



# In the Garden Now

AUGUST 2024

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## Neem Oil Usage in the Garden

Written by Agriculture Program Assistant, Lacey Brown



From Extension Master Gardener Volunteers of Durham County

## Neem Oil: An Overview

### What Is Neem Oil?

- Neem oil is extracted from the seeds of the neem tree (*Azadirachta indica*), native to the Indian subcontinent and valued worldwide for its phytochemical properties.
- The major bioactive compound in neem oil is azadirachtin, which plays a crucial role in its effectiveness against pests.
- The neem oil itself is yellow to brown, with a bitter taste and a garlic/sulfur smell which repels certain insects.
- Neem oil is also found in various products, including toothpaste, cosmetics, soaps, and pet shampoos.

### How to Use Neem Oil:

Always first and foremost, **follow the label of the product you are using!**

#### Pest Control Foliar Spray:

- Mix neem oil with water (about 2-5% concentration). (Some products also come in a pre-diluted bottle).
- Spray the solution on your plants, covering both sides of leaves and stems.
- Use it weekly or biweekly to repel pests like aphids, whiteflies, and spider mites.

#### Soil Drench:

- Dilute neem oil in water (1-2 teaspoons per gallon).
- Water your plants with this solution to protect roots and improve soil health.

## Fungal Disease Prevention:

- Neem oil helps prevent fungal diseases like powdery mildew and blight.
- Apply it as a preventive measure during humid weather.

## Houseplants:

- Use neem oil as a natural pesticide for indoor plants.
- Dilute it and spray on houseplant leaves.

## Pros of Using Neem Oil

### Natural Pest Control:

- Neem oil acts as an organic pesticide.
- Some common insects that neem oil can help control includes: aphids, mites, scale, leafhoppers, white fly, caterpillars, mites, mealybugs, thrips and many more!
- It disrupts pests' feeding, growth, and reproduction.

### Anti-Fungal Properties:

- Neem oil suppresses fungal diseases such as powdery mildew, rust, and black spot on plants.
- It inhibits spore germination and mycelial growth.
- Approved for Organic Gardening:
- Neem oil is an approved treatment for organic gardening, making it a sustainable choice for pest and disease management.

### Multiple Uses:

- