# Solution Sheet Powdery Mildew

#### The Problem

Powdery mildews are among the most common challenges growers face when trying to meet consumer demand for superior plant quality. Powdery mildew fungi are obligate plant parasites, meaning that they require a living host to complete their lifecycle. Powdery mildews typically do not kill plants, but they colonize and infect primarily the upper leaf surface, quickly reducing quality and rendering plants unmarketable. Almost every species of tree, shrub, bedding plants and foliage crop contains cultivars that are susceptible. Powdery mildews are particularly important on sunflowers, roses, African violets, begonias, gerbera daisies, hydrangeas, kalanchoes and poinsettias. Additionally, regular changes in fungal taxonomy cause the list of powdery mildew pathogens to be constantly changing.

#### What To Look For

Many powdery mildew fungi are host specific and may be confined to one plant species or family. Others have broad host ranges and can attack plants that are unrelated. Powdery mildew fungi produce microscopic spores called conidia. Conida are the spores that infect plants and they are easily spread by air (fans or wind) and splashing water. The conidia do not require free standing water to germinate or infect plants, but relative humidity is an important factor in disease development. The most common powdery mildews attacking ornamental plants prefer high relative humidity (90% or greater) and moderate temperatures ranging from 60 – 80°F typical of spring and fall months in most areas.

Powdery mildew fungi colonize leaves and sometimes can be seen growing on stems and flowers. The common name powdery mildew describes their appearance, which is mostly white and powdery. The conidia contribute to appearance and in abundance closely resemble what looks to be powder on the surface of plant tissue. Most often powdery mildew fungi colonize the upper leaf surface and are rather easy to spot. However, symptoms of yellow to brown leaf spots are sometimes present with little to minimal evidence of the fungus. In fact, sometimes the fungus infection occurs on the underside of the leaf surface. Thus, powdery mildew is not always an easy disease to diagnose.

### The Solution

Powdery mildews favor high relative humidity, so increasing air movement around the plant canopy tends to reduce the potential for infection. Space plants to allow as much air movement as possible. Extended dry periods may even kill the conidia. There are limitations to controlling environmental conditions, so fungicides are often the best approach for controlling powdery mildew. Taking a preventative approach with fungicide applications is highly recommended when conditions favor disease development. Many fungicides are currently labeled for use on ornamentals for controlling powdery mildew. Envu has two products labeled to control powdery mildew of ornamental plants. Broadform® (FRAC Group 7 & 11) and Compass® (FRAC Group 11) which are all broad spectrum and offer additional protection against other fungal pathogens causing leaf spot diseases such as anthracnose, *Botrytis*, black spot, *Septoria* and rusts. When applying any pesticide always refer to the manufacturer's label for recommended rates and application intervals.

## Envu Solutions for Powdery Mildew

Product Examples	Active Ingredient	Activity	FRAC Group	Application Rates
Broadform®	fluopyram + trifloxystrobin	Systemic + Translaminar	7 + 11	2 – 4 fl. oz./100 gal.
Compass®	trifloxystrobin	Translaminar	11	1 – 2 oz./100 gal.



Powdery mildew on gerbera daisies. (Envu)



Powdery mildew on rosemary. (Envu)