Growing Peaches in Michigan: How We Do It and What Keeps Us Up at Night

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Making money producing peaches is difficult because the tree is sensitive to low winter temperatures, blooms relatively early, and the fruit has a short storage life. However, selling good quality peaches is generally easy because of the demand for this queen of fruit. Farm marketers know that peaches draw customers to their fruit stand. I am providing here observations and strategies that I have learned over the years working in Michigan for increasing the productivity of peaches. Although these tips will not eliminate the anxieties associated with growing peaches, I am confident that some of these will help.

Tree Longevity Anxiety

Temperatures below approximately -13 F in the mid-winter is tough on any peach tree and certainly on peach fruit buds. There are what I call lower tier varieties such as Veteran, Reliance, and Madison, that have the reputation for the best mid-winter hardiness, but their fruit quality and/or appearance are only so-so. 2nd tier peach varieties not quite as hardy as these but with better quality include Harrow Diamond, Starfire, Contender and the flat white fleshed peach Saturn. A third tier of varieties slightly less hardy reliable than these, but still pretty good, and good to excellent quality include Garnet Beauty, Summer Serenade, Redhaven, Allstar, PF17, and Glowingstar.

Since winter damage and tree mortality is a fact of life with peaches, a good strategy is to have an ongoing orchard planting strategy to insure a farm has a range of trees ages, and at least two varieties for each harvest window. A farm with a range of tree ages will have a better chance of surviving a cold winter with some blocks still viable. Winter damage tends to be worse on older trees, but not always.

A careful consideration about the planting site is important to help head off problems. Peach tree do best on sandy loam soils with 3 or more feet thick of topsoil. Tile drainage systems are critical in many orchard sites to handle excess water. In addition to tiles, soils that have more silt or clay than ideal should be shaped into a slight berm so that excess water will drain out of the root zone area. Although peaches do better on sandy sites than other tree fruit, trickle irrigation is invaluable to get an orchard started in good shape during droughty years.

Tree planting depth is particularly important on heavier soils. The traditional approach is to plant peaches so that the graft union is at the soil line. How-

Figure 1. Bill Shane, peach tree specialist at Michigan State University SW Research Center.

ever, if the shank (the part between the graft union and the topmost root) is long (greater than 1 foot), the tree should be planted so that the topmost root is within a few inches of the soil line, which will put the graft union above the soil line. Tree roots that are planted too deep in heavier soils are prone to collar and root rot problems.

For sandy sites a more subtle concern is potential tomato ringspot virus problems. Peach trees with this virus are more prone to reduced productivity and shorter lifespan. This virus is spread from weed to tree and tree to tree by the dagger nematode, a pathogen that prefers sandy sites. The only two reliable ways to check a site for this problem are to test for the dagger nematode or to test the known weed hosts such as dandelion or the tiny root of the peach tree for the virus. Both tests can only be done by labs with the proper diagnostic kits. Growers who do a good job of keeping broadleaf weeds out of their orchards generally have less problems with this virus. Sites with this virus and nematodes are good candidates for pre plant fumigation or other nematode-fighting techniques such as use of rapeseed, mustards, or other non-host rotations.

Another potential problem for us in Michigan is X-disease, caused by a phytoplasm, which is somewhat like a bacterium, but without a cell wall. Trees with X-disease will develop a characteristic red wine colored leaf spot, drop their older leaves, and then decline and die within a few years of infection. This disease is spread by several species of leafhopper, which explains why the disease appears sporadically. The other clue to disease spread and control is the fact that leafhoppers acquire the pathogen from infected chokecherry, tart cherry, and sweet cherry. When X-disease starts showing up in a peach orchard, it usually means that the grower needs to go on a witch hunt for the chokecherries or possibly old tart or sweet cherry trees that are serving as the source of X-disease that the leafhoppers are acquiring —a source that could be a ¼ mile or more away.

