



The BLUEBERRY BULLETIN

A Weekly Update to Growers

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CULTURE

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It is tradition in the blueberry fields in South Jersey to begin pruning the bushes after harvest. I have been told that the primary reason for this is labor is still present so pruning is something that can be accomplished at this time. I have discussed this practice many times with many growers and they know I do not recommend this practice for many reasons. First, it must be understood that pruning has a stimulating effect on the bushes. By pruning in August, September, or October, it stimulates buds that break and start to form new canes. This is not what you want at this time. Canes that start to develop this late in the season are killed by the winter's low temperatures. Thus you have lost those new canes. In addition, wood that would have been killed in the winter will not be pruned out and will remain for the entire growing season the following year. Lastly, since fruit bud initiation takes place in August, September and October, this process is decreased on the remaining canes if they are

stimulated by pruning because they are pushed to vegetative growth. Given all this, many growers experienced root damage during this season. The exact cause is still being investigated however it is my belief that pruning these bushes at this time could have a tremendous negative effect. I say this because every leaf on a blueberry bush is like a little factory and at this time of the year they are producing carbohydrates and sending them to the roots. Take away leaves, less food to the roots. Damaged roots need all the food they can get. I would add that I believe if a grower had root damage this year, I would recommend eliminating pruning all-together this fall and next spring. One year of not pruning will not significantly affect healthy plants and I believe it will give damaged plants time to recover. This is because pruning blueberries is largely done to stimulate new cane growth. The energy for this cane growth comes from the roots. There is no logic in stressing damaged roots. The bottom line is we are trying not to let the damage that occurred this year to impact next year's crop.

Pruning Blueberries: New Jersey has approximately eight thousand acres of blueberries under cultivation and this is the primary crop for which I have extension responsibilities. Pruning continues to be little understood and poorly executed throughout the industry. In fact, it is rare to find two growers who prune the same. I would like to clear up a few misconceptions and try to outline a simple method of pruning blueberries. The first place to start would be to discuss the importance of pruning. Growers often feel that pruning is of little value because the effects of the practice are not immediately apparent or dramatic. It should be noted that a well known blueberry researcher, Phil Marucci stated many years ago that there were a few factors which have greatly influenced the lack of increase in blueberry yield on a per acre basis over the last 30 years and pruning was the most significant factor.

More recent research has revealed that young canes are more efficient fruit producers than old canes. In fact, canes, which are 3 to 10 years old, allocate greater than 50% of applied water and fertilizer to fruit production. By the time a cane reaches 20 years of age, only 25% are allocated to fruit. (Water and fertilizer costs the grower money and there is no profit in the production of blueberry leaves.) Additional research compared three pruning types on yield and fruit size. Plants were 1) regularly pruned in a moderate manner such that one out of every six canes per cut out, 2) heavily pruned by removing 40% of all canes out every five years and 3) not pruned at all. The result was that the regular moderate pruning had the highest yield on the least number of canes. Research has also shown that as pruning increases, new cane production increases.

These studies show us that young canes out produce old canes, the removal of one out of six canes produces the right number of new canes and the highest yield

and fruit weight is produced with regular moderate pruning.

It is also important to understand how a blueberry plant grows. Each year, canes are initiated from the base of the plant. Each succeeding year, the cane produces laterals, laterals produce laterals and so on. Each year the lateral production on any individual cane decreases in diameter, or put in other words, the wood becomes progressively twiggy. It should be realized that as wood becomes smaller, fruit size decreases. This is why we detail prune to increase fruit size.

With this information under our belts we can address how to prune. There are really 5 basic steps to keep in mind when approaching a bush, which is to be pruned. 1.) Assess the plants overall vigor, is cane production adequate? 2.) Prune out all dead wood. 3.) Locate the oldest canes and prune out one of every six canes thus if the plant has twelve canes, remove two of the oldest. 4.) Prune out all low branches, which will never be picked and are a source for disease. 5.) Detail prune, i.e. remove as much twiggy wood as time allows.

Armed with these basics, we can now deal with the different plant situations that arise. First, pruning young plantings has primarily the objective of establishing the plant to obtain full production as soon as possible. Thus, the first two years the procedure is to remove flower buds. Some growers cut off as much as the top half of the plant.

This is really quite drastic. Rubbing off lower buds would be sufficient however in a big operation it is usually less labor intensive to cut the top 3-5 inches off each cane which will remove most flower buds. Any weak twiggy growth should also be removed.

In year three, a small crop is possible but not the expense of stunting the plant. Usually 1-2 pints/bush is the optimum and fruit should only be on strong wood.

The fourth and fifth year twiggy growth must again be removed as well as any lateral canes, which have developed. Fruit production can be increased but the amount is dependent on the number of new canes which were produced the preceding years, 3-5 canes/yr. is optimum.

The blueberry planting should be in full production by the sixth year though there are numerous variables, which will influence this timing. The most important of these being proper pH and nutrition, water management and the crop to cane production balance.

