



RAISED BED TIPS AND TRICKS FOR FFSN GARDEN PARTNERS

RAISED BED/GARDEN PREP

If Cover Crop was grown:

- Undercut (use tool to cut roots right under soil) and till/mix into soil in late March/Early April.

Cover bed(s) in 1-2 inches of compost.

- Late March/Early April (allow time for breakdown).
 - Frederick County Landfill has it DIRT cheap!
 - 9031 Reichs Ford Road Yard Waste Recycling Facility
 - \$15 per ton (filling tubs and buckets may be an easier way to transport compost).
 - They also carry MULCH! \$10 a ton! Great for weed suppression and soil additives!
- Alternate Suggested Compost: LEAFGRO- \$5.28 per 40 lb bag at Lowes.

Cover Bed in Mulch or plastic sheeting until ready to plant.

- Covering helps retain warmth which helps the amendments break down and 'cure' before seeds are planted or starters transplanted.
- Clear Plastic (Construction Grade or Greenhouse Plastic)- Solarizes weeds and soil.
 - Keep on for 72 hours in direct sunlight, if possible.



https://www.amazon.com/Japanese-Weeding-Sickle-Nejiri-HACHIEMON/dp/B07FP8S3JD/ref=sr_1_12?keywords=hachiemon+weeder&qid=1580152410&sr=8-12

Time and Lifesaving Tool!
\$14 on Amazon!



SEEDLING/SEEDING PREPARATION

- Soil should be 60-75 ° F (based on variety) before planting.
- Pull any weeds that have emerged at root level (refer to the tool on 2nd slide 😊).
- When a handful of soil feels and looks more like crumbly chocolate cake than either an ice cube or mud pie, its likely ready for spring planting.
- Rotate the varieties you plant in each bed to maintain soil health.



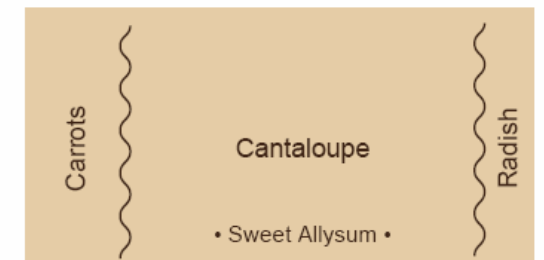
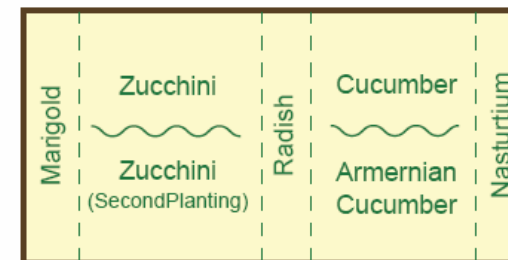
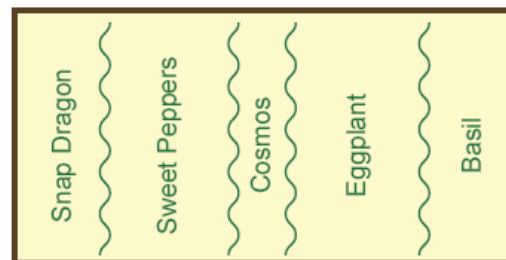
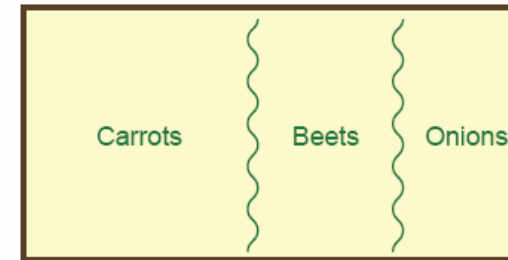
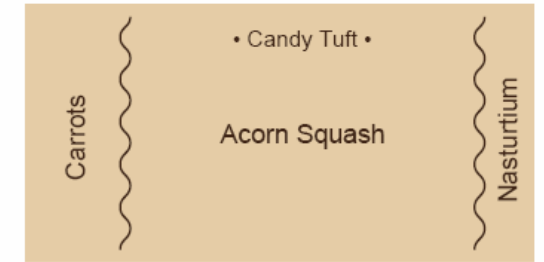
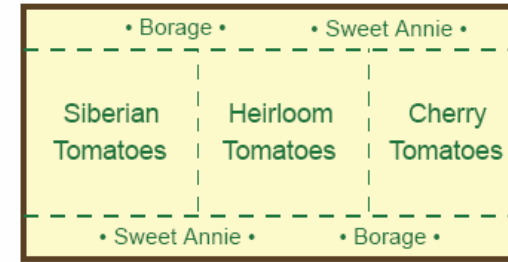
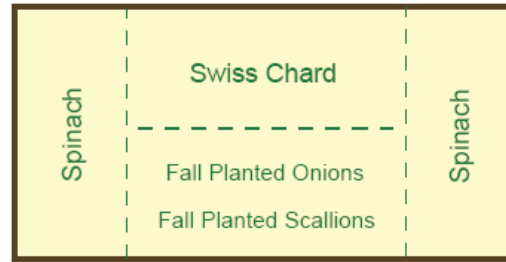
WHEN TO PLANT

