

April showers bring May flowers, and orange, gelatinous, telial horns. Okay, so that is not exactly how the saying goes, but it is true. The welcomed spring rains of April always give rise to beautiful May flowers; however, the abundant spring moisture also gives rise to sticky-orange masses that hang in most cedar trees during the months of April and May.

For most humans, flowers are a thing of beauty, but for the plant on which they develop, the flower is a means of reproduction. Flowers produce seeds which ultimately serve to perpetuate the plant species.



Although the bright orange masses hanging in cedar trees are not classified as true flowers, their function is similar in nature. They, too, help perpetuate life, but not the plant's life. They are there to perpetuate the life of a disease, a fungal disease commonly called cedar/apple rust.

As its name implies, this disease affects two different host plants. One host is the common red cedar and other ornamental cedars belonging to the genus *Juniperous*. The other host plant involves the genus *Malus* to which apple trees belong. Interestingly, for most cedar trees, this disease is rarely life-threatening; but for apple trees, the problem can be serious.

Whether the apple tree is grown for its fruit or grown for its flowers, such as a flowering crab apple tree, both can be infected. If continuous infections occur in apple trees for several years, death can result. On apple trees, about this time of year, the disease first appears on the surface of the leaves as small, greenish-yellow spots. Gradually the spots enlarge, turning yellow-orange, stippled with black specialized reproductive structures. These structures produce microscopic seed-like bodies called spores. From June through August, these spores mature and are released to the air. Carried by the wind, they land on cedar tree foliage, germinate and eventually form galls. Damage to the apple tree is chiefly severe, premature defoliation.

Cedar foliage is infected during the summer months, and many months later, small greenish brown swellings develop on the foliage surface. These swellings enlarge, becoming galls. During autumn and winter, the galls appear dimpled, chocolate-brown in color and can reach two inches in diameter. The following spring, in moist weather, the depressions in the galls form orange tentacles called telial horns. These sticky, gelatinous horns produce spores called basidiospores. The basidiospores are released to the air and are carried by the wind. Some will eventually settle on apple leaves, and the disease cycle perpetuates. The entire life cycle takes

approximately two years: eighteen to twenty months on the cedar and four to six months on apple.

Removal of either host from the vicinity of the other is one method of control; however, spores can be carried by the wind from one host plant to the other for miles. Control can also be achieved by physically removing the galls from the cedar trees before they form telial horns. Unfortunately, little success will be accomplished if your neighbor's cedar tree has galls. Although several varieties of apple carry resistance or tolerance to cedar-apple rust, none are totally immune.

The best method of control for cedar-apple rust is achieved through a fungicide application. Fungicides containing chlorothalonil, thiophanate-methyl, myclobutanil, mancozeb or propiconazole are recommended. Begin applying to apple trees when flower buds start to open and apply three or four additional applications at seven-to-ten day intervals, or at least through the rainy period. Keep in mind, some chemicals cannot be used on trees grown for fruit production.

It is true; April showers do bring May flowers but also the ugly cedar-apple rust orange, gelatinous, telial horns.