Tips for Managing Whiteflies on Poinsettias

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Whiteflies are a common and serious insect pest for many greenhouse growers. The mere presence of a few adult whiteflies on an otherwise attractive and healthy poinsettia may be objectionable to customers. Higher populations of whiteflies may cause the loss of plant vigor. Shiny honeydew excretions on leaves may support the growth of the grayish-black sooty mold fungus.

Two species of whiteflies may be found on poinsettias, the greenhouse whitefly (GHWF) and the sweetpotato whitefly (SPWF). The GHWF has been a common pest on many greenhouse crops for over one hundred years. The SPWF has only become introduced in North American and European greenhouses since 1986. USDA APHIS in cooperation with University of Connecticut will be conducting a survey this year to determine the presence and severity of SPWF in greenhouses throughout Connecticut.

The SPWF is generally more resistant to pesticides than GHWF. Growers need to monitor their crop more closely if SPWF is the predominant species and not let whitefly populations build up rapidly. SPWF have a higher reproductive potential than GHWF. An adult female SPWF may lay up to seven times more eggs than an adult female GHWF ***(Table 1).*** For more effective treatment against the adult whitefly females before they lay eggs, growers may need to vary the time between sprays depending upon which species is predominant on their poinsettia crop.

To best identify whitefly species, closely examine the pupal stage with a 10x power handlens. The pupal stage is found on the underside of the oldest leaves. (See Figure 1 for the pupal characteristics of the SPWF and GHWF.) It is more difficult to

TABLE 1: GHWF and SPWF Development at 65°-75° F on poinsettias in days.		
	GHWF	*SPWF*
Egg	9.7	12.6
Crawler (1st nymphal)	4.3	6.5
2nd nymphal	2.7	4.9
3nd nymphal	4.4	5.1
4th nymphal	6.2	5.4
Pupal stage	5.0	5.0
Egg to Adult	32.2	39.0
Adult	5-40	5-30
Oviposition period	6.0	21.6
Total Eggs/Female	7.5	**64.2**
Reference: Sanderson, J.P. 1991 *Whiteflies IPM Laboratories Quarterly* Sept. 1991. 1-3.		

identify species at the adult stage. Adult SPWF'S are slightly more yellow in color and hold their wings "roof-like" against their abdomen. Adult GHWF'S hold their wings relatively flat over their abdomen.

For growers planning to receive poinsettia cuttings, the following suggestions should help in planning an effective whitefly management program. As with any pest management program, prevention and sanitation are a grower's first line of defense.

1. Start with a clean greenhouse. If possible, remove all plants from the greenhouse and turn off the cooling fans for at least one week before introducing cuttings. This will help eliminate whiteflies and other pests.

When complete plant elimination is not feasible, monitor for whiteflies in the area where cuttings or prefinished poinsettias will be introduced. Plan on monitoring at least four to six weeks before the introduction of cuttings to allow for sufficient time to clean any possible whitefly infested areas. Closely monitor favored hosts of whiteflies including gerbera daisy, lantana, "Aurora" geranium and other crops whitefly favor. Monitor one week before cuttings will be introduced to be sure that this area is completely free from whiteflies.

2. Remove all weeds from greenhouse production areas. Maintain a 10 to 20 ft. weed-free barrier surrounding the green-

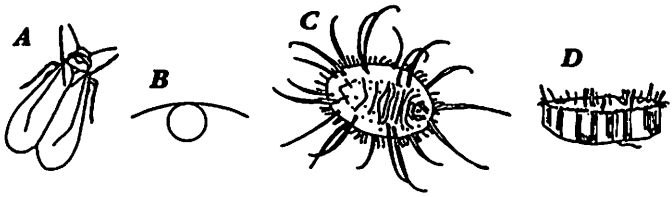

Figure 1. Greenhouse Whitefly: **(A)** Adult (top view); **(B)** Adult (head-on view—note wing angle); **(C)** Pupa (top view—note fringe of small setae, ignore long filaments); **(D)** Pupa (side view—note parallel sides, "cake" shape, fringe of small setae).

Sweetpotato Whitefly: **(E)** Adult (top view); **(F)** Adult (head-on view—note wing angle); **(G)** Pupa (top view—note absence of fringe); **(H)** Pupa (side view—note dome shape).

houses. In the Massachusetts IPM program, scouts primarily found SPWF on lamb's quarters and wild lettuce, however, many other weed species will harbor greenhouse whiteflies, aphids, thrips, fungus gnats and other pests.

3. Remove "pet plants" that may serve as reservoirs for whiteflies.

4. Inspect all incoming cuttings for the presence of eggs and immature stages before introducing cuttings into a production area. Many suppliers may be following IPM practices and would be a potential source of high quality cuttings that are relatively free of eggs and immature stages of the whitefly. If significant numbers of cuttings are infested, the best option is to return the cuttings to the supplier.(Treatment options for the cuttings are limited and may result in phytotoxic damage.) Trying to start a crop with a significant number of infested cuttings is a losing battle.

Concentrate on monitoring early in the crop production cycle. Cuttings need to remain clean for at least one month after sticking to ensure a "clean" crop later in the season. Keeping cultivars of poinsettia together, that are more favored by whiteflies, may ease monitoring efforts. Poinsettia cultivars that are light green in color tend to be favored by whiteflies.

Monitor by using yellow sticky cards, foliar inspections and indicator plants, as suggested by the Cornell IPM Program.

1. Use yellow sticky cards at a minimum rate of one per 1,000 square feet of production area. Place sticky cards just above crop height with a garden stake and clothespin. If possible, use a separate pot for each card, so that the sticky cards will remain in the same place and will not be moved as the poinsettias are spaced.

Yellow cards will effectively trap whiteflies, aphids, thrips, fungus gnats and shore flies. With a 10x handlens, identify the types of insects present. Count the relative numbers of insects on a weekly basis to spot trends in the population levels of adults. Keeping weekly records of population trends will help in preparation for next year's bedding plant season, too.

2. Examine the underside of the leaves for immature whiteflies. On young plants, all the leaves can be quickly inspected. If possible, examine 10 to 20 plants per 1,000 square feet of growing area. If whiteflies are found, mark infested leaves to use these plants as indicators to track whitefly population development.

Begin monitoring early in the crop production cycle to ensure a high quality crop that is relatively free of whiteflies.

References

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