- In Maryland, growers can generally plan for a May 1 planting date (last frost) and harvests continuing up until about Oct. 10 (first frost).
- Forget trying to time things around your area's "last average frost date.". Tomatoes and peppers can be set back severely if they're exposed to nights in the mid to high 30s (and even the low 40s). These and other summer plants should not go outside until nighttime temps are reliably in the 50s. That's generally around May 15 or later in these parts.
- Check the long-range forecast before you take your baby plants outside, and be prepared to keep them indoors a bit longer if any upcoming nights are expected to drop anywhere near or below 40.
- Time it like this: You want your plants to be about 6 weeks old when they go outside, ideally around May 15. Add a week up front for the actual germination of the seeds and a few more days for wiggle room at the end, and we're talking about a reasonable seed-starting start date of March 15 or so.

Start Seeds Indoors			Plant Seed/Transplant							Harvest	
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
						Beans					
				Beets			Beets				
		Broccoli					Broccoli				
				Brussel Sprouts							
				Cabbage							
			Carrots				Carrots				
		Cauliflower									
				Corn							
				Cucumber							
		Kale					Kale				
		Lettuce					Lettuce				
			Onions								
		Peas					Peas				
			Peppers								
		Spinach				Spinach					
				Squash							
				Tomato							

COMPANION PLANTING

The planting of different crops in proximity for any of a number of different reasons, including pest control, pollination, providing habitat for beneficial insects, maximizing use of space, and to otherwise increase crop productivity.



Companion Planting Chart for Vegetables

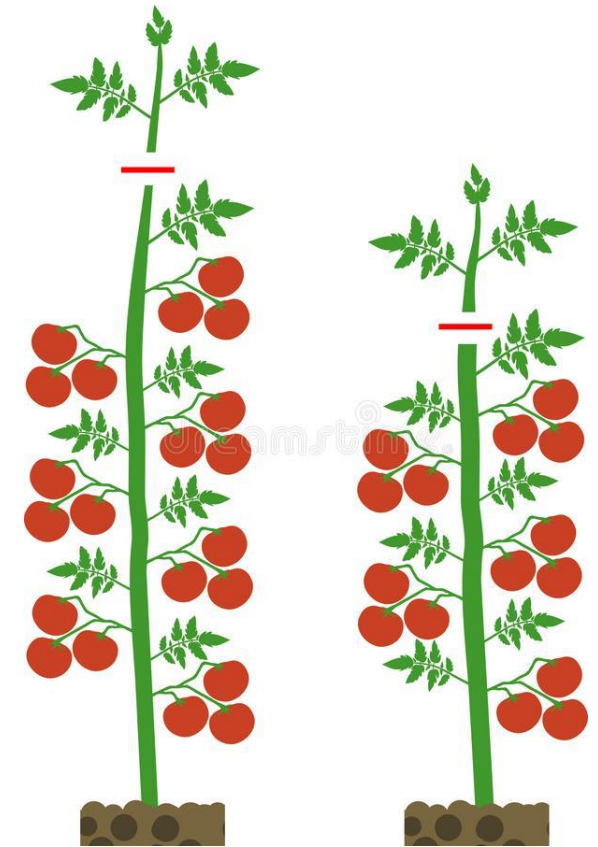
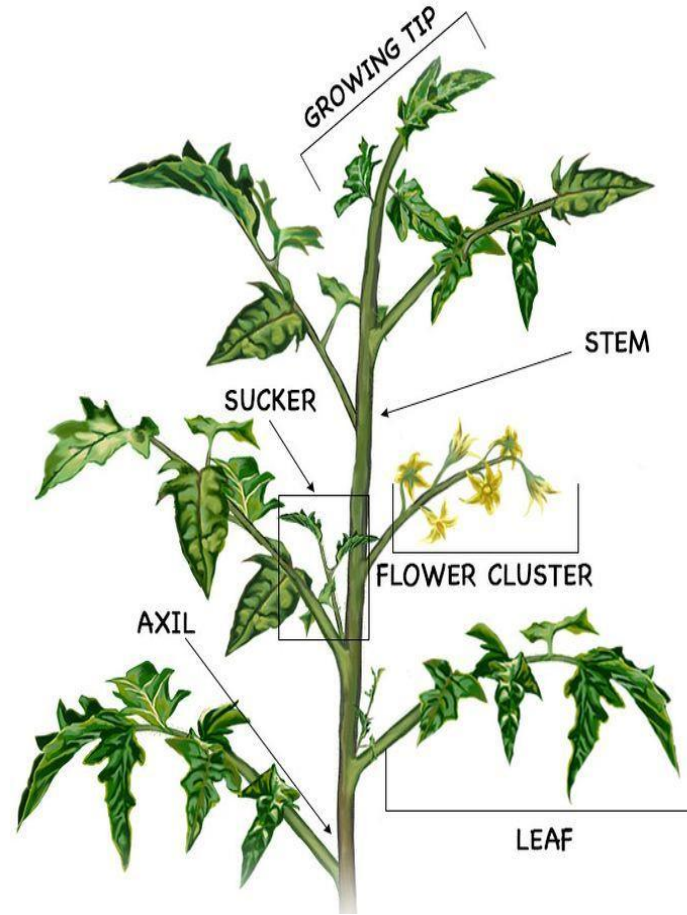
Vegetable	Really likes to be with...	Really dislikes to be with...
Asparagus	Basil, Tomato, Nasturtium, Parsley	Onion, Garlic, Potato
Beans	Carrot, Cabbage, Cauliflower, Cucumber, Marigold	Chives, Leek, Garlic
Broad Beans	Brassicas, Carrot, Celery, Corn, Lettuce, Potato	Fennel
Beets	Brassicas, Lettuce, Onion, Sage	Bean (pole)
Broccoli	Celery, Chamomile, Dill, Rosemary	Oregano, Strawberry
Brussel Sprouts	Potato, Thyme	Strawberry
Cabbage	Beetroot, Potato, Oregano, Sage	Strawberry, Tomato
Carrot	Bush Beans, Pole Beans, Lettuce, Onion, Pea, Radish, Tomato	Chives, Dill, Parsnip, Radish
Cauliflower	Beans, Celery, Oregano	Nasturtium, Peas, Potato, Strawberry, Tomato
Celery	Cabbage, Leek, Onion, Spinach, Tomato	Parasnip, Potato
Corn	Bean, Cucumber, Melon, Pea, Pumpkin, Potato, Radish	Potato
Cucumber	Bean, Celery, Lettuce, Pea, Radish	Cauliflower, Potato, Basil
Eggplant	Bean, Capsicum, Potato, Spinach	
Leek	Carrot, Celery, Strawberry	
Lettuce	Carrots, Radishes, Strawberry	Beans, Beetroot, Parsley
Melon	Corn, Radish	Potato
Onion	Bean Sprout, Broccoli, Cabbage, Lettuce, Strawberry, Tomato	Bean, Pea
Pea	Beans, Carrot, Corn, Cucumber, Radish	Onion Family
Potato	Bean, Corn, Cabbage, Pea, Eggplant	Cucumber, Pumpkin, Squash, Sunflower
Pumpkin	Corn	Potato
Spinach	Celery, Cauliflower, Eggplant	
Tomato	Asparagus, Celery, Carrot, Parsley, Marigold	Corn, Fennel, Potato
Zucchini	Nasturtium	

