

# POWDER KEG®



POWDER KEG®, CADDO SUGAR MAPLE;  
A Lengthy Adventure to Develop  
a Superior Landscape Tree.

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When I arrived at Oklahoma State University in August 1972, I found what appeared to be some severely stunted tree seedlings in small containers. I was told they were two year old Caddo sugar maple seedlings and even though only 12 to 16 inches tall, were growing exceptionally well. The seedlings, from my perspective and experience, were --- well, depressing. Soon an assortment of stories were shared about the grandeur of Caddo sugar maples in the fall and their toughness in withstanding heat and drought and that it would be a great tree to incorporate into my research. As experience was gained with Caddo's – I was hooked. But few trees produced seeds and those collected season after season, had little or no germination and the few that did germinate ended up as runts with little or no vigor.

Eastern sugar maple, *Acer Saccharum*, are native in Eastern Oklahoma but are rarely grown in central and western parts of the state because they do poorly. Heat, drought, drying winds, and alkaline soils were listed as culprits. So when an opportunity to obtain over two hundred bare root seedlings 3 to 4 feet tall from Ozark Nursery in spring 1974, I was ready. The seedlings were

planted in three adjacent rows and were watered in several times by hand and all received a moderate rate of fertilizer. Drip irrigation was provided for 1/3 of each row. Drip irrigation plus mulch was provided for 1/3 of each row, while the remaining 1/3 of each row was neither irrigated nor mulched. With 25 trees in each of the three replications, I expected to learn something about planting and growing sugar maple seedlings.

And I did. All of the seedlings survived and looked good during April and May. But with the arrival of heat and desiccating winds of summer, leaves of all of the seedlings began to yellow, then blacken along the margins and developed leaf tatter. Within three to four weeks, trees turned from attractive to ugly. Trees with drip irrigation or drip plus mulch were just as ugly as those with no irrigation or mulch. Yet, all of the seedlings survived. I included the statement in my notes “these trees have a lousy top but a very good root system.” The file on eastern sugar maple seedlings was put to rest for the next 36 years but interest in the amazingly tough Caddo with spectacular fall colors continued.

Most years there were so few seeds from Caddo trees to collect, so they were mixed together, cleaned and planted only to have low germination and only a few with even modest vigor. But 1986 was an exception as Caddo seed population was higher. I collected seed from 14 trees across the state, kept the seeds separate in hopes that a superior parent could be found. And, indeed, seeds from one tree in Stillwater germinated better and produced a higher number of stronger seedlings from all others. That became my primary seed tree until it was destroyed in a storm in 1996.

Seeds collected from this primary Caddo seed tree in 1994 were especially good, resulting in 28 exceptional seedlings. These were grown first in containers, then in the field for a number of years. But with each year's evaluation, one to several seedlings would be culled and discarded until only five remained. To clear the field for other research, the five were transplanted to a partially shaded lawn area south of the Lacebark main office and evaluations continued. In all aspects of desirable tree form, dark green foliage color, resistance of leaves to heat, wind and drought but most spectacularly, fall color, one tree consistently stood out. This most select tree would remain dark green all summer and into very late fall, then after nearly all other trees around had lost their leaves, ---- Pow--- an explosion of color

beginning at the top and progressing slowly downward, first as shades of yellow and light orange, then to dark oranges and reds (Figure 1). And the spectacular color continued for two to three weeks or longer, depending on the season. Thus the registered trademark name Powder Keg®.

But sugar maples are notorious for being difficult to propagate, especially from cuttings. And Powder Keg® was true to form. After a number of years of taking cuttings and using every trick in the book and beyond, the cuttings would root reasonably well, but, would not survive the first winter. I preferred to have the tree on its own roots but after hundreds of rooted cuttings but only one survivor, the idea of budding or grafting Powder Keg® onto some other species seemed worth trying. And, it was during this period when I recalled the study from 1974, and after several days, located the file and all the details.

The Oregon climate is ideal for growing an array of trees and other nursery stock and lots of trees are propagated by transferring a bud from a select parent tree onto selected seedlings. I contacted Keith Warren with J. Frank Schmidt Nursery near Boring, OR. He was interested and had tried budding a selection of Caddo onto Caddo seedlings, but growth was poor. I asked about budding a Caddo selection onto eastern sugar maple seedlings. He was concerned about performance of the eastern sugar maple root system. I related the results of my study from years ago and he agreed to give it a try. My hope was to get Powder Keg® seedlings two to three feet tall in one growing season following budding onto easterns.

Budwood from Powder Keg® in Oklahoma was shipped to Oregon in late July 2011. The budding proceeded - --- then it was wait and see! An email in September 2012 related that the buds were doing well. In October, another email also had photos of the budded trees with excellent growth, stem taper and branching. In one growing season the buds grew six feet or more and were excellent branched trees ready to be harvested bareroot and shipped back to Oklahoma or wherever they were wanted. The combination of a very heat and drought tolerant top that consistently yields spectacular fall color on a tough eastern sugar maple root system is adaptable to a wide geographic range. Even in eastern areas where eastern sugar maple foliage is affected in droughty areas or heat from parking lots Powder Keg®

will shine. Hardiness is from zone 5 through 9.

It takes time to build up sufficient population of parent trees of a selection in order to bud enough seedlings to meet demand thus it will be a few years before significant numbers of Powder Keg® Caddo sugar maple trees are available. However, put Powder Keg® on your wish list, as it will be worth the wait.

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## **POWDER KEG®** Sugar Maple

*Acer saccharum*  
*subspecies Caddo*  
'Whit XLIX' Cultivar

- Leathery dark green leaves through growing season
- Spectacular fall colors
- Stout branching upright form
- Drought tolerant
- Hardiness Zone 5 through 9
- Plant Patent #23,957

