

aaah-CHOO! (The real culprit)

aa-aa-ah-CHOO! It's that time of year again. The irritant, for most allergy sufferers, is pollen, a plant powder that functions as the male element in fertilization; its source is the flowers that imbue our fields and roadsides with bursts of late-summer and autumn color. But which of these flowers is the cause of our misery?

Goldenrod (*Solidago spp.*) is often maligned as a "pollen plant" that causes hayfever and misery. Indeed, almost 100 species of goldenrod grow worldwide and more than 60 are native to eastern North America; 14 species have been documented in the recreation area alone. Their showy yellow blossoms easily attract insects to the nectar in their flowers. Goldenrods can be found growing in swamps, fields, meadows, forests, mountain ridges, roadsides, disturbed soils, and even the tidiest garden. The many types of the Goldenrod family vary in the shape of flower clusters and leaves: wands, clubs, plumes, even an elm-like silhouette. They are also adapted to a range of soil conditions and can tolerate partial shade.

Common Ragweed (*ambrosia artemisaefolia*) is green.



A single Goldenrod "flower" cluster is actually composed of hundreds of tiny individual flowers. Look closely for the tiny disk and ray florets typical of all members of the Aster family, which includes closely-related daisies, asters, and sunflowers. Since, by the end of summer, there are fewer pollinating insects, many late-summer flowers have survival strategies that enable them to reproduce from mid-August until the October frosts. A single Goldenrod stem can produce several thousand wind-borne seeds which will germinate during the next summer, and if all goes well, will flower the following year. Goldenrods also reproduce by making clones — offshoots attached to the parent plant by underground stems called rhizomes. By being effective at various methods of reproduction, Goldenrod ensures its survival regardless of extreme cold, drought, or grazing.

Good thing it does survive! Goldenrod flowers and foliage provide food for innumerable insects and even some mammals. Goldenrod has treated a variety of ailments throughout the world for centuries, from sore throats and fevers to burns and rashes. *Solidago*, the plant's scientific name, derives from the Latin "to make whole," (as in *solidarity*), a tribute to its medicinal use.

It is ironic that this plant with such benefits is thought today to be the cause of hayfever. Goldenrod pollen grains are actually very heavy and sticky and are carried exclusively by larger insects, such as bees; they are not transported by the wind.

Ragweed (*Ambrosia spp.*), a native annual, does not rely on insects to carry its pollen from one flower to another; its spikes of small, inconspicuous green flowers go unnoticed by pollinators—those insects which transfer pollen so it can fertilize. Instead, Ragweed reproduces by throwing caution, and a whole lot of pollen, to the wind. Although a



Tall hairy (wrinkle-leaved) Goldenrod (*Solidago rugosa*) is bright yellow.

large ragweed plant can release up to 50,000 already-fertilized seeds per plant, the same plant can also produce up to a billion pollen grains during its flowering season. These lightweight grains of pollen can travel on the wind as much as 400 miles from the parent plant. What makes Ragweed pollen so irritating to humans is its spiny exterior, which attaches itself easily to the sensitive membranes lining our nasal passages and triggers the well-known histamine response: aah-CHOO!

Although the bane of allergy sufferers, Ragweed is valuable food for wildlife, and its nutritious seeds provide fuel for many fall migrators as well as for birds that spend the winter in our area.

So, as far as nature is concerned, both Goldenrod and Ragweed are beneficial. For those with allergies though, Goldenrod is victim of guilt by association; the real allergy culprit is Ragweed, which often goes unnoticed among the showy goldenrods when both plants flower toward summer's end.

Ah ... ah ... ahhh ... Bless you!