TOMATOES

STAKING AND LONG VINING

- Allow tomatoes to grow on their own (except removal of “suckers”) until 1st set of flowers appear.
- Stake plants when they reach 12-18 inches in height.
- Once 1st set of flowers appear, remove ALL branches below.
- Then, follow and alternating “one fruit set, once branch” pattern, removing branches in between.
- Continue to remove suckers as plant grows
- This method allows for more air flow, more plants, and decreases disease.

CHERRY TOMATOES- prune suckers only.



PEPPERS

- Begin pruning when your pepper plant is about a foot tall.
- Remove the top half of the plant, ensuring that a few leaves remain on the plant. At this point the plant should have a sizable root system.
- The center stem of most pepper plants will likely look like a 'Y' when the plant is this tall.
- Make sure the point you are pruning from is above this 'Y', as this is the base of your pepper plant. Pruning excess foliage at this stage will encourage the plant to strengthen that base.
- Cut back excess leaves and stems at each node. Nodes are sections of a stem where new leaves and stems can develop. Limiting leaf production ensures that the leaves you do have left are fully developed. It also promotes further stem growth



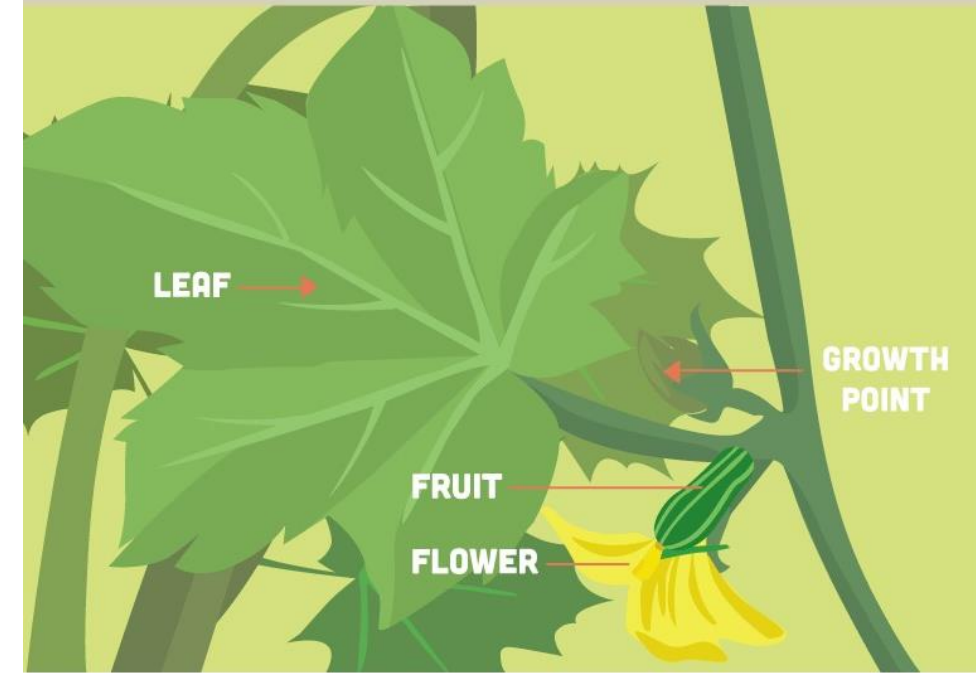


PEAS & BEANS

- Peas and beans can be planted in APRIL! 😊
- Space seeds 4-5" apart.
- Once plants reach 6-12 inches, begin to “train” plants to trellising or staking system.
- Pinching the first set of flower off sweet and snow pea varieties will add height and strength to your plants.
- Both beans and peas must be harvested regularly (every day or two) to ensure continued pod production.

