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THE BLUEBERRY BULLETIN

A Weekly Update to Growers

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Blueberry Culture

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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 fac-tors which have greatly influenced the 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% is allocated to fruit. (Water and fertilizer cost 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 40% of all canes out every five canes per cut out, 2) heavily pruned by removing 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 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 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 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 depends on the number of new canes which were produced in 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 decreases 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. 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 crops 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 stronger 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.