Fall Leaf Color

The beautiful fall color display in trees and shrubs is dependant on many factors and conditions. Intensity of sunlight, moisture, temperature, length of day, genetic traits, site location, latitude and altitude, as well as many others, affect when and how reliably leaves change their colors and the hues they produce.

Tree and shrub leaves, during spring and summer, are constantly manufacturing chlorophyll, which is being used for the plant's growth. These green pigments dominate and mask the other pigments in the leaf.

When chlorophyll production ceases in the fall, the green disappears and previously hidden yellow, orange, and brown (carteniods) as well as red, purple and bronze (anthocyanins) pigments reveal themselves.

In fall, the veins that carry fluids to the leaf contract slowly at first, then more rapidly, which decreases the intake of water and minerals. Therefore, chlorophyll production ceases and the "true colors" emerge.

Color intensity varies from year to year and depends largely on the weather, not only in the fall, but in the summer as well. More fall brilliance is apparent when the summers are warm and sunny with adequate rainfall. If early fall days are sunny and chilly, but not freezing, more sugars than usual build up in the leaves and color is produced. If an early freeze destroys the leaf cells, there is little opportunity for color to develop. Even cloudy, warm days in fall will restrict the formation of bright fall colors. Leaves need the sun during the shorter days and very cool (below 45 degree, but above 32 degree) nights.

The degree of color also depends on soil conditions, whether acid or alkaline, wet or dry, compacted or well-drained, fertilized or non-fertilized.

As you can see, there are many factors and situations or combinations that have a major part in leaf coloration in the fall. How fortunate we are when all the conditions are right and we get to enjoy a gorgeous fall presentation!