SQUASH & ZUCCHINI

- Prune summer squash plants when they are near maturity, around six to eight weeks into the growing season.
- Cut back each squash vine so that only two or three buds per vine remain. Diagonally cut excess vine at root joint.
- Look over each summer squash plant and remove any dead or diseased leaves or blossoms. Dead growth will be brown and shriveled, while disease will be evidenced by a white powdery coating, black feathery coating or dark spotting on the foliage.



Each leaf node has a:



Leaf



Flower



Fruit



Tendril
(the curly part that
attaches to the support)



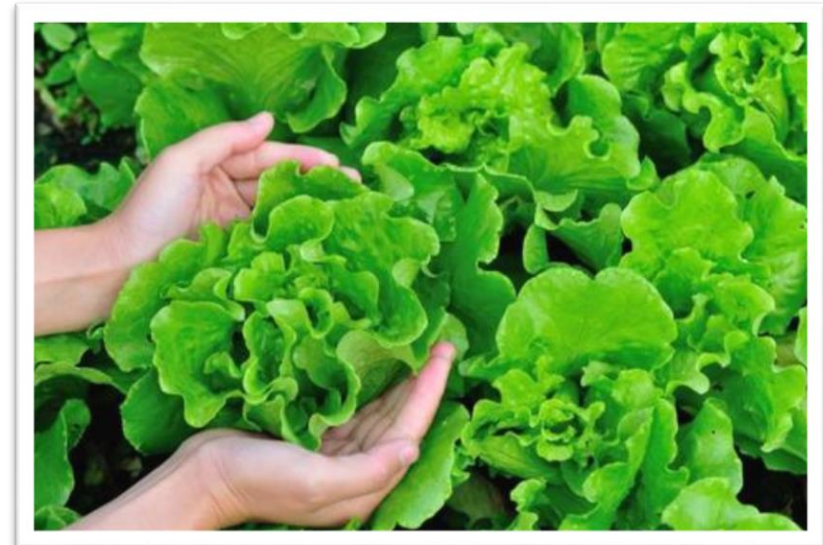
Growth point

To prune the plant, pinch off the growth point with your thumb and forefinger when it's small. Leave the leaf, flower, fruit, and tendril in place.

If the growth points are too large to pinch off with your fingers, leave them alone and focus on pruning the small ones at the top of the plant.

LETTUCE

- You can harvest leaf lettuce from the outside of the plant, leaving the central bud to grow more leaves, or you can cut the entire plant at the base.
- Leaf lettuce is ready to eat at just about any size, and you can pick the baby leaves for tender salads.
- Romaine lettuce forms its characteristic mid-rib before harvest; at full size it makes an upright leafy clump. Bibb types such as Buttercrunch form a loose head; you can harvest anytime, but for the classic Bibb rosette, wait until the lettuce is nearly full size (6 to 8 inches in diameter) and cut it at the soil line.





SPINACH, KALE & CHARD

- Harvest kale leaves when the outer leaves are about 10 inches long.
- Harvest spinach when the leaves are 4 to 7 inches long (unless harvesting baby spinach). Remove only the outer leaves so the inner leaves can continue to grow and produce more greens.
- Cut chard leaf by leaf—cut the outer leaves first allowing the inner leaves to grow larger—or cut away the whole plant one inch (2.5 cm) above the soil. Either way, the plant will keep producing new leaves.



