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EFFECT OF VARIETY AND FRUIT WAXES ON SENSORY EVALUATION OF RABBITEYE BLUEBERRIES

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INTRODUCTION

The original blueberry variety evaluation block at Overton was established in 1973. Since that time, the blueberry plantings have been expanded at the Overton Research Center to include several additional varieties. Considerable variation exists among these varieties in both production and objective fruit quality (i.e., sugar, pH, acidity, color). However, the significance of variations in fruit quality in relation to consumer preference is not clear. A study was conducted during the 1982 harvest season on a limited number of varieties to collect consumer preference information. Also, in conjunction with some blueberry postharvest research, fruit with a waxed coating were included in the evaluations.

METHODS AND MATERIALS

Three varieties were selected for preliminary organoleptic evaluations. Tifblue and Delite were selected because these 2 varieties have been consistently high yielding, are generally considered to be of good quality and have a natural "bloom" on the skin surface. Menditoo was selected for evaluation because most Menditoo berries do not have a "bloom" on the surface and appear darker in color. Waxed Tifblue berries (dipped in a solution containing 1 part FMC "Sta-Fresh 215" fruit wax and 2 parts water) appear darker in color with a glossy finish and were included for

evaluation because of the potential benefit of the wax in preserving fruit quality during storage.

Twenty-five personnel were selected at random from the Overton Research and Extension Center Staff and were provided with 1/2 pint of each blueberry sample. The participants were requested to evaluate the samples and complete a questionnaire.

RESULTS

The majority of the participants preferred Tifblue or Delite blueberries with only 8% preferring waxed Tifblue and only 4% preferring Menditoo (Table 1). Menditoo was the least preferred fruit of the 4 berry samples evaluated. When the participants were asked questions regarding purchase price of the berries, 48% indicated they would buy Tifblue at a regular price of \$1.49/pint, (based on retail prices in Tyler area), 36% would buy Delite, 20% would buy waxed Tifblue, and only 12% would buy Menditoo. If the berries were sold at a discount price, more of the people would buy the berries; however, fewer would buy the fruit at a premium price. If offered a choice of buying only strawberries or only blueberries, the majority of the participants indicated they would purchase strawberries.

When specific quality attributes were rated by the participants, Tifblue received the highest ratings in all categories except texture (Table 2). However, these differences were not statistically different from the Delite ratings. Menditoo fruit were rated poorest for all quality attributes and the texture was generally described as unacceptable due to a "gritty" mouth feel.

Waxing Tifblue fruit slightly reduced fruit quality ratings, but flavor was the only specific fruit quality attribute significantly

reduced by the wax (Table 2). Flavor objections to the wax coating were probably due to a slight off-flavor, sometimes described by the panelists as a slightly bitter taste. The reduced flavor ratings of waxed Tifblue resulted in a significantly lower overall rating compared to non-waxed Tifblue fruit.

SUMMARY

Tifblue and Delite were the 2 highest ranked varieties in these evaluations and Menditoo was least acceptable. Waxing Tifblue fruit significantly reduced flavor ratings and resulted in lower overall acceptability. Since fruit waxes may improve storage and shelf life, other types of wax coatings should be evaluated. Plans for future work include more in-depth consumer acceptance evaluations of the blueberry varieties adapted to the East Texas area.

Table 1. Panel response to blueberry varieties and fruit waxing, 1982.

Question	% Affirmative Responses			
	Tifblue	Delite	Waxed Tifblue	Menditoo
Which sample did you prefer?				
Which sample did you like least?	40	48	8	4
	0	12	32	56
Would you buy these berries in the store:				
a) at regular price (\$1.49/pt)?	48	36	20	12
b) at a discount price?	88	76	60	44
c) at a premium price?	24	16	8	0
d) over strawberries	32	28	12	0

Table 2. Effect of variety and fruit wax on organoleptic evaluation of rabbiteye blueberries, 1982.

Variety	Skin Color	Berry appearance	Flavor	Texture	Overall Rating
Tifblue	7.5 ^z a ^y	7.4a	7.8a	7.6a	7.8a
Delite	7.2ab	7.2ab	7.1ab	7.6a	7.1a
Waxed Tifblue	6.7ab	6.8ab	6.2b	6.7a	6.0b
Menditoo	6.2b	6.4b	4.8c	3.4b	4.6c

^z Numerical rating of 1 = extremely undesirable - 9 = extremely desirable.

^y Means separation within columns by Duncan's Multiple Range Test, 5%.