

## **Be Air Aware: The Relationship between Air Pollution and Plant Life**

Air Pollution is not only a human health issue, it is also a hazard to plant life. Air pollutants like ozone can cause permanent damage to leaves and if this damage is widespread enough the entire plant could die. Ozone is a colorless and odorless gas which forms when nitrogen oxides (NOx) and volatile organic compounds (VOCs) in the lower levels of the atmosphere combine and “cook” in the sun. The NOx is produced from operating engines, electric power plants, and other sources of combustions. VOCs come from chemicals such as gasoline, paint, asphalt and other solvents.

### **How air quality effects plants:**

Ozone can cause several types of symptoms including chlorosis (partial failure to create chlorophyll resulting in yellowing leaves) and necrosis (death). Additional symptoms can include flecks (tiny light-tan irregular spots less than 1 mm diameter), stipples (small darkly pigmented areas approximately 2-4 mm diameter), bronzing, and reddening. Ozone pollution has also been found to lower the yield of crops.

Ozone tolerance among plants varies just as it does among people. According to research at the Great Smoky Mountain National Park and elsewhere, many common species of plants are sensitive to high concentrations of ozone. The US National Park Service has cataloged plants that are ozone sensitive, suspected of being ozone sensitive, and plants that can be used as bio-indicators of high ozone concentrations. This list includes Common Milkweed, many species of Alders, American Sycamore, and many other plants.

To view the full list visit: <https://www.nature.nps.gov/air/Pubs/pdf/BaltFinalReport1.pdf>

### **How to reduce ozone pollution:**

Reducing the concentrations of ozone pollution in the air can help improve plant quality. The nursery and landscaping industry can help reduce ozone air pollution by taking action this ozone season through the following steps:

- Replace older engines with equipment that run cleaner or on a different fuel. The state of Texas, through a program called the Texas Emissions Reduction Program (TERP), may provide a grant to reduce the cost for this conversion (<http://www.tceq.texas.gov/airquality/terp/index.html>);
- Tune up your engines and change filters according to manufacturer’s specifications regularly;
- Refuel in the evening (this reduces the formation of ozone which is formed in the presence of sunlight);
- Reduce vehicle idling as much as possible;
- Encourage employees to use alternative transportation to work, such as transit, bike, walk, or carpool;
- Assign employees to travel together during the work day; and,
- Use and store gasoline properly.