CARROTS & RADISHES

- Carrots, radishes, and beets love temperatures between 40-75 degrees F. Plant them during the fall and spring months. They will even survive a frost. In fact, cold weather makes them sweeter – leave fall root veggies in the ground as long as possible.
- Nice, loose soil will help them grow to their full potential. Compacted clay soil or rocks will result in misshapen or small roots.
- Successive plantings 3 weeks apart are needed to ensure a continuous supply of young root vegetables. All varieties should have their first planting 2 to 4 weeks before the last killing frost.



POTATOES

- A week or two before your planting date, set your seed potatoes in an area where they will be exposed to light and temperatures between 60-70 degrees F. This will begin the sprouting process.
- A day or two before planting, use a sharp, clean knife to slice the larger seed potatoes into smaller pieces. Each piece should be approximately 2 inches square, and must contain at least 1 or 2 eyes or buds. Plant smaller potatoes whole.
- Dig a trench that is 6-8 inches deep. Plant each piece of potato (cut side down, with the eyes pointing up) every 12-15 inches, with the rows spaced 3 feet apart. If your space is limited, you can decrease the spacing between plants.
- Fill the trench in with 4 inches of soil. Let the plants start to grow and then continue to fill in the trench and even mound the soil around the plants as they continue to grow.



GROWING POTATOES IN STRAW BALES

TOOLS AND SUPPLIES

- Approximately five foot length of four-foot high fencing wire. Any hole size will work.
- Tools to bend and crimp wire. And extra wire or strong twine.
- A fence post or other stable structure to wire the potato tower to
- 1 bale of straw.



INSTRUCTIONS

1. Create a circle of the fencing wire about 4 feet tall and 2 feet in diameter. Wire the ends together to secure the circle.
2. Push straw against the outside wire a couple of inches thick and leave the middle hollow.
3. Next Layer straw on the ground a few inches thick.
4. Layer on about 6 inches of good growing dirt.
5. Bury the cut potato sections in the soil.
6. Water the soil, but do NOT saturate it!
7. Layer 6 inches of straw over the planted soil. Repeat this all the way up the tower. Be sure the top of the tower is layered with straw! You want the potatoes protected from sunlight or they will go green.
8. Secure your potato towers! They will fall over in strong winds or unlevel ground. Dave wired his towers to a fence post.

EGGPLANT

- Prune staked eggplant to three branches using hand shears. The two main branches are the primary division of the plant where it first branches out. Leave one branch below this division.
- Remove all suckers. Suckers are sprouts that develop between the main stalk and a leaf node. If left to grow, suckers produce branches that are like plants, with a main stem and side branches. Place the blade of your hand shears close to the stalk and clip out the sucker.
- Clip off lower leaflets from the main branch after the eggplant begins to flower. Removal of these lower leaves improves air circulation and allows light to penetrate the canopy.
- Maintain a schedule of regular suckering throughout the growing season for plant vigor and increased fruit production.



COMMON ISSUES & DISEASE

POWDERY MILDEW- Infected leaves become covered with a white to gray powdery growth, usually on the upper surface. Severely infected plants may turn brown and drop. Fruit ripens prematurely and has poor texture and flavor. A wide variety of vegetable crops are affected by powdery mildew.

DOWNY MILDEW- Affects many vegetables and appears as a white to purple “downy” growth on the undersides of leaves and along stems. The best way to prevent downy mildew is to avoid the conditions that favor it. Prune plants to improve air circulation. Water in the early morning to give plants time to dry out during the day. If you catch the infection early, apply copper fungicides every 7-10 days until harvest. Dispose of severely infected plants.

Neem Oil Spray- 4 tsp of neem oil
2 tsp of liquid dish soap
1 gallon of water

Mix in 1 Gallon Pressure Sprayer : shorturl.at/pxBJS



COMMON ISSUES & DISEASE

Early Blight-Symptoms of [early blight](#) include brown and black spots on leaves that enlarge and develop rings like a target. Leaves may actually die. You'll find sunken spots on fruits and tubers. Prevention includes a copper-based fungicide early, two weeks before disease normally appears or when weather forecasts predict a long period of wet weather.

