

Consumer Responses to New Cherry Varieties

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'Bing' is the most important sweet cherry variety grown in the Pacific Northwest. Until recently, it comprised nearly all of the fresh market cherries produced in this region. However, production of other cultivars has recently increased with 'Bing' now comprising 72.4% of the total fresh market sweet cherry production in Wasco County, Oregon in 2004 and 'Lapins', 'Skeena', 'Regina' and 'Sweetheart' combining to comprise 22.3% of the total (Seavert, 2005).

With cherry acreage rapidly expanding worldwide producers need to offer varieties to consumers that are going to encourage repeat buying. Research shows that if a consumer has a poor experience in purchasing cherries, they will not make a second purchase for six weeks. If growers hope to sell all the cherries being produced around the world at a good price, they must offer consumers high quality, flavorful cherries from May into August. Knowing the potential receptivity of a variety by the consumer will help growers make informed decisions on what to plant.

Four early-season varieties were tested in 2005, 'Chelan', 'Tieton', 'Santina', 'Benton' and four late-season varieties in 2004 and 2005, 'Lapins', 'Skeena', 'Regina', and 'Sweetheart'. 'Bing' was used as the standard for comparison in each trial. All samples were evaluated prior to the test for soluble solids content (SSC) and flesh firmness (Tables 1 & 2).

Samples were taken to open markets in Portland, Oregon where consumers were asked to evaluate cherries, for attributes such as size, color, shape, stem preference and overall liking. In 2004 and 2005 nearly 200 people participated in each trial.

When asked to rank cherries based on color, more participants responded positively to the lighter colored cherry represented by 'Sweetheart' than to either the medium or dark cherry, however, there is no significant difference between the three colors. (Figure 1)

Cherry size preference was evaluated using 'Bing' fruit at 29.76, 25.4, and 21.43 mm. There was a significant difference shown between all three sample sizes. There was a strong preference by consumers for large fruit. Consumers preferred the largest cherry, which received 68% of the most preferred ranking. The least favorite was the smallest cherry, which received 78% of the least preferred ranking. (Figure 2)

A round cherry, represented by 'Sweetheart', was the shape that consumers preferred least. There was no significant difference between preference for a blocky cherry ('Skeena') and a heart shape represented by 'Attika' (Figure 3). Based on these data there seems to be no justification for buyers to discount heart shaped cherries such as 'Attika', a practice that has previously taken place.

In 2004 and 2005 consumers showed a strong preference for cherries with stems (Figure 4, 2004 data). However, 58% of consumers said that they would pay the same for stemless

cherries and 4% said that they would pay more for the stemless product (Figure 5). Although consumers preferred a stem-on product there seems to be a potential, although limited market, for a stemless cherry sold at a profitable price for growers.

In 2004, 'Regina' scored the highest in overall liking for late varieties and was significantly different from the other cultivars. The other four cultivars were not significantly different from one another; however, 'Bing' scored the lowest of all varieties (Figure 6).

When asked to rank the cherries from most preferred to least preferred based solely on taste, 'Regina' was significantly different from the other cultivars and was ranked #1 by consumers. 'Bing' was rated last and was significantly different from the other cultivars. 'Sweetheart', 'Lapins' and 'Skeena' ranked between these other cultivars and were not significantly different from each other, but were significantly different from 'Regina' and 'Bing'. These data were surprising since Oregon growers have considered 'Regina' a weak tasting cherry while 'Bing' has always been considered to have an excellent flavor.

In 2004 the most important reason consumers chose the cherry they liked the most was sweetness. Skin color, tartness and texture were not important reasons for preferring a cherry (Figure 9). Lack of flavor and being too sour were the two biggest reasons consumers disliked cherries. Juiciness and not being sour enough were not important reasons for disliking a cherry (Figure 10).

In 2005, 'Bing' was the highest scoring variety for overall liking for both the early and late variety trials (Figures 7 & 8). All varieties ranked very high for firmness. 'Bing' and 'Benton', the two highest ranking early- to mid-season variety cherries ranked high in both sweetness and tartness. The lower ranked early variety cherries, 'Chelan', 'Tieton' and 'Santina' ranked low in both sweetness and tartness. For the mid- to late-season varieties 'Bing' and 'Sweetheart' the two most liked cherries, ranked high in sweetness and tartness. 'Skeena', 'Regina' and 'Lapins' had high ratings of "not quite sweet enough" and "not quite tart enough" (data not shown).

These data would suggest that consumers prefer cherries that have strong flavor and an even balance between sweetness and tartness. The low preference for the three earliest varieties, 'Chelan', 'Tieton' and 'Santina' would imply that there is a need for better tasting varieties in this early harvest window. All of the mid- to late-season varieties seemed to be acceptable to consumers.

Acknowledgements

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Literature Cited

Seavert, C. 2004. Wasco County Sweet Cherry Production Results. In Hort Update, OSU Wasco County Extension Service. 2:7.

Tables

Table 1. Quality parameters of early- to mid-season fruit used in sensory evaluation survey.

Variety	Soluble Solids (Brix)	Flesh Firmness (g/mm)
Chelan	20.0	529
Tieton	16.5	310
Santina	15.6	267
Benton	21.2	321
Bing	20.9	267

Table 2. Quality parameters of mid- to late-season fruit used in sensory evaluation survey.

Variety	Soluble Solids (Brix)		Flesh Firmness (g/mm)	
	2004	2005	2004	2005
Bing	19.5	19.6	291	282
Lapins	19.6	17.0	383	372
Regina	20.2	21.0	348	350
Skeena	19.1	18.5	375	362
Sweetheart	22.7	20.5	427	441

Figures

Figure 1. Percentage of consumers who preferred dark, medium, and light skin color.



Figure 2. Percentage of consumers who preferred large, medium and small fruit size.

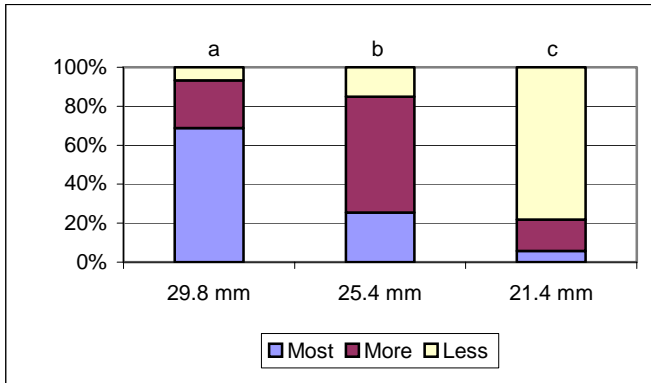


Figure 3. Percentage of consumers who preferred cordate, blocky or round fruit.

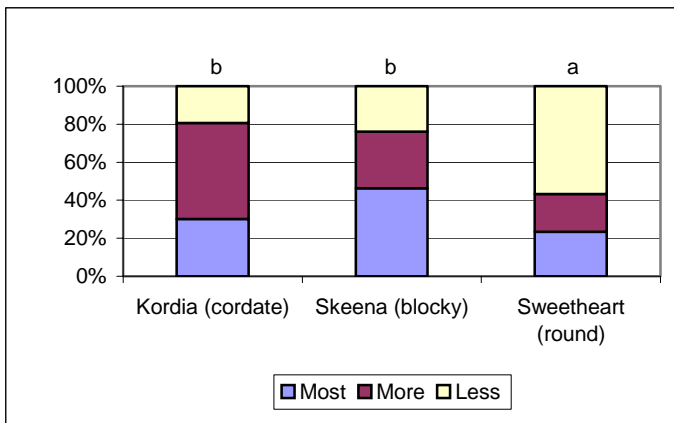


Figure 4. Consumer preference for stem-on or stemless cherries in the 2004 trial.

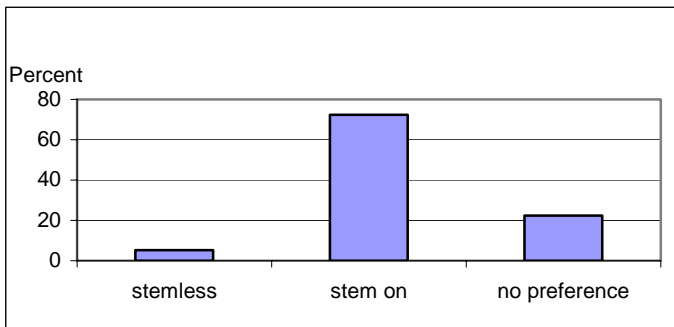


Figure 5. Consumer purchase intent for stemless cherries in 2004, expressed as percentage.

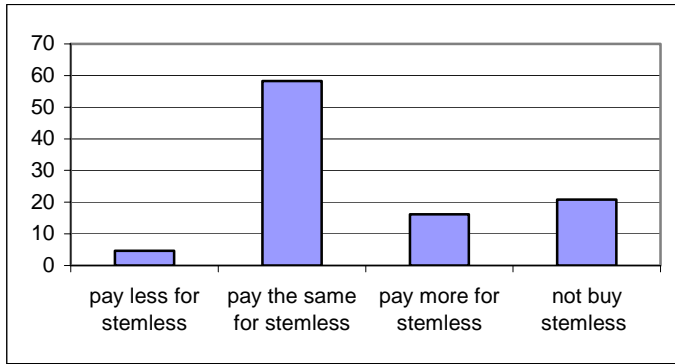


Figure 6. 2004 Overall liking of mid- to late-season varieties.

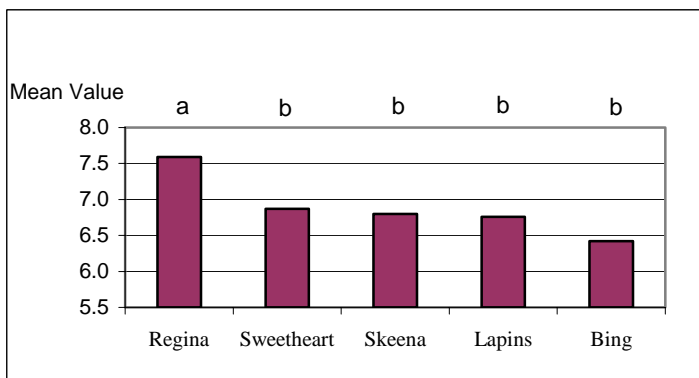


Figure 7. 2005 Overall liking of mid- to late-season varieties.

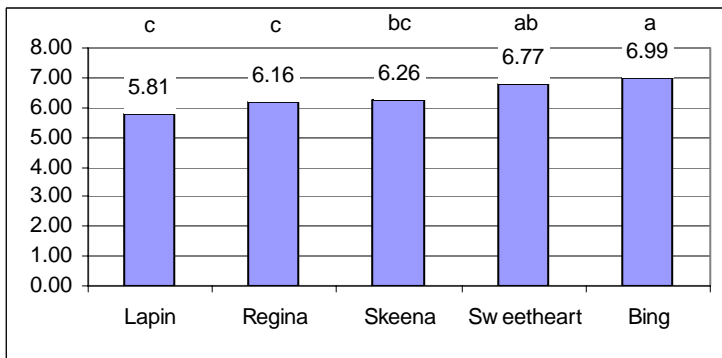


Figure 8. 2005 Overall liking of early- to mid-season varieties.

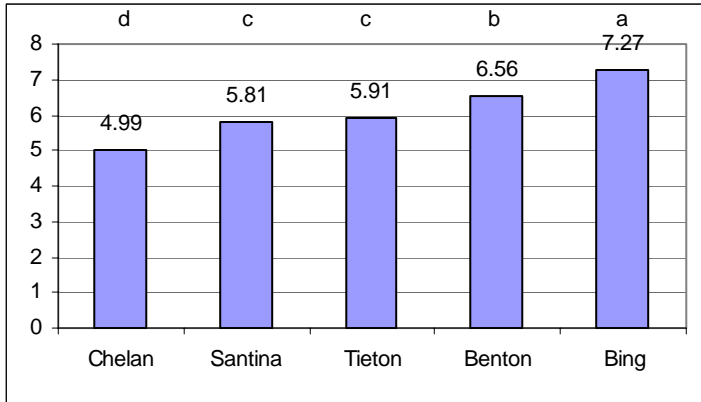


Figure 9. Reason consumers preferred favorite cultivar in 2004.

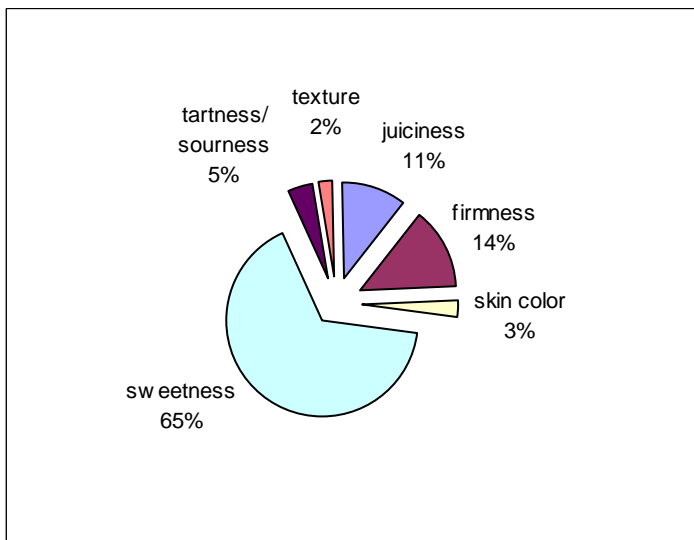


Figure 10. Reason consumers disliked least favorite cultivar in 2004.

