CUT COSTS WITH TREE GROWTH REGULATORS

By Mike Ventura, Landscape Maintenance Supervisor, City of Glendora

ABOVE: Some additional benefits of the program have included greener coloration among the Chinese Elms (*Ulmus parvifolia*) and Evergreen pear (*Pyrus kawakamii*) depicted, a reduction in potential disease entry points, improved air quality over pruning as a result of more leaves remaining on the tree and increased structural integrity, particularly verses improper pruning.

ABOVE: Growth regulators can be an effective cost saving measure. In the City of Glendora, Chinese Elms are prevalent along right-of-ways and would require pruning ever six months to ensure driver visibility and safety without plant growth regulator applications. With treatment, schedules have been reduced to once every two years. ALL IMAGES COURTESY CITY OF GLENDORA: COMMUNITY SERVICES, PARKS AND TRAILS DEPARTMENT

The science of managing a tree's canopy appears to be changing. The "3 point pruning rule" and "never top a tree" appear to be gone in some situations. How we manage the canopy of a tree can add life, health and value. In addition, an aesthetically attractive tree may increase the value of the property that it's growing on.

In the City of Glendora, we manage the urban forest by incorporating a tree growth regulator program to assist us in our canopy management program.

Problems Associated with Improper Pruning

Green waste management, or a conventional tree-pruning program, removes a considerable amount of woody tissue (branches) and a considerable amount of photosynthetic tissue (foliage) from a tree. A stub does not clean the air, nor does the stub provide shade on a hot day. What does happen to a tree that has been subjected to improper pruning or, in the worst-case, topping, is increased water sprout production. Water sprouts lack structural integrity, resulting in additional stress on an improperly

ABOVE: Protecting power lines and Eucalyptus trees from one another is another application in which growth regulators have proven highly beneficial. Besides preventing the topping of the trees, both the frequency at which crews must return (with its associated cost) and the danger of working around extremely high voltages are reduced.

RIGHT: An arbor in a parking lot, like the African sumac (*Rhus lancea*) depicted, is another situation in which the City of Glendora has found growth regulators useful. Disadvantages of regular pruning here include frequent scheduling difficulties and the potential liability of falling limbs damaging parked cars. Growth regulators reduce both these issues.

pruned tree. The branches that are formed during the development period of a trees life are also sacrificed. The only type of pruning that can be done to a topped tree is continued topping, which can eventually lead to the premature decline of the tree. A tree's canopy that has been subjected to improper pruning or topping can lose it aesthetic appearance and the value of the property surrounding the tree may also be affected.

Tree canopies that have been subjected to improper pruning also have a greater chance of failing during inclement weather conditions as a result of water sprouts. A tree that has been correctly pruned, on the other hand, is better able to withstand wind loads found in such conditions. An improperly pruned tree may therefore be a liability to the homeowner or the public agency that is responsible for that tree.

Secondary pest problems related to improper pruning might also occur. Wood rot can become easily established at the location of improperly pruned branches, where a stub has been left behind after the pruning work is done. A tree branch that has been improperly cut may not callus correctly and as a result further tree pest problems may develop.

LEFT: Reduced lane closures are another benefit in center median and right-of-way applications, as seen in these Indian laurel figs (*Ficus microcarpa*). For city employee's, it means less complaints to deal with and increased productivity, while landscape contractors have the potential to increase their bid's appeal to city officials. Make sure you always dose according to label instructions. The City of Glendora uses Mastiff (flurprimidol), which requires 1 milliliter to be injected biannually every four inches around the diameter at breast height (DBH).

RIGHT: The City of Glendora has also experienced growth regulator benefits on the executive golf course. The reduced need to prune means a decreased risk of damaging turf or irrigation heads and lines with heavy trimming equipment capable of servicing a Red Gum Eucalyptus (*Eucalyptus camaldulensis*).

Tree Growth Regulator Benefits

Tree growth regulators reduce the need for regular pruning events. In Glendora we use a product called Mastiff (flurprimidol). This tree growth regulator effects the production of gibberellic acid in the tree. Since incorporating the tree growth regulator program we have been able to significantly reduce the need for pruning of selected trees in our city.

As an example, we use tree growth regulators on many of the city managed Chinese elm trees (*Ulmus parvifolia*). They are what I call budget/overhead breakers. The Chinese elms grow so fast that pruning may be required every six months. A significant problem with the Chinese elm trees is the management of the branch whips that spring from the lower canopy. The long branch whips create a visibility problem for motorists.

The conventional pruning program for the Chinese elm trees was not working well. We were spending far too much time and money returning to the same trees that we pruned a few months ago. We have since implemented the tree growth regulator program on the Chinese elm trees. At this point in time the program has been in effect for 2 years, and we only just had to return for regular pruning work. So we went from pruning every six months to pruning once in 2 years.

We have found that there are additional benefits to incorporating a tree growth regulator aside from pruning reduction. The color of the foliage is an example. We found that after the Chinese elm trees were treated, the color of the foliage was a deeper green in color. The reason for the deeper green is the bunching of the chloroplast (green pigment) cells in the leaf.

Aesthetically, the treated Chinese elm trees still look like a tree. There is no distortion of the foliage or branches. In some situations we have noticed the foliage of some of the treated trees is smaller in size. But, we still have a tree that provides all the benefits of a shade tree but a considerable reduction in the cost of maintenance for the tree.

In Parking Lots

Using tree growth regulators in difficult to manage zones, such as parking lots, has also been beneficial. Trees in parking lots can be a real challenge to manage. There may be time restrictions on when the work can be done. Another consideration is the risk of damaging a car during the tree pruning process. By implementing a tree growth regulator program, you may be able to significantly reduce the normal growth rate of the trees, which in turn saves time and budget/overhead dollars and reduces potential legal liabilities due to the pruning process.

In Center Medians

Trees in center medians can also be difficult to prune. In Glendora, we have Evergreen Pear (*Pyrus kawakamii*) in many of our center medians. Pruning trees in center medians requires lane closures and many types of tree canopy management equipment. By incorporating a tree growth regulator into the tree canopy management program, we have been able to inhibit the normal growth process of the Evergreen pear trees.

On The Golf Course

We incorporate the tree growth regulator on our executive golf course for fairway trees and for around the greens. More specifically, we treat the Eucalyptus and Ash trees (*Fraxinus*). The Eucalyptus trees line the fairways. By regulating the fairway Eucalyptus trees, we are able to reduce the need to put heavy tree pruning equipment on the golf course. Aside from damage to the turf, we are also reducing the potential for broken irrigation heads and lateral lines.

Undesirable wind movement and shade on a golf course can lead to numerous turf pathogen problems, especially on the greens. On several holes, we have Raywood Ash trees surrounding the back of the greens. The Raywood trees (*Fraxinus augustifolia*) add an attractive background to the greens, but they can also increase the potential for turf disease organisms that can damage the greens.

Excess shade, excess moisture and lack of airflow on the greens are all detriments, setting up the disease triangle. We have the host, we have the presence of the pathogen and if the proper environmental growing conditions are provided, the pathogen can begin to grow. Therefore, we incorporate the tree growth regulation program to reduce the amount of new tissue the Raywood Ash trees will produce.

By regulating new tissue production on the Eucalyptus and Raywood Ash trees, wind and sun are still able to move through the trees canopies with fewer restrictions. Consequently, we have been able to reduce the operating costs of the golf course. One example has been in the reduced purchase of pesticides, specifically turf grass fungicides. **LCN**

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