EB0914

CRITICAL TEMPERATURES

FOR BLOSSOM BUDS

PEACHES

The temperature at which fruit buds are injured depends primarily on their stage of development. Buds are most hardy during the winter when they are fully dormant. As they begin to swell and expand into blossoms, they become less resistant to freeze injury.

Not all blossom buds are equally tender. Resistance to freeze injury varies within trees as it does among orchards, varieties, and crops. Buds which develop slowly tend to be more resistant. As a result, some buds usually are killed at higher temperatures, while others are resistant at much lower temperatures. To indicate this range, a new set of temperature values have been developed. It shows the average temperatures required to kill 10% and 90% of the buds as found in research at the WSU Research and Extension Center, Prosser, from 1964 to 1970.

The range in temperatures at which buds are killed is a factor in determining the need for frost control. Orchards with a large number of buds should be able to stand more frost than those with only a light set of buds.

In using the temperatures, consideration should also be given to weather conditions preceding cold nights. Prolonged cold weather will tend to increase bud hardiness during the early stages of bud development.

These new values do not replace the temperatures previously given, but provide additional information on critical temperatures.

James K. Ballard, former Washington State University Extension agent, Yakima County;
E. L. Proebsting, former WSU horticulturist; and
Ronald B. Tukey, WSU Extension horticulturist, deceased.
Photos by *Harlan Mills,* former WSU Senior Experimental Aide.

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EXTENSION

1 – First Swelling

2 – Calyx Green

3 – Calyx Red

4 – First Pink

5 – First Bloom

6 – Full Bloom

7 – Post Bloom

PEACHES

Critical Temperatures for Blossom Buds*

Bud Development Stage	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Old Standard Temp.[1]	23	---	---	25	---	27	30
Avg. Temp. for 10% Kill[2]	18	21	23	25	26	27	28
Avg. Temp. for 90% Kill[2]	1	5	9	15	21	24	25
Average Date (Prosser)[3]	3/7	3/16	3/19	3/29	4/3	4/11	4/18

*For Elberta.

[1]Critical temperatures as previously published.

[2]Average temperatures found by research at the WSU Research and Extension Center, Prosser, to result in 10% and 90% bud kill.

[3]Average date for this stage at the WSU Research & Extension Center.