

ASK THE EXPERT

Pest Control Topics of Concern

The City of Lincoln Stormwater Program has an Our Water Our World (OWOW) Integrated Pest Management (IPM) pest control expert available to assist Lincoln residents in addressing their pest problems in an environmentally friendly way. Residents can submit questions via the City's stormwater website, and the IPM expert, who is experienced in developing and communicating least-toxic, sustainable, and environmentally sound IPM solutions, will provide answers. The question submittal form is available at this link: www.lincolnstormwater.org/residents/gardening-pesticides. This document summarizes the questions received and answers provided.

****Please press your keyboard's "control" button while clicking a link to access the web pages referenced throughout this document.***

ANTS

What is the best way to handle ants inside my house?

We recommend that you take the following approach:

1. Use strategically placed ant bait stations;
2. Use a wet, soapy cloth to clean up ants and their scent trail; and
3. Patrol the outside of the home for entrances the ants are using.



There are many effective bait products out there. Here's a link to an example product that works well:

<https://www.terro.com/terro-liquid-ant-baits-2-pack>. Follow the instructions closely for efficiency and safety for you, your pets, and the environment. The ants take the bait back to the colony. Sprays are not recommended. Sprays only kill the few ants you can see and leave pesticide in your home. Sprays are also not effective against ants outside of the house.

Further, those sprays have a pesticide that can be harmful to you and the water supply. Use a wet, soapy cloth when you wipe up ant trails. The soap erases the scent the ants left behind for others to follow. Also critical is using a caulk gun and patching any entrances the ants use. This link is to the University of California page on how to exclude ants from home:

<http://ipm.ucanr.edu/QT/antscard.html>

What is the best way to handle ants outdoors?

Ants outside the home are not too serious, but they can definitely be a nuisance. Using ant bait stations is the key. Generally, the bait stations come several to a pack, and the directions will tell you where to best place them for the best results. With bait stations, an ant or two will take some home to the colony; then, you are handling the whole colony. Sprays only kill the few ants you see, can unintentionally cause harm to other insects we do need, and can possibly be harmful to us and our pets.

How can I handle ants in my lawn and patio area without harming my pets?

A possible reason the ants might be at the lawn line is that the soil is wet from recent rains, causing the ants to try to leave. Looking at the active ingredients in outside ant bait stations or sprays, it doesn't look like they are safe for your pets. The stations are meant to be hidden, but the risk that your pets would find it is not a good risk to take. The sprays have a strong insecticide that would also be a high risk.

Unfortunately, organic options, such as herb oils and diatomaceous earth, may not be good, either. Organics rely on oils that burn or on bits of dust with silica that could irritate your pets' noses or lungs. Excellent information on how to exclude ants from the home is available here: <http://ipm.ucanr.edu/QT/antscard.html>. Hopefully, knowing that the species of ant present outside isn't likely to survive in the house and rainfall could make ants more active, you will feel comfortable about not treating the ants.

What can I do to remove red ants from my yard?

Red ants, either Red Imported or Harvester, have mounds we can see on the soil. It is important to know which type of ant colony you have. This link has photos to help identify ants: <https://ipm.ucanr.edu/PMG/PESTNOTES/pn7411.html>.

Springtime is an ideal time to attract and kill an ant colony. Sometimes ants are particularly active when the soil is boggy and wet from excessive rain or irrigation, or when the soil is extremely dry in the summer. Check on irrigation and drainage. Mulch can be added to adjust soil moisture to reduce the presence of ants.

If an insecticide is needed, hydramethylnon is an active ingredient recommended by the University of California. It is a protein bait that will attract red ants during springtime. The product *Amdro® Fire Ant Killer for Mounds* (<https://www.amdro.com/all-products/fire-ant-bait>) uses hydramethylnon. Although the City's IPM Advocate does not promote the use of certain products, this product has the ingredients listed so you can compare it with other available products.

Please follow all application instructions carefully for maximum effectiveness and to avoid having any of the ingredients wash away. If the insecticide you use doesn't work, it may be necessary to find an exterminator (also called a pest control operator) experienced in ant control. Since many of the active ingredients professionals have access to are fairly hazardous, consider picking a pest control operator who uses and is certified in IPM approaches. For more information on choosing a pest control operator, visit the City's website: <https://lincolnstormwater.org/residents/gardening-pesticides/#operator>

APHIDS

I have several crepe myrtle trees and bushes that become a sticky mess by the late summer and fall. How can I control this without killing all the good bugs?