Late Blight- Occurs later in the growing season with symptoms often appearing after blossom. Look for water-soaked spots on lower leaves and a white fungal growth on the undersides. [Late blight](#) **affects tomato and potato plants**. Plants will rot and die in wet weather. Select resistant cultivars and dispose of all infected plants and tubers. Apply copper sprays every 7 days or less, following heavy rain or when the amount of disease is increasing rapidly.

Mosaic Virus. Affecting a variety of plants **including beans, tomatoes and peppers**. Causes mottled green and yellow foliage or veins. Leaves may curl or wrinkle and plant growth is often stunted. There are no cures for viral diseases such as mosaic. Your best bet is to take preventive measures such as planting resistant varieties and controlling insect pests, especially aphids and leafhoppers, that spread the disease. Remove and destroy infected plants.



COMMON PESTS

HARLEQUIN BEETLE- Found on *cabbage family* members (*Brussel sprouts, broccoli, cauliflower, collards, kale, horseradish, etc.*) It is very partial to cleome, an annual flower. It is a true bug (has a triangular shaped thorax) and sucks leaf sap leaving small white spots known as stipples. Leaves wilt and turn brown from prolonged feeding.

Eggs: Tiny white barrels encircled by black bands with a black crescent on top. Laid in small clusters arranged in rows of six on leaf undersides.



CUT WORM- Stout caterpillars with rough skin, almost 2" long when full grown (there are usually 6 instars). **Black cutworm:** uniformly gray/brown to nearly black, somewhat greasy sheen. **Variegated cutworm:** brownish/gray to grayish/black with yellow-white spots on its back and a dark "W" mark on its 8th abdominal segment of last instar (growth stage).

Eggs: Tiny, white-brown spheres (black cutworm) or half-spheres (variegated cutworm), with ribs radiating from center, laid on foliage in clusters of up to several hundred.



JAPANESE BEETLE- Shiny, dark metallic green beetle with coppery wing covers, broadly oval in shape, up to 1/2" long, with a row of white spots along each side of the abdomen, and hairy legs.



Click [HERE](https://extension.umd.edu/hgic/topics/plant-pests) For a Comprehensive List of Garden Pests:

<https://extension.umd.edu/hgic/topics/plant-pests>

ORGANIC PEST CONTROL METHODS

START FROM THE GROUND UP!

BENEFICIAL NEMATODES- Beneficial, or parasitic, nematodes work by releasing a bacteria that ***kills the host insect in as little as 1 or 2 days***. These nematodes exist in most soils in small numbers, but there usually aren't enough of them to control large pest populations. Nematodes are very effective for controlling soil-dwelling pests like root maggots, cutworms, Japanese beetle larvae, and other grubs.

NEEM OIL SPRAY- used to manage squash bugs, potato beetles, bean beetles and other leaf-eating beetles. Neem oil contains several natural steroids. When it is applied to plants and sprayed on pests, the insects will lose interest in laying eggs. They will also eat less and grow more slowly.

For best results, begin applying Neem oil at the first sign of adult insects. Continue to reapply every 7 to 10 days for the entire growing season.

Neem Oil Spray- 4 tsp of neem oil
 2 tsp of liquid dish
 1 gallon of water

Mix in 1 Gallon Pressure Sprayer : shorturl.at/pxBJS

FLOATING ROW COVER- Translucent, white, porous polyester fabric acts as an insect barrier, while letting in up to 80 percent of the available light. You can buy either lightweight or heavyweight types—you'll want to use the lighter one for controlling pests in summer, because it will keep out bugs without cooking your plants. The heavier reportedly traps more warmth and so is better for season extending.

For A List of Organic Pest Control Methods (By Pest) Click HERE:

<https://extension.umd.edu/hgic/topics/plant-pests>

RESOURCES AND CONTACTS

- COMPOST AND PROCESSED MULCH