 1957 and 1958. Trees are available from two commercial nurseries.

Suncrest Peach

The peach variety Suncrest has recently been introduced by the U.S.D.A. Suncrest resulted from the pollination of the variety Alamar with Gold Dust at the U.S. Horticultural Field Station, Fresno, California in 1952. It fruited first in 1956. Suncrest has been tested by growers throughout the San Joaquin Valley of California and to a limited extent by the U.S.D.A. in the east.

Suncrest ripens about ten days before Elberta. The fruit is large, round and freestone, and has light pubescence. It is two-thirds covered with a bright attractive red blush over a yellow ground color. The flesh is yellow, firm but melting, and of good texture and flavor. It has been shipped successfully as far east as West Virginia with satisfactory market acceptance.

Trees of Suncrest are vigorous, productive, and require thinning. Blossoms are large-petaled and self-fertile, opening with Elberta. Leaf glands are uniform. At Beltsville, Maryland, Suncrest has been susceptible to bacterial spot.

Although no trees of Suncrest are available, information on sources of budwood may be obtained from J. H. Weinberger, U. S. Horticultural Field Station, 2021 S. Peach Avenue, Fresno 2, California.

There are reports from Virginia growers that Vance Delicious, which colors 7 to 10 days before standard Delicious, does not appear to darken as much as Richared in Virginia.