Aphids can overwhelm a plant and leave a shiny, sticky mess all over the place. The good news is there are many ways to control aphids effectively while reducing harm to other beneficial insects. We recommend the following approach:

1. Check the plants for trails of ants. Ants love the sweet, sticky honeydew that aphids produce. Because ants bring in aphids, fight off aphid predators, and manage aphid health, it's important to keep ants away when you're trying to get rid of aphids. Control the ants with a sticky barrier, such as Tanglefoot, or ant bait stations.
2. Mulch at the trunk provides insects with a safe, covered walkway directly to your plants. If you have mulch (and we highly recommend mulch), pull it back from the trunk to leave six inches of clear ground all the way around.
3. If fertilizer is needed, stick to organics. Aphids want young, tender growth, which synthetic fertilizers push constantly, meaning that the aphids will never give you a break.
4. Check on any irrigation used. Plants can only "drink" from the canopy or drip edge. If the water is near the trunk, the tree can't access it and gets stressed. Stress leads to more aphids.

For more helpful information, please see this link: <https://ourwaterourworld.org/aphids>

What time of year is the best time to put out the ant bait stations and place the Tanglefoot to control the aphids?

Ants are at high levels in the fall, and it is a good idea to place bait stations at that time. Place the Tanglefoot by the last week of January. As soon as temperatures get over 55 degrees, the ants and aphids will show up.

BERMUDAGRASS

How do I manage invasive Bermudagrass?

Bermudagrass (*Cynodon dactylon*) is tough to remove from lawns because warm, moist soil is exactly what weeds love. The following tips may help you manage this wiry, invasive weed:



1. Prevent weeds by increasing the height for mowing your lawn to allow the grass to shade out ALL weeds. A lush, tall lawn will help outcompete weeds.
2. Check the edges of your lawn on a regular basis to look for and manually remove new Bermudagrass.
3. When Bermudagrass is elsewhere, such as a veggie or flower garden, review the photos in this Weed Gallery so you can recognize it amongst all the other plants: <https://ipm.ucanr.edu/PMG/WEEDS/bermudagrass.html>.
4. For larger areas, consider using the proven strategies of mulching or solarization, which primarily involve placing

plastic (polyethylene) sheet mulching during the summer to control weed growth. These approaches require careful implementation and need to be maintained for several weeks to be effective. Detailed information on mulching and solarization is available at this link: <https://ipm.ucanr.edu/pmq/pestnotes/pn7453.html>.

Can I place Bermudagrass in my compost?

Please do not put Bermudagrass (or any weeds, for that matter) in your compost, as it will thrive and grow in the compost. Instead, use a green waste bin, if available.

Can I use herbicides to control Bermudagrass and other invasive weeds?

If herbicides must be used, remember that they have very precise instructions. The active ingredients may be safe for the lawn but will harm almost all other plants. Read the product label, note any cautions, and carefully follow all instructions for timing, mixing, and application.

COCKROACHES

How can I get rid of cockroaches in my garage?

Cockroaches thrive where there is food, water, and protection. Garages often have all that and are difficult to seal off because of garage doors. Using a combination of control measures and bait stations (not sprays) will give the best long-term result. Certain bait stations work best and have the least danger to you, your pets, and the environment, but they must be placed carefully.

The ingredient recommended for bait stations is boric acid, and Harris's tablets are available locally at Home Depot and Green Acres Nursery and Supply <https://pfharris.com/products/harris-roach-tablets-kills-roaches>. For more detailed information on control and bait station placement, this link is helpful: https://ourwaterourworld.org/cockroaches_2-14-21

I have a regular pest control service but still have problems with large roaches in my yard and garage. How can I safely get rid of the cockroaches when I have young children who play in the yard?

In addition to the information provided above, which is particularly helpful to ensure cockroaches don't find their way inside your home, please see this link for more guidance from the University of California on keeping cockroaches out of your yard: <http://ipm.ucanr.edu/QT/cockroachescard.html>. Both the University of California and OWOW strongly recommend the use of baits, rather than sprays.



GRASSHOPPERS

Dozens of grasshoppers are eating everything in my yard. What product can I use to kill them? "Sevin" and "Bug B Gon" don't work.

