

PEST PRESENTATION

OCTOBER 16, 2024

Good afternoon this afternoon I'm going to be talking about dealing with insects in the garden.

Rather than dealing with them before they arrive. As the saying goes “an ounce of prevention is worth a pound of cure.

I have gleaned my information from a variety of sources on line books and a by working on 2 very successful organic farm. Harmony Valley farm is located in central Wisconsin and Arctic organics in Palmer Alaska

I worked on the farm in Wisconsin. We had 11 employees who were Montagnard or Hmong's who were brought from Cambodia to the US at the end of the Vietnam war because they worked for the US assisting in rescuing shot down pilots, gathering intelligence and relaying information on north Vietnamese If they remained, they would be persecuted or killed. These people who came from the mountainous regions lived close to the earth as farmers sustaining themselves without machinery or chemicals developing simple methods to plant, protect, cultivate and harvest. I learned a lot from them and appreciated what they taught me. The owner Rich DeWile developed a following for the Asian market and customers demanding high quality organic and specialized vegetables and a CSA.

Community Supported Agriculture.

Consumers buy subscription in the winter. Price is based on the type of subscription. The customers actually are investors in the farm and share in the harvest which can be bountiful or not due to possible losses incurred because of bad weather. By growing a variety of diverse crops, he avoided total losses that are common in mono cropping.

Now I'm finally going to share with you thing I've learned

One of the first and most important things I learned was rather than wait for an infestation of insects or diseases using techniques developed in the thirties and forties that were based on Manpower and small equipment such as flammers and two row Pickers. As the saying goes “An ounce of prevention is worth a pound of cure”.

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Preventative Pest Control The first thing is to identify the insects that are invading the garden this can be based on the damage that is done. To be successful in organic gardening it's important to know what are the good and the bad insects because only 20% of the Insects found in Gardens are detrimental. Identifying the beneficial insects is important; they will help you in your war against those that are detrimental. The chart shows good and bad types can give you an idea of the most popular or unpopular bugs that we have to deal with.



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Cultural Controls Cultural controls that are used to grow healthy plants by keeping the garden clean, avoid heavy wet matted material that may harbor critters. Remove fruit fallen on the ground they will attract bugs and rats. Removing the lower leaves or staking plants to avoid splashing raindrops spreading diseases onto the leaves and making easier it for crawling bugs to access the plant.



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Companion Planting

Companion Planting and crop rotation are important, avoid planting plants in the same location as last season. Doing so leaves them vulnerable to the next generation of soil born pests that have been developing as grubs.

Select species and cultivars that grow quick and mature early. Examples are a cultivar developed for organic growing is corn with tight tips that prevents insects from entering the cob in the first place. Select cultivars like heirlooms that have developed some natural resistance to diseases and insects.

Choose plants that repel particular bugs and/or also attract beneficial predator bugs. It is important not to destroy the beneficial bugs. Also try using sacrificial plants. Example: grow onions at home early then plant them. Then seed the new onions. The insects that attack the older onions are removed and destroyed allowing the young shoots to mature. Planting marigolds among the plants repels many bugs and attracts pollinators. Some farms have had success by planting sunflowers around the crops to ward off pests attract pollinators and the sunflowers are another crop.

Saving seeds from the healthiest plants you grew you will develop your own strains of plants that are more pest and disease resistant. Keeping the garden clean includes checking on new plants you bring in. Look for damage, holes, ragged leaves, bug droppings or webs so you can stop invaders before putting plants in your garden.

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Solarization Solarization is heat treating the soil by using clear plastic over the soil. High temperatures generated kill many pests or drives them deeper into the soil. This this may work, however the season that's hot enough to sterilize is often the time when you want to be growing.

Rotation Rotation is changing the areas of planting to avoid growing plants like tomatoes or potatoes in the same area that you planted last season to avoid specific insects that inhabit the soil around these plants and come back to haunt you next year from egg left in the soil. In Alaska they don't solarize the soil; mother nature freezes the soil. Potatoes from Alaska have no problems with Colorado potato bugs because the soil freezes to a depth that kill them. This is why potato growers overseas only import seed potatoes from Alaska.

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Physical Barriers Physical barriers prevent access to the plants. One type of barrier is a floating row cover. It is a woven fabric that has a dual purpose if put on early spring to protect the plants from late frost. Laid over the crop the cloth is left to float freely and pinning the edges. When the new plants emerged, it allowed them to grow and push it up. This works best with salad, carrots beets and other low root crops The fabric is light and permeable allowing water and sun to penetrate it. It is inexpensive and very effective. One precaution is to remove it if it gets too hot.



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In my garden I use hoops that I found online. ½ inch irrigation hose can be bent and stuck in the ground with the same results. I am also trying a new product a fine mesh similar to screen used in windows and allows the rain and sun in easier plus not easily dislodged by wind

To deter insects before they get to your plants use abrasive deterrents to repel them placing it around your plants. Crush and pulverized eggshells. When I accumulate enough eggshells to process, I put them in a microwave and cook until they start to smell. Then put them in a blender pulverizing the eggshells into a powder. The shells act like razor blades to the insects which strips them of their wax coating and dehydrates them.



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If you don't want to mess around with smelly egg shells, Diatomaceous earth works on the same principle only it comes from excavated Diatoms that inhabited the oceans when they covered the land like here in Florida. These creatures were small crustaceans that had sharp edges that you might compare to a crab with the little horns all around their shell. They work in the same physical fashion as eggshells. Apply it as a dust to the soil, and the leaves if the insects are attacking from the air. The best method for applying it is using a duster. The club has one at the garden. It is available for use by all members of the Club. It is very effective because the nozzle at the end allows you to blow the diatomaceous earth on top of the plant and by turning the nozzle it will blow the product underneath the leaves improving effectiveness.



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Horticultural Oils Horticultural oils work in killing the eggs and by suffocating adults. It blocks the bug's air tubes when sprayed directly on the insects. The nice thing about Horticultural oils is there has never been indication of development of resistance to them. This can happen by repeated use of pesticides that are often used incorrectly or too frequently. A dormant oil can be used for extended periods of time to control the bugs. These oils have been used for over one hundred years. They're non-toxic to birds, bees, people, and animals.

Botanicals There are wide range of botanicals but I will only discuss the most popular and easily available products.

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Neem Oil It has been used in India for centuries and is often referred to as a medicinal tree. The entire tree is used for many other purposes including medical product giving them the name “Natures Pharmacy.” Neem oil comes from a shade tree growing in warm tropical zones currently grown in Florida and California it can be found in the gardening department of nearly every hardware store like Lowe’s.

The oil is derived from seed kernels, pressed, extracted by water, alcohol or petroleum ether. It is toxic to insects and it acts as repellent or deterrent by disrupting the growth and sterilizing some species. The best neem oil to use is cold pressed used as a drench or through a sprayer coating the plants. Its' effective on a wide range of pests such as mites', beetles, ear worms, moths, nematodes, spiders and more. I like it because it is non-toxic to humans and animals and does not cause any damage to the plants



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Bacillus Thuringiensis It is isolated from food medium to grow the bacteria. The name bacillus refers to the bacteria that have been bred to deal with particular targets. It is most effective on the army worms, Colorado potato bugs, beetle larvae and more. However, it can harm some beneficials particularly the butterfly caterpillars; use with caution. Several strains of bacillus have been developed to deal with specific insects as in San Diego, California which is used for insects that attack tomatoes like horn worms

Sticky Traps I have effectively used sticky traps to determine what pest you are dealing with. I've used these little yellow sticky trees first to determine the type of bug. The bugs are attracted to the color of the trap. When they land on it, they stick to it. You can then determine what approach to use. An actual trap can be homemade using specific colors and applying tangle foot. I've used them in my garden project in New York very effectively and on apple trees. As an example, before the apples start to ripen the bugs are attracted by the color when the apples ripen. I applied tangle foot to Red Christmas tree bulbs and hung them in the trees The insects were attracted to them; they stick to the bulbs when they land.

Pheromone Traps I have found Pheromone traps to be very effective for specific insects, they work by using female sex pheromones that attracts the males trap containing the pheromone. It works because males chase the tantalizing odors, they become confused burning up energy looking for the female and waste time till they die without mating.

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Collars If you have a problem with cut worms that chew the plants stem. Wrapping newspaper or plastic collars around the stems are effective to keep them from attacking by denying access to the plant because can't climb over the collars.

Copper Barriers Strips of copper are stuck to paper and laid in between the rows or around target crops these are effective and preventing slugs or snails when they attempt to cross the copper it gives an electrical shock and keeps them from coming across it and attacking your plant.

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Miscellaneous Items

Masters Gardeners Phone Number: 352-671-8400



These are only a few of several very effective means to deal with insects before they even attack your garden. I hope you take away some ideas that you can use. Our secretary Jeff will be putting this information and pictures of beneficial bugs and detrimental bugs on the club web site.

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Presentation – Pests in our Garden Plots



Harlequin Bug

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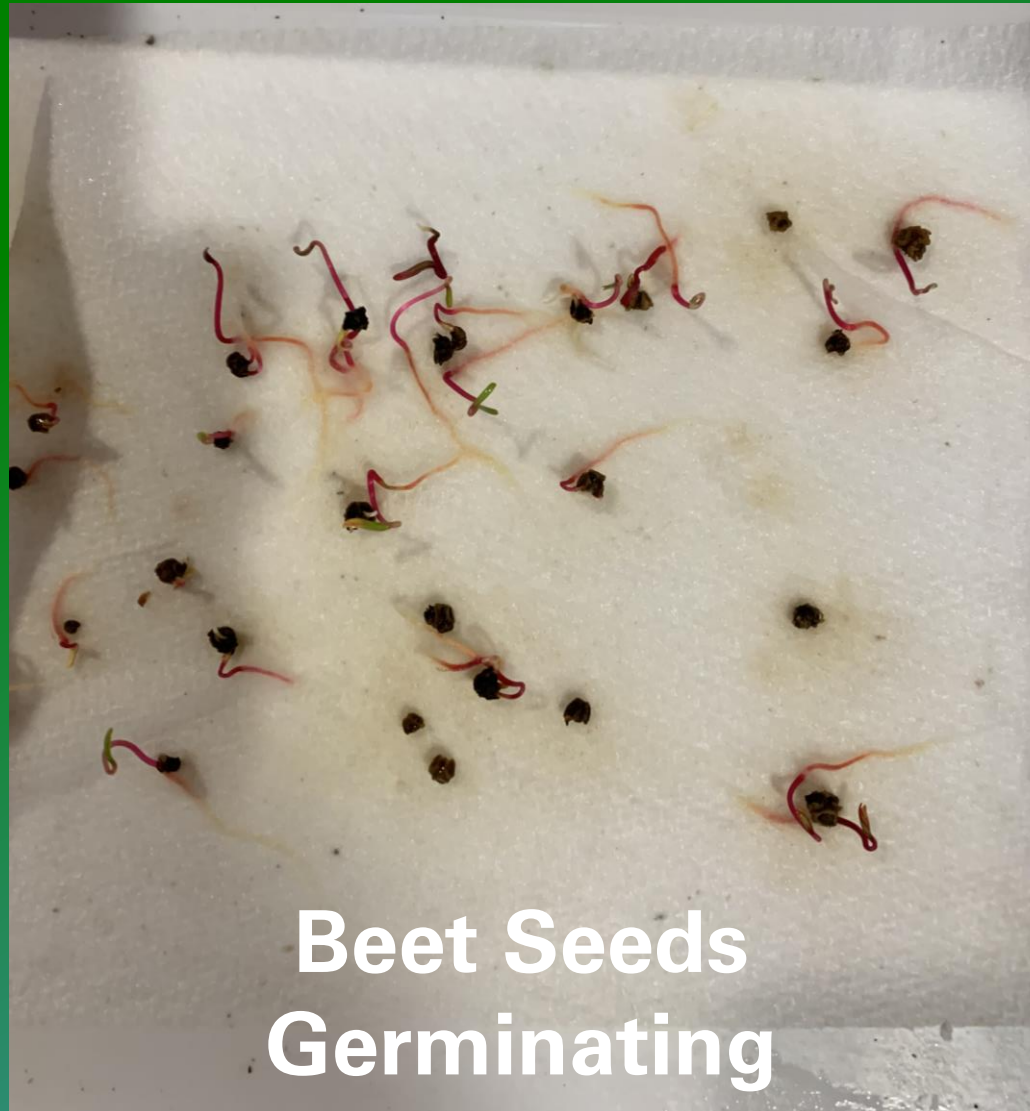
Leaf Roller Worm

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Presentation – Pests in our Garden Plots



**Beet Seeds
Germinating**