Elvenia J. Slosson Proposal
Annual Report

Title: Evaluation of Southern Highbush and Rabbiteye Blueberries for Southern California – Continuation of Blueberry Evaluations in Southern California.

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Summary. Blueberry trials (Irvine and Riverside) are being conducted to evaluate different blueberry cultivars for their performance in Southern California. There are currently 13 cultivars being evaluated. Performance is based on aesthetic characteristics such as foliage quality, fall coloration, fruit yield, and flowering traits. Yield data indicate that southern highbush cultivars are adapting more quickly, relative to most northern highbush and rabbiteye cultivars being tested. However, the northern highbush and rabbiteye cultivars are deciduous, and are displaying outstanding fall coloration, especially at the Riverside location. In addition, these blueberry types have later yields, which would extend the harvest season for the homeowner. There is now a blueberry newsletter titled 'California Blueberry News' (see attached), which is distributed to the academic community and to the nursery industry. Talks related to blueberry cultivation have been given in association with UCCE and the California Association of Nurseries and Garden Centers (CANGC).

We have been budgeted sufficient funds to maintain cultural practices such as mulching, fertilizing, pruning and pest scouting during the second full year of plant growth. However, sufficient funds were not awarded to adequately monitor fruit yield. Berry harvest, including yields and berry weight, will occur during the third growing season, if funded, as suggested by the Slosson Research Review Committee. For the growing season of 2005, we did monitor flowering time at both field sites to give us an estimate of plant performance and possible fruiting times.

South Coast Research and Extension Center (Irvine, CA). At the South Coast Research and Extension Center in Irvine, all cultivars broke dormancy and successfully flowered (Table 1). The earliest flowering occurred for the southern highbush cultivar Sapphire and the latest flowering period occurred for the rabbiteye cultivars and the northern highbush cultivar Ozarkblue. All cultivars reached 100% anthesis by the second week of May. Berry ripening began for the southern highbush cultivars during the later part of March and lasted through the month of April (no data available for exact dates of fruit yield). Based on scouting reports, fruit ripening for rabbiteye and northern highbush cultivars began near the end of May and continued into July.

Table 1. Percentage of a plant's flower buds at anthesis. Numbers are the average of three plants. Plants were planted from 1-gallon containers in March, 2003. Plants are located at the South Coast Research and Extension Center in Irvine, CA.

	Percentage of flower buds at anthesis (%)								
	Jan. 18	**Jan 31**	**Feb 14**	**Feb 28**	**Mar 14**	**Mar 28**	**Apr 11**	**Apr 25**	**May 9**
Northern Highbush									
Chandler	0%	0%	0%	0%	3%	37%	60%	77%	100%
Legacy	5%	17%	73%	80%	90%	100%	100%	100%	100%
Ozarkblue	0%	0%	0%	0%	0%	3%	33%	50%	100%
Rabbiteye									
Climax	0%	0%	3%	12%	18%	83%	100%	100%	100%
Maru	0%	0%	0%	0%	5%	20%	47%	80%	100%
Powderblue	0%	0%	2%	6%	12%	52%	73%	90%	100%
Rahi	0%	0%	2%	6%	12%	52%	73%	90%	100%
Southern Highbush									
Emerald	32%	60%	90%	100%	100%	100%	100%	100%	100%
Jewel	32%	60%	90%	100%	100%	100%	100%	100%	100%
Misty	18%	33%	93%	100%	100%	100%	100%	100%	100%
Sante Fe	15%	28%	60%	65%	100%	100%	100%	100%	100%
Sapphire	77%	87%	100%	100%	100%	100%	100%	100%	100%
Sharpblue	17%	57%	87%	100%	100%	100%	100%	100%	100%
Sunshine Blue	0%	5%	20%	75%	100%	100%	100%	100%	100%
95-12	31%	49%	69%	92%	100%	100%	100%	100%	100%

Agricultural Operations (Riverside, CA). At the field site in Riverside, flowering times were similar to those of the Irvine location (Table 2). Southern highbush cultivars were the first of the cultivars to begin anthesis. Most of the rabbiteye and northern highbush cultivars began flowering a month later. The time from the beginning to the end of anthesis appeared to be of shorter duration for the rabbiteye and northern highbush cultivars compared to the southern highbush cultivars. This phenomenon may be attributed to the warmer temperatures that occurred during the later part of the spring. Based on scouting reports, fruit ripening for southern highbush began in mid-April and continued to the end of May. Fruit ripening for rabbiteye and northern highbush occurred from June into September.

Table 2. Percentage of a plant's flower buds at anthesis. Numbers are the average of three plants that were planted from 1-gallon containers in March 2003. Plants are located at Agricultural Operations, Riverside, CA.

	Percentage of flower buds at anthesis (%)								
	Jan. 18	**Jan 31**	**Feb 14**	**Feb 28**	**Mar 14**	**Mar 28**	**Apr 11**	**Apr 25**	**May 9**
Northern Highbush									
Chandler	0%	0%	0%	0%	7%	17%	93%	100%	100%
Legacy	0%	50%	80%	100%	100%	100%	100%	100%	100%
Ozarkblue	0%	0%	0%	0%	0%	2%	90%	100%	100%
Rabbiteye									
Climax	0%	0%	2%	12%	70%	93%	100%	100%	100%
Maru	0%	0%	0%	2%	23%	30%	93%	100%	100%
Powderblue	0%	0%	5%	13%	43%	63%	100%	100%	100%
Rahi	0%	0%	0%	0%	37%	53%	100%	100%	100%
Southern Highbush									
Emerald	65%	82%	97%	100%	100%	100%	100%	100%	100%
Jewel	10%	53%	87%	97%	100%	100%	100%	100%	100%
Misty	20%	53%	87%	95%	100%	100%	100%	100%	100%
Sante Fe	7%	43%	80%	88%	100%	100%	100%	100%	100%
Sapphire	5%	77%	100%	100%	100%	100%	100%	100%	100%
Sharpblue	0%	40%	87%	100%	100%	100%	100%	100%	100%
Sunshine Blue	0%	35%	47%	67%	100%	100%	100%	100%	100%
95-12	50%	70%	97%	100%	100%	100%	100%	100%	100%

Based on these data and scouting notes, it appears that fruiting will occur in April for many cultivars, regardless of location (near the coast or inland). This fruiting period is ideal for commercial growers as it comes after the time of fruit imports from Chile, but before major blueberry imports from producers in the northwestern United States. The inclusion of northern and rabbiteye cultivars may allow for extended fruiting into the summer months. The quality and quantity of fruit from all cultivars will need to be evaluated for these cultivars, especially berries ripening during the hot summer months, since these weather conditions may impact fruit quality.