Grasshoppers can make a serious mess of plants, especially when plants are young and tender with spring growth. Grasshoppers love warm and wet conditions, which are ideal for breeding. Sevin and Bug B Gone are pyrethroid pesticides. Any product that kills grasshoppers, including pyrethroid pesticides, is an extremely serious pesticide that will also kill almost all beneficial insects. Furthermore, these products need to be applied often, and there is not much evidence that they will work on adult grasshoppers.

Encouraging grasshopper predators by providing habitat is a possibility for grasshopper control. Birds, lizards, snakes, and raccoons do a great job. We would usually suggest that you find out what the grasshopper eggs look like and hunt them down, but they are laid under the soil surface where we can't easily find them.

Until the young plants mature and toughen and the grasshoppers move on, the University of California suggests these options:

1. Use row covers to keep the grasshoppers out.
2. Decoy plants can be helpful. Keep an attractive, green border of tall grass or plants around the perimeter of the area you want to protect. The grasshoppers stop right there and don't go any further. Keep this border watered and lush.
3. Manually catch and kill the grasshoppers.

As soon as your plants mature a bit, the damage should stop.



I'm a new resident living next to Lincoln's open space. Last summer, I was shocked to discover three-inch-long grasshoppers destroying the leaves of my Meyer lemon tree and my basil. I never saw these at our previous home, where we had six Western bluebird nest boxes around the property. Our current nest box has nesting bluebirds, but those three-inch monsters are already eating my lemon leaves. I'm trying some neem oil, which seems to be a deterrent. Is there anything else I can do? It's time to plant the veggie garden—but it is for me, not grasshoppers on steroids!

Grasshoppers can be an awful problem, and in the late spring, young grasshoppers are out in force. Our spring conditions were warm and wet, and the grasshoppers are having a population boom. The open space nearby is inadvertently ideal for them. The good news is that this should be a temporary problem. The young are born where there is food, and when that food is gone, they die out or move on. Often there are just a few of them, and although they can make a mess, catching and killing them is effective. However, there can be a lot of grasshoppers, and catching them all is not easy. The bird nesting boxes are excellent, and you have hit a home run with that!

More good news is that citrus is tough and loves to put out new leaves. Check on your irrigation and stick to organic fertilizers for a strong tree that can recover quickly when the grasshoppers move away.

For your vegetable garden, exclusion using netting and row covers is going to be the best approach. As summer comes along, the grasshopper population should plummet, but protecting your young tender garden now is critical. As a plus, exclusion will help against other problems, as well.

Unfortunately, there are few pesticides that work on grasshoppers, and the ones listed to kill them will create very tough conditions for your garden. These pesticides kill almost all beneficial insects and invertebrates, including bees and earthworms, and are a significant hazard to water quality and aquatic organisms. Furthermore, a pesticide label may state that the product kills grasshoppers, but the product doesn't work on the adult form of the insect. It is recommended that you check the labels of specific neem oil products to see if they help with grasshopper control; however, please keep in mind that neem oil is not generally considered to be an integrated pest management option.

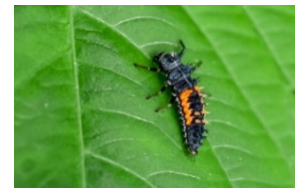
Please see this link for more guidance from the University of California about grasshopper management:

<https://ipm.ucanr.edu/PMG/PESTNOTES/pn74103.html>.

LADY BEETLE LARVAE

What are these insects that I see running up and down my tree?

The insect (pictured here) is the larval form of the lady beetle! The younger form of these insects eats more than the parents do. They look so different from the cute little red and black adults that it can sometimes be hard to believe that they are good guys, but these are beneficial insects.



LIZARDS

When we purchased our home about 3 years ago, there were small lizards everywhere. Last year, they disappeared. How can we encourage the lizards to return? They are great gardening companions. Are our neighbors using too many pesticides? Is that what drove the lizards away?



Although we don't have just one answer, we do have several possible answers. If any of these seem like a possible reason, you may be able to make the change that brings these lovely lizards back. If neighbors are using pesticides, the lizards may have left or starved because they don't have any insects to eat. Further, there are some commonly used pesticides that can hurt lizards. Imidacloprid and pyrethroids are a problem for the water supply and lizards.

Habitat destruction is something to consider. Nearby construction or disturbance of their winter sites of leaves, rocks, or wood piles can be a cause. The last possibility is lizard predator populations may have risen. These include cats, dogs, hawks, and snakes.

MICE

In April, my car sustained \$4,000 worth of damage due to mice that got into the engine compartment, air intake, air filters, and hoses. I need to park my car outside, so I can't solve the problem by parking in a garage. What advice do you have to prevent future mice damage to my car?



Thank you for reaching out to us about the damage your car had due to mice. They are attracted to the wires, insulation, warmth, and privacy of car engine compartments, and it is an awful problem to have. Having your car outside during the hot months can help, as the car is too hot to be comfortable. Springtime is when this is the biggest problem. Several strategies for stopping rodents within residences will not work for a car parked on the street:

1. Exclusion, such as wire mesh and other barriers, cannot easily be used with cars.
2. In residential areas, it is challenging to remove nearby brush piles, pet food, and water supplies that attract rodents.
3. Rodenticides are not recommended, as the dead rodent may have hidden in the engine compartment, and the smell will not be acceptable.

Instead, the following options are available:

1. Trapping: Traps are often placed near the front wheel wells, where rodents typically enter the car. This website has "Tips for Using Traps": <https://ourwaterourworld.org/rats-and-mice>.
2. Deterrents: There is some evidence that scents derived from peppermint and cloves, either in spray or pellet form, help when used near car entrances or in the car.
3. Parking Location: If possible, do not park close to trees or plant material that might touch the car. Rodents hide in there and have a short walk to your car. Park where it is bright, as they prefer dark places.

MOSS

I have moss growing on the lawn and rose bed and around the base of trees. The level of invasion has increased substantially compared to last year. I'd like to use an environmentally friendly approach to ridding the moss since I'm about 400 yards uphill from a protected ravine. Do you recommend iron?



The presence of moss is often a sign of two things: shade and wet soil that doesn't dry out between watering. As trees grow, they progressively create more shade, encouraging the moss. The soil gets a bit compacted, as well, and ideal growing conditions for moss are the result. Soil that hasn't had a chance to dry out will become waterlogged and soggy. The lawn will start to become sparse, and moss takes over.

To help reduce the presence of moss, moisture control is key. Check on your irrigation wherever you are seeing moss. Allow soil to dry out to an inch beneath the surface before watering again to hopefully get the moss under control. Adding mulch around the roses can also help to moderate soil moisture.

Pesticide products with iron sulfate (or "liquid iron") as an active ingredient are known to be hazardous and toxic to fish, so we recommend controlling the moss through moisture management or manual removal. Choosing a safer method is especially important since you live near a ravine, and any chemicals used on your lawn will travel downhill with storm runoff or irrigation to the ravine.

PLANT CARE

My star jasmine bush and several other bushes and trees were beautiful, green, and flowering. Over the past several weeks, the leaves have turned yellow with something that looks like mold, and they are falling off. Would you be able to tell me what the problem is and what pesticides you might recommend for controlling it? [Photo documentation was provided to the IPM Expert to assist with this question.]



Good news: this problem can be addressed without chemicals! The effects you're seeing are consistent with sun and heat damage. Sun damage will almost always appear on the side of the plant facing the setting sun. Heat damage may appear all over the plant. Some spots could be the result of water droplets that are present on the plants when the sun hits them, causing circular burn patterns. The strategies below can help your plants get through the challenging summer heat while being aware of local watering restrictions:

1. Water plants at the drip line:
 - a. This is the spot on the ground that lines up with the furthest reaches of the branches. If plants are watered only at the base, thirsty feeder roots furthest from the plant base will not be getting the necessary water. This [UC IPM reference photo](#) shows where the drip line is for irrigation placement.
 - b. If you are using drip irrigation methods, place the emitters at the drip line, and space emitters about 12 inches apart.
2. Check irrigation timing:
 - a. If you are using drip irrigation, it is recommended to run the system a few times a week for at least an hour, if not longer. Drip irrigation is a slow process and needs a long time to get the whole root zone wet.
 - b. If you are using sprinklers, sometimes they only reach one side of a plant. Providing irrigation to both sides of the plant will ensure the whole root zone gets water.
3. Add mulch to your landscape:
 - a. Adding mulch and/or wood chips to the ground will help keep plant roots cooler—and help the irrigated soil retain moisture. The recommended depth of mulch or wood chips is about 3 inches.

Here's a link for additional information about irrigation and landscaping: <http://ipm.ucanr.edu/PMG/menu.homegarden.html>

RATS

We have a problem with rats. Our pest control provider placed two black boxes (bait stations) in our yard and gave us some rat traps. We have caught three rats, but now they just lick the peanut butter off the trap, and they don't set the trap off.



Rats are known to get clever about traps, and they avoid them or just steal the bait. There is some proven advice that can help.

1. If possible, buy new rat snap traps from the hardware store. The trap does not need to have special features. We just want to use something that doesn't smell like the ones they have been seeing.
2. Move the traps to a new place. Even moving them a foot away will help.
3. Switch to another bait from the peanut butter. Cat or dog food works really well.
4. The traps need to be baited with the new bait, but DO NOT set them. We need the rats to get used to the new traps and not suspect anything. After a few days, when you know they have been eating the bait, then you bait AND set the trap.
5. Another thing that works well is to set two traps right next to each other, both baited and set. The rat will try and jump over the first one it sees and jump right onto the one it didn't see.

Here's a link for an information sheet with good pointers: <https://ourwaterourworld.org/rats-and-mice>.

Our street has many rats, possibly due to unkempt fruit trees, compost piles, and untrimmed shrubs in the area. What can be done?

You are right to be concerned about these potential hiding places for rats, as well as the free food they are getting from fallen fruit. While you can try to make your home and yard as unwelcoming as possible to rats, that may not be enough to address the issue. If you need to resort to more control, we highly recommend traps over bait. Bait can easily be eaten by pets and other animals that we don't mean to harm. Rats that have ingested bait can hide and die in a spot that is difficult to access, making for some unpleasant smells. Although dealing with traps can be more distasteful for us, they are ideal for a fast death and a body that can be removed before it becomes another nuisance.

For help choosing a trap and how best to use it, see this link: <https://ourwaterourworld.org/rats-and-mice>. There are many different trap options, including new Wi-Fi traps that alert you when one has worked.

RED SPIDER MITES

Red Spider Mites have been a huge problem for my tomatoes for the last couple of years. The difficulty is there does not seem to be any kind of insect or organic spray that will touch them. I have used horticultural oils and garlic, and I've tried numerous other ideas, all to no avail.



Before we get into any insecticides, I'll review some things that keep your tomatoes strong and less likely to get infested. As the mites like to overwinter near your tomatoes, be sure to rotate where you plant. For many reasons, it is critical to rotate tomatoes, and mites are one of those reasons.

Mites thrive in dry, dusty conditions. Use mulch, especially when the plants are tiny. When the plants are large, they shade the ground and keep dust to a minimum. We have been advised over the last several years to plant closer and closer together, but to beat out mites, the plants need a lot of air circulation. Tight clusters of tomato plants are breeding grounds for mites. Yep, we need air and to avoid dryness and dust. Not fair.

Continue using organic fertilizer. Synthetics push too much growth too fast, and mites LOVE tender, young growth. However, if you have done all these things and your plants are still being bullied, let's talk pesticides. Neem oil, horticultural oil, or insecticidal soap should work, but mites breed every week. Therefore, you need to apply every week. These mites are obnoxiously small, and complete coverage is required, including undersides and nooks and crannies. Mites are excellent at hide and seek.

SPIDERS

What are your recommendations on best practices to control pests, including lots of spiders?



There are two ways to answer this: one is for inside the home, and one is for outside. Let's start with outside. Generally, there are spiders this time of year because there is so much for them to eat, as the insects are out in force. The number of insects will start to come down as the seasons change, and then the number of spiders will also go down. At that point, sweep or hose away those old dusty webs, and things should look good again. Spiders inside the home are unpleasant. Below is a link explaining how best to exclude spiders from inside the home: <http://ipm.ucanr.edu/QT/spiderscard.html>.

TICKS

What is the best product to kill ticks in the yard?

After a careful review of available literature, no pesticide is okay to spray on the whole yard without harm to you, pets, children, water, or beneficial insects. What can be done? Excluding ticks is the best answer. In California, about half of the reported cases are contracted around the home in semi-rural environments. Clearing leaf litter or creating woodchip barriers between lawns and adjacent woodlands may prove useful in California's semi-rural residential settings or in private or public gardens adjoining natural areas inhabited by wildlife. See this link for appropriate management practices: <http://ipm.ucanr.edu/PMG/PESTNOTES/pn7485.html>.



