PROJECT NO.: 6263 Progress/Termination Report

TITLE: Orchard Factors Affecting Cherry Firmness and Quality

PERSONNEL:

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REPORTING PERIOD: 1985-95

ACCOMPLISHMENTS AND RESULTS:

1. Evaluation of fruit quality of 100 selections from the WSU-Prosser breeding program has thus far resulted in the commercial release of several new high quality cultivars to expand the season of Pacific Northwest sweet cherry production. Now available, in terms of ripening order, are 'Chelan', 'Cashmere', and 'Index' dark red cherries that ripen during the two weeks before 'Bing' harvest, and 'Olympus', a dark red cherry that ripens after 'Bing'. A significant number of 'Chelan' have been planted commercially. Further evaluation of advanced selections is on-going as part of a separate project "Manipulating Fruit Ripening for Sweet Cherry Market Niches" under the direction of Prosser pomologist G.A. Lang.

2. Pruning after bloom did not regulate cropping well in terms of fruit size improvement.

3. At least 13 individuals from the 'Bing' clone plot have been identified that exhibit significantly better fruit firmness and/or size traits from the standard clone, 'Bing' OB-260'. A second generation orchard of these clones has been planted to continue researching genetic differences among the collection. In some cases, the differences in firmness have been associated with positive tests for Prunus necrotic ringspot virus (PNRSV) or prune dwarf virus (PDV), which is under continuing evaluation in a separate project (7719 - Identification, Epidemiology, and Control of Sweet Cherry Diseases) under the direction of Prosser virologist G.I. Mink. Fruit from clones with PNRSV tended to mature later, and in some years exhibit greater post-storage bruising and pitting, than fruit from virus-free trees.

4. A sulfonyl urea compound, which is used as a wheat herbicide at rates nearly 1000 times greater than our experimental use as a growth regulator on cherries, has significantly improved fruit firmness, as great or greater than gibberellic acid, without delaying ripening. It was not effective as a cherry thinning agent. Research is on-going to study other sulfonyl urea analogs and variability in performance due to application parameters and stage of fruit development at application.

PUBLICATIONS:

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