

Allergy-Free Gardening

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<http://www.allergyfree-gardening.com>

Allergy, on the rise in the United States and throughout the world, is worst in urban areas. In the past thirty years in the US the percentage of people with allergies has rapidly climbed from 10 percent, to a staggering 38 percent now affected. There are many factors involved in this epidemic of allergy including an increase in the total amount of urban airborne pollen.

In urban areas much of the increase in allergy can be tied to the over-use of staminate (male) dioecious cultivars in our urban landscapes. There is much evidence though, that from years of constant exposure to pesticides and industrial pollutants, that people in general have become more susceptible to developing allergies. As such, people are now often more sensitive to allergens such as pollen than they were in the past. In most US cities, especially on the West Coast, some 70 to 80 percent of the total yearly pollen load has consistently been found to come from the area's urban landscaping, especially from the trees. Weeds and grass pollens make up the rest of the yearly pollen load, however in many cases, the pollen from some of these weeds and grasses is especially allergenic and causes more than its share of actual allergic response. Much of the grass pollen in urban areas comes directly from lawns that are not kept regularly mowed. Bermuda grass in particular is often the cause of grass pollen allergy in cities.

There are now some very interesting and useful new types of grass that have been developed that do not produce any pollen whatsoever. In particular, certain pistillate (female) cultivars of Buffalo Grass (*Buchloe dactyloides*) are proving to be of great use. Female Buffalo Grass cultivars grow shorter than male clones and as such, require much less mowing. Because they are female they produce no pollen and cause no allergy. Buffalo Grass is also winter hardy, easily grown under a wide range of soil and climatic conditions, and is available as sod or from plugs. Because this native grass is especially deep-rooted it requires much less fertilizer and water than most sod lawn species more commonly in use.

There is another important reason for the use of cultivars such as female Buffalo Grass- because they need to be mowed less often, fewer VOC's (volatile organic compounds) are released into the air. The whole issue of VOC production and methods for its limitation is one that will become increasingly important in the future as we seek to find more methods of limiting air pollutants of all types, whether organic or inorganic.

Certain types of weeds and the pollen they shed are of great importance as the cause of allergy. In much of the Southern, Midwestern, and Eastern US the worst allergy weeds of all are the species of Ambrosia, or the Ragweeds. There is a certain amount of ragweed in the Western states and it is most commonly found growing alongside highways. Ragweed is a monoecious species that produces huge amounts of small, very light and buoyant pollen. The individual grains of pollen are spiked with many sharp points and under a microscope resemble tiny balls of cactus. This pollen can and does cause hay fever, asthma, itching, and rash. The number of people allergic to ragweed pollen is very high. Although there is a species of ragweed native to

Europe, in Europe now, there are many species of ragweed present, most of them unwanted imports from America. Likewise, in California we now have many non-native species of ragweed growing. In the past there have been a few examples of successful civic actions taken against ragweed. In several areas of Europe local crusades to wipe out ragweed have had mixed success. In the 1930's in the Montreal area of Canada the local citizens banded together to destroy ragweed. Farmers were encouraged to eradicate it. School children were taught how to identify it in its juvenile stages and contests were held for many years: to see who could pull up the most ragweed seedlings. Eventually ragweed was actually eliminated from large areas due to this combined civic attack. Unfortunately after many years passed, attention was not paid to seeing that ragweed did not regain a foothold and today it is again common in the Montreal area.

It is the feeling of this author that in California, where so much of our ragweed is concentrated alongside highways, that with a concerted effort, we could come close to eradicating it here. At any rate, even partial success at ragweed elimination would result in large increases in cleaner air and would be appreciated by the estimated 10 million people in California who suffer each fall from pollen allergies. There are a number of other weeds common in California that cause more than their share of allergies, in particular the Pigweeds (*Chenopodium* species.), Groundsel (*Senecio* spp.), Plantain (*Plantago* spp.), Poison Oak, (*Rhus toxicodendron*), and the Castor Bean (*Ricinus communis*).

Poison Oak is a dioecious species and is both insect and wind-pollinated. As such this pollen is often abundant in Spring in all areas where Poison Oak is common.

Pollen from Poison Oak can land on people's skin and can cause the exact same symptoms as contact with the leaves of the plant. Inhalation of Poison Oak pollen can be dangerous for people with asthma who are also susceptible already to the contact affects of this species. Castor Bean is a fast-growing annual or perennial plant with very large, often colorful leaves and stems. It is monoecious and the female flowers are above the male flowers, a system that ensures a large amount of wind-pollination. Native to central Africa, Castor Bean is now grown as an oil crop or as an ornamental in many areas of the world. During World War Two a large amount of acreage in the US was planted to Castor Bean as an oil seed crop and within two years of these plantings allergy to the pollen suddenly became both common and severe. Castor Bean is especially common along highways in many of the coastal communities of California. The pollen is shed for many months during the year, from early in the season to late. Whereas most species' pollen usually triggers hay fever symptoms in people, Castor Bean pollen almost always directly causes severe attacks of asthma. Castor Bean is a Euphorbia Family member and as such its pollen is especially dangerous for certain individuals.

Over the years in the US and in other urbanized areas of the world, millions of cars and trucks have been driving down the roads and their rubber tires have been breaking down, due to simple friction between the tires and the roadways. Billions of tiny particles of this latex rubber constantly go airborne and in the process millions of people are exposed to breathing in these minute particles of rubber. The rubber that the tires are made from comes from the collected sap of the tropical tree, *Hevea brasiliensis*, which is also a member of the notorious Euphorbia family. There has been another recent addition to allergies from rubber and this has been caused by the huge increase in the use of latex gloves. With the spread of AIDS, the wearing of these rubber gloves has increased rapidly. The gloves are dusted with powder so that they will not

stick together and when they are put on or taken off, this same powder, now "rubberized," goes airborne. In the process many more people are exposed to latex particles.

In allergy studies, cross-reactive responses are frequently seen. People who are allergic to one particular type of plant, often become allergic too, to the pollen of that plant's close relatives. With the huge increases in latex allergies we are now seeing, it is not surprising that allergy to Castor Bean pollen is also on the increase. Latex allergies are almost always severe. Common symptoms include terrible swelling of the face and head, difficulties in breathing, cough, head ache, skin rash, and all too often, anaphylactic shock. This is one allergy that can and does kill.

At this conference we have assembled here many of the finest minds in our State, people with the most experience at controlling weeds. If from this talk I could somehow trigger a systematic, coordinated attack on just one of these highly allergenic weeds, then I would certainly feel that my time here today was well worth it. If I were to pick two weeds in California to zero in on to improve air quality and quality of life for us all, I would pick ragweed and Castor Bean. Were I to have to pick just one for starters, Castor Bean would be my weed of choice to see it eliminated from our Golden State.