If you choose to find a pest control operator, please use this link from the City of Lincoln for guidance: <https://lincolnstormwater.org/residents/gardening-pesticides>

VOLES

Please rank the different methods of controlling voles, with the least harmful numerically first and most harmful numerically last.



Voles are vegetarians and love to eat just about anything. Their shallow tunnels can ruin the look and health of lawns and gardens, leading to desperate plans for revenge. To control voles, there are several methods, but the best is the one that works without harming you, your pets or the local waterways. For each of the options, see this link for more detailed information on identification and effective control: <https://ourwaterourworld.org/moles-voles-and-gophers>

1. **Exclusion** is the absolute best option. Use barriers like hardware cloth in planter beds and in-ground wire baskets for new plants in the ground. These metal barriers last longer than other materials and are hard to chew through. Short barriers around tree trunks prevent chewing damage.
2. **Habitat modification** combined with exclusion is going to be your best bet. Weeds, heavy leaf litter, and dense vegetative cover are protection for voles from predators. Mow and keep down these vole hiding spots.
3. **Traps** work, and they are non-toxic because no bait is needed. However, more than one trap is required, so it can be costly, and they aren't easy to place.
4. **Gas bombs, fumigants and flooding** tunnels with water don't work on voles (gophers, moles, or ground squirrels). Their tunnel systems are extensive, and voles just move to another tunnel to ruin another area.
5. **Baits** are not a good choice. Voles won't eat them because the baits don't look like their food. The poisons in baits are easily consumed by other animals we don't mean to harm, like our pets.

WHITE FLIES

White flies have invaded my vegetable garden. What products do you recommend to eliminate them?



White flies are common with warm weather, high moisture in the air, and lots of fresh new growth. Two strategies used together provide control without hurting your plants, beneficial insects, or the water supply, and they keep your veggies safe for you to eat. First is housekeeping and general care:

1. Pluck off the worst leaves. If the plant is seriously damaged, you might need to remove it.
2. Let the soil dry out an inch down below the top before you water again. White flies thrive on moisture.
3. Stick to organic fertilizers. The slower-release formula of organic fertilizers gives fabulous plants without excessive, over-the-top growth that encourages insects and disease.
4. Spray the plants off with a hose to remove the majority of the white flies.

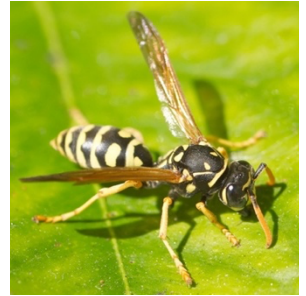
Second is pesticide: Choose horticultural oil, Neem oil, or insecticidal soap. These are effective on soft-bodied insects and act short-term, without a waiting period to eat your veggies. Here is a link for further information:

<http://ipm.ucanr.edu/QT/whitefliescard.html>.

YELLOWJACKETS & OTHER SOCIAL WASPS

What can I do about ground hornets in my yard?

Although ground hornets (Western yellowjackets) and other wasps can be aggressive, they play an important role in the local environment and in your garden. They pollinate various plants around the yard and are predators of all kinds of pests. Yellowjackets and wasps are a huge food source for birds and reptiles. There are a few different approaches to try to reduce yellowjackets.



1. **Trash and pet food management:** Once wasps find a source of food, they will continue to look in the same place for a long time. It is important to remove any outdoor food source and cover and or tightly seal pet food and trash cans.
2. **Traps:** Lure and water traps are highly effective at reducing the numbers of wasps, but they cannot remove entire hives. Lure traps are available at gardening stores, and water traps are easy to make at home. Make sure to place the traps at least 150 feet away from high traffic areas, such as patios and picnic tables. Often the traps are filled within hours, and it is so satisfying to see!
3. **Consult the professionals:** We recommend reaching out to the Placer County Mosquito and Vector Control at (888) 768-2343 for any assistance they may offer for control of yellowjackets and wasps.

This link provides additional resources for identifying and eliminating yellowjackets and other wasps:

<https://ipm.ucanr.edu/PMG/PESTNOTES/pn7450.html>



HAVE PESTS?

Ask An Expert On Our Website

www.lincolnstormwater.org/residents/gardening-pesticides