Nursery Tree Anxiety

Nursery tree quality has a big effect on the productivity and useful lifespan of a peach orchard, but is sometimes out of the control of the grower. I have seen cases where nursery trees were exposed to ethylene from apples stored in the same building and the trees would not grow properly. Another occasionally seen problem is trees that grow properly for a few years, but then show trunk splitting and root suckering because the trees had trunk cambium damage due to cold while in the nursery. Diagnosing this requires dissecting a few trees to look for dead cambium tissue in the inner rings of the tree. Another difficult to diagnose problem is trees that have roots dried out somewhere between digging in the nursery and planting. Such trees will be slow to grow in the new planting. I generally recommend that growers plant trees from more than one nursery in a new orchard so that these types of problems are more easily diagnosed.

Tree quality can be particularly important for the success of certain training systems. For example, the Y and quad training systems requires that the nursery tree be headed low at the time of planting. A low vigor tree that pushes out little growth after this heading cut will offer poor options when it comes time to select branches for the scaffold arms. The effort and time spent hunting for the right type of tree is often well spent. I have seen some growers in Michigan preferring June-budded peach trees produced by some nurseries because of their smaller caliper and greater readiness to grow when headed low.

Figure 2. Southwest Michigan is a major producer of high-quality, fresh-market peaches.

Training System Anxiety

Some growers have the knack for growing long-lived orchards. These growers tend to take the time needed for site preparation techniques mentioned above. In addition, they also use tree training techniques that encourage good tree structure. There are many training systems such as 3 to 5 scaffold open center, central leader, Y, palmette, fusetto, quad, and many variations within any one system. The key feature of a long-lived tree is that the scaffold limb arrangement avoids "plumbing" problems. One way to visualize this is to think of a tree as a plumbing project, with tubes (xylem and phloem) running just under the bark. A well-structured tree provides relatively unimpeded flow between the trunk and the scaffolds. A scaffold limb that is "stacked" directly above another scaffold has no clear access to water flow from the roots. Two scaffold limbs that are side by side block "flow" to limbs above them.

Some growers rely on old fashioned wooden clothes pins to help insure good plumbing in their trees. The trees are clothes-pinned when potential new scaffold limbs are 4 to 6 inches long. The clothespin is clamped on the central leader above the new limb such that the tails of the clothespin direct the limb to grow horizontally. This helps to avoid bad crotch angles, poor limb strength, and poor circulation.

Another trick for early years of an orchard is to use 2 or three rounds of pinching and limb breaking in the spring to early summer to encourage growth elsewhere on the tree. This is the so-called "benign neglect" approach to training, a term coined by University of California Extension Specialist Kevin Day. The presence of the broken limbs helps to prevent strong regrowth which happens if the limbs are simply pruned. The tree "gives up" on the broken limbs which are eventually pruned out, but the impact is less harsh than making strong cuts on a young tree.

A third technique to avoid problems in a young tree is to insure that the scaffold ends remain simple in the 2 or 3 years of growth. At the time of bud swell, the excess buds in the first 4 or 5 inches at the scaffold end are removed, leaving the end bud or two intact. This helps eliminate the need for later strong cuts to remove the excess cluster of limbs, a harsh pruning that often leads to disease canker problems. Debudded trees need to have a good spray program for oriental fruit moth to protect the few remaining buds on the scaffold ends.

Bill Shane is a Senior Tree Fruit Extension Specialist and Peach Breeder at Michigan State University. He is also the new director of the South West Michigan Research and Extension Center located in Benton Harbor, Michigan

Long-time UMass Pomologist and Fruit Notes Editor, Dr. William J. Lord, Passes

It is with great sadness that we report the passing of Dr. William J. Lord. Bill served at UMass as the Extension Tree Fruit Specialist, Professor of Pomology, and Editor of Fruit Notes from 1955 to 1985. Bill passed away on March 19 at age 94.

After retirement, Bill focused on fly fishing, but he continued to teach and work at the UMass Cold Spring Orchard for many years. His enthusiasm for pomology and for the orchards of Massachusetts never waned.

Donations in memory of Bill should be directed to the Winifred C. and Jesse L. Rice Fund, UMass Cold Spring Orchard Research & Education Center, 391 Sabin Street, Belchertown. The income from this fund supports the operation of the UMass Cold Spring Orchard.