



# Field Evaluation of Blueberry Pruning Techniques

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ADDITIONAL INDEX WORDS. *Vaccinium corymbosum*, blueberry growth, fruitlet, blueberry yield

Pruning blueberry bushes is one of the most labor intensive and costly operations in a commercial planting. According to UF/IFAS Publication #HS985, proper pruning of blueberry plants will help obtain the desired plant size and shape, increase plant vigor and establishment of fruiting wood, reduce over-fruiting and enhance size and allow sufficient sunlight penetration into the canopy to assist with proper fruit development. In June 2010, immediately after the first harvest of a central Florida commercial blueberry planting that had been established for approximately 15 months, a trial was initiated to compare a grower standard pruning program to three pruning regimes and an unpruned treatment in two southern highbush cultivars, ‘Jewell’ and ‘Emerald’. The pruning regimes were as follows: roof, where cuts starting at 2 ft were angled to meet at a point approximately 4 ft high in the middle of the row; box, where lateral shoots were cut back to the margin of the pine bark bed and an even top was cut at approximately 3 ft; and hedge, where just the lateral shoots were trimmed back to the outer margin of the pine bark bed and no topping. In ‘Emerald’ only a treatment called severe box, where the lateral shoots were trimmed into the center of the row an additional 6 to 9 inches and even top was cut at approximately 2½ ft was established. The grower treatment removed approximately 70% of the top growth back to a height of 1½ ft. In Spring 2011 a count of fruitlets from two terminals of four random plants in each treatment revealed that in ‘Emerald’ the roof and severe box were lower than the grower treatment and in ‘Jewell’, only the box had a lower count than the grower treatment. Harvest data will be taken in Apr. 2011.

Pruning blueberry plants is considered a critical cultural practice on most farms in Florida. It has been demonstrated that proper pruning of blueberry plants maintains desired size and shape, while also increasing plant vigor, establishing proper fruit load and allowing sufficient sunlight penetration into the canopy to promote proper fruit development (Williamson et al., 2004). Most growers do some type of pruning and/or hedging as soon as possible after harvest to initiate growth of new shoots that will bear the crop for the next season. Some growers will also do additional rejuvenating cane pruning and/or removal of twiggy growth during the dormant period, usually January and February.

Growers have expressed interest in learning the proper pruning procedures and timings to obtain a high yield of quality fruit, while enhancing efficiencies of production. This paper documents an observational trial established in a commercial field to compare different pruning techniques on two different varieties.

## Materials and Methods

On 3 June 2010, treatments were established on 15-month-old ‘Jewell’ and ‘Emerald’ southern highbush blueberry (*Vaccinium corymbosum*) plants about 2 weeks after harvest ended in mid May 2010 on a central Florida blueberry farm. Five treatments (Table 1) in ‘Emerald’ and four in ‘Jewell’ were established using a gasoline-propelled hand pruner. Plots in this observational trial consisted of 12 consecutive plants for each treatment.

On 18 Feb. 2011, two terminal fruit clusters from four randomly selected plants in each treatment were selected and the number of fruitlets recorded. Four randomly selected plants in the grower portion of the trial (70% growth removed from top and sides in early June 2010 plus removal of internal “twiggy” growth during the dormant period in Jan. 2011) were also sampled. In each treatment and the grower portion, the eight values were utilized to determine the treatment average. Average fruitlet count for each treatment was compared with the grower area average and expressed as percentage difference from the grower average.

Early harvest took place from 16 to 17 Apr. 2011. The weight of blueberries picked from the 12 plants in each treatment was compared to that harvested from the 12 plants adjacent to the plot in the grower portion. Yield data are expressed in percentage difference from adjacent grower plants. Due to a shortage of harvesting labor, only early data were available.

Table 1. Description of pruning treatments.

Treatments	Description	Cultivars
Unpruned	No pruning	Both
Roof	Sides pruned at a 45° angle from 2.5 ft to 5 ft at top	Both
Box	30% growth removed from top and sides	Both
Hedge	30% growth removed from sides	Both
Extreme	50% growth removed from top and sides	Emerald
Grower	60% growth removed from top and sides	Both

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Table 2. Comparison of the cultivar Emerald for average fruitlet count for each treatment vs. grower average and yield in pounds of each treatment vs. the 12 grower plants adjacent to each treatment expressed as percentage difference from grower.

	Emerald			
	Est. fruitlets	% vs. Grower	Wt	% vs. Grower
Unpruned	139.5	9.4	11.9	-16.2
Roof	121.4	-4.8	5.8	20.8
Box	163	27.9	6.2	-37.4
Hedge	148.1	16.2	16.9	-7.1
Extreme	97.5	-23.5	13.9	-7.9

Table 3. Comparison of the cultivar Jewell for average fruitlet count for each treatment vs. grower average and yield in pounds of each treatment vs. the 12 grower plants adjacent to each treatment expressed as percentage difference from grower.

	Jewell			
	Est. fruitlets	% vs. Grower	Wt	% vs. Grower
Unpruned	148.3	45.5	33.6	33.9
Roof	111.3	9.2	28.3	-4.4
Box	150	47.2	33.4	38
Hedge	86.9	-14.8	29	14.2
Extreme				

## Results and Discussion

For 'Emerald', the trend in the box and hedge treatments indicated a higher pre-harvest fruitlet count than the grower area (Table 2). At early harvest, only the roof treatment was greater than the grower comparison. It should be noted that 'Emerald' tends to ripen fruit over a longer period of time than 'Jewell'. There was no evidence of a trend for pre-harvest fruitlet counts predicting early fruit yield.

There was a trend in the 'Jewell' cultivar for the unpruned and box treatments having a larger number of pre-harvest fruitlets versus the grower comparison (Table 3). This trend also appeared to carry over as an indicator of an increase in yield versus the grower comparison, where unpruned and the box treatments resulted in the largest percentage increase in fruit yield versus the grower comparison.

## Conclusion

The trend from these results for 'Emerald' seemed to suggest that the roof treatment was superior to the grower comparison for fruit yield and there did not seem to be a strong correlation between pre-harvest fruitlet counts and eventual early yield. The trend for 'Jewell' indicated that the unpruned and box treatments resulted in the highest early yield relative to the grower comparison and there seemed to be more of a correlation with pre-harvest fruitlet count and fruit yield.

These plots were the site of a blueberry growers field day in Spring 2011 attended by a significant portion of the area growers. Many of these growers have taken information from this trial and initiated similar trials on their farms to identify the most efficient pruning regime for their operations.

## Literature Cited

Williamson, J.G., F.S. Davies, and P.M. Lyrene. 2004. Pruning blueberry plants in Florida. EDIS University of Florida (HS985). <<http://edis.ifas.ufl.edu/hs223>>.