I have found it is also helpful to growers to discuss blueberry pruning strategies based on plant status. I do not believe there is a strategy for each variety though any one variety may fall into one of the following categories most of the time. For example, the variety Blueray often has a spreading or open habit in which canes tend to bend down to the ground. Plants of this type must be thinned to the 1 of 6 rule however canes that are bent over also tend to produce an upright shoot. These canes should be pruned just above this upright shoot to produce a more erect plant. Other varieties that often fit into this category are Berkeley, Bluetta, Coville, Weymouth and Patriot.

Varieties such as Bluecrop, Collins, Darrow, Earliblue, Herbert, Jersey, Lateblue and Elliot often fall into the erect plant category. These plants become overly dense in the center which decrease's fruit bud initiation. The pruning strategy for this category is to remove older central canes before all others.

When plants are overly vigorous, the primary strategy is to remove entire canes rather than spend time on detail pruning. This is done at least until the proper fruit to cane

production balance can be established through nutrition and fruit production management. Varieties that are prone to this situation are Earliblue, Collins, Blueray, Herbert and Collins though any variety can potentially be overly vigorous.

Weak plants are treated in the opposite manner. The primary procedure is to detail prune rather than whole cane elimination. Varieties that are classically put into this category are Weymouth and Bluetta. I should take a moment to address the method of pruning on a field that has been neglected for a long time and needs to be rejuvenated. This question often comes up when a grower has purchased one of these fields.

The most important step is to inspect the plants in their field for virus symptoms. Any plant showing these symptoms should be pulled out. The plant inspections must be done during the growing season because symptoms are most easily seen on the leaves. The next step is to completely prune everything down to the ground, a chain saw is the quickest and easiest method. This pruning is best done in late winter. An application of a 10-10-10 fertilizer should be made in early April, usually at a rate of 400 lbs. per acre. No crop will be harvested that year however the following winter the canes should be thinned to approximately 12-16 canes per plant. A full crop can be harvested that year.

In summary, pruning correctly can 1) increase yield, by producing more young canes, 2) increase fruit size by producing more strong wood, 3) decrease disease by removing dead wood and, 4) increase cane initiation because as pruning increases, cane number increases.

Pruning costs money, but it will cost a grower more if it isn't done and it isn't done correctly.

INSECTS

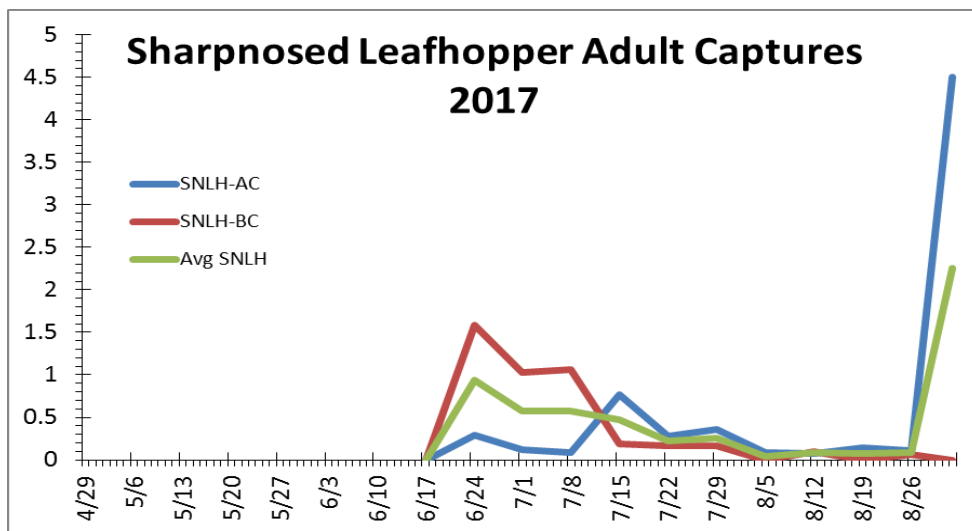
Dr. Cesar Rodriguez-Saona, Extension Specialist in Blueberry Entomology, Rutgers University

Mr. Dean Polk, IPM Agent – Fruit

Ms. Carrie Denson, IPM Program Associate – Fruit

Sharpnosed Leafhopper: Our trap captures of adult leafhoppers finally increased over the past week. However, this was only in Atlantic County, which has had higher levels than in Burlington County. Given the increase (see graph below), it is now time to apply your second generation leafhopper insecticides. The motile forms, or adults, must be controlled in order to prevent

the spread of stunt disease in cultivated fields. The most effective SNLH materials include Actara, Assail, Admire, Diazinon (only if you have not yet used it), and Imidan. Lannate and pyrethroids can also be used (Asana, Bifenture/Brigade, and Hero), but are not quite as effective.



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If you have any comments about this newsletter, please make them in the space below and mail to:

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I would like to see an article on the following subjects: _____

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