

# REFLECTIVE MULCHES ON WHITEFLIES



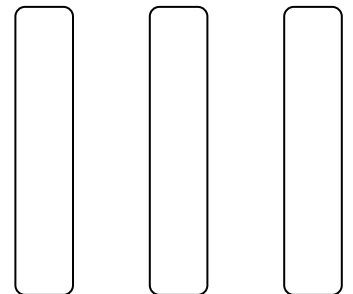
Mulches have a number of advantages to Florida homeowners. Depending on the type of mulch used, these advantages can include: conserving water, inhibiting weed growth, warming or cooling the soil, adding organic matter as the mulch decomposes, and even insect control. While most home gardeners are familiar with using organic matter such as leaves and bark, they are less familiar with using plastic mulches. This project will look at how plastic mulch color affects insect control. Reflective or silver mulches have been shown to reduce the numbers of whiteflies and thrips on many Florida vegetable crops. While the effectiveness of reflective mulches has been proven on a large scale in the field, this project will look at using these mulches on a small scale in the home garden.

## DAY 1

Today you need to “set up” your garden.

1. You need to choose the area for planting your squash. You can incorporate the squash into a preexisting garden as long as you spray “NOTHING” in your garden. It may be better to keep this project separate if you know you will feel the temptation to spray. Choose two areas 3 ft by 15 ft that will receive direct sunlight for most of the day. These 2 rows should be separated by another row in your garden and should be at least 5 ft. apart from one another.

Squash   something  
                  else      Squash



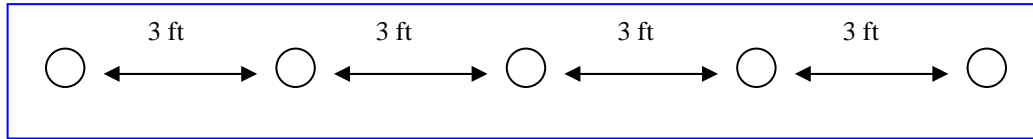
2. Weed your areas, and till the ground. Form two raised beds 3ft wide and 15ft long.

3. Sprinkle the supplied fertilizer on top of your 3 x 15ft beds.

4. Now it is time to make some irrigation decisions. You are about to lay down plastic mulch. You can water with a hose in the mulch holes, but you may also want to consider installing drip irrigation or soaker hoses. Make a decision about how you are going to irrigate before you lay down the mulch. Make sure you use the same irrigation method for both beds.

5. Cover one squash bed with the provided piece of reflective mulch, using landscape anchor pins to hold it down. Cover the other bed with black plastic mulch, and also pin this mulch with landscape pins.

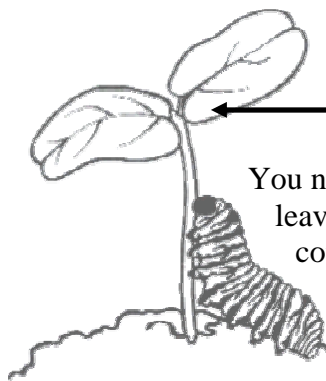
6. You are ready to plant the seeds. The goal is to have 5 squash plants 3ft. apart. Punch holes through the plastic mulches in this manner.



You have been provided with 30 squash seeds. If they are colored (green, red) this means they have been coated in a fungicide to stop seedling rot. **VERY IMPORTANT**- do not touch the seeds. Handle them with gloves.

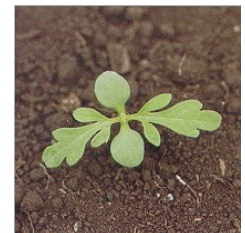
7. While wearing gloves, plant three seeds in each hole (you will thin these out later). Plant them ½-1 inch below the surface. Cover the seeds up with soil.

8. Water in your seeds, and stand back to admire your work!



### **WEEK 1- WEEK 2**

Your squash seeds should now be emerging. It is time to thin them out. You need to wait until the seedlings have at least 2 true leaves. The first leaves that come up when a seedling germinates are called cotyledons. They are shaped like this. A few days after the cotyledons emerge you will notice the development of true leaves (these have a more characteristic look of a squash.) On the right is a picture of a seedling with 2 cotyledons (oval shaped) and 2 true leaves (maple leaf shaped). When your squash plants are this size you can thin them out to one seedling per hole. This should leave you with a total of 10 squash seedlings. Now all you need to do is water and wait!



**WEEK 4** - Time to do your first data collection. By now your squash plants should be well on their way. *Record your name, the date, the time you are taking this data (ie-10:00 a.m.), and the weather conditions (sunny, cloudy, partly cloudy).* When you look at your plant you will notice that you can count the leaves from youngest to oldest. The newest and smallest leaf is counted as #1, the next leaf #2 and so on. The leaves tend to come out in a circular pattern. For your data collection today, you need to decide on the age of leaf you will count. For whitefly counts it is better to count on a middle-aged leaf (maybe the 4<sup>th</sup> or 5<sup>th</sup> leaf) because it is large. The age of leaves you pick doesn't matter as long as you are consistent.

1. Standing by your first plant, choose an age of leaf to count (for example number 4). *Write this number on your data chart in the leaf number blank.* Now quickly turn this leaf over to look for whiteflies on the underside of the leaf. Sometimes it is better to do this with a partner. One person turns over the leaf while the other looks for whiteflies. Whiteflies are very small, about 1 mm long. However, they are quite easy to see on the squash leaf because they are white. You are not likely to confuse them with other insects. If you are uncertain that something is a whitefly, give it a poke to see if it tries to fly away. If it is small, white, and flies, it's a whitefly. You must be careful when you first turn the leaf over because sometimes the whiteflies fly away when the leaf is disturbed (this is why this is a good activity to do with a partner). The whiteflies are less likely to fly away if you take data counts early in the morning, or near sunset (hint, hint). *Record the number of whiteflies on the underside of this leaf in the data chart.*



2. After you finish counting whiteflies on your first plant, move to the second plant (make sure to use the same age leaf on this plant also). Continue on with all 5 plants in this row, making sure you stay consistent with the same aged leaf for each count.

3. Now, repeat this procedure on the other row of squash using the same age leaf.



### **WEEK 6-**

Another round of data collection.

### **WEEK 8-**

Last data collection. Bring your data to the extension office. Wait and see how everyone's results turned out!

### **CONCLUSIONS**

That's it. Don't forget to write any comments you noticed during this project. If you have no whiteflies that is fine, simply write a 0; a 0 is still good data. If you would like to learn more about whiteflies, check out the Featured Creatures website at;

*<http://creatures.ifas.ufl.edu>*

If you have any questions, feel free to contact your extension agent!

# WHITEFLIES ON SQUASH

Name \_\_\_\_\_

Date \_\_\_\_\_

Time \_\_\_\_\_

Weather conditions \_\_\_\_\_

	LEAF # _____	COMMENTS
<b>REFLECTIVE MULCH</b>		
Plant 1		
Plant 2		
Plant 3		
Plant 4		
Plant 5		
<b>BLACK PLASTIC</b>		
Plant 1		
Plant 2		
Plant 3		
Plant 4		
Plant 5		

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Date \_\_\_\_\_

Time \_\_\_\_\_

Weather conditions \_\_\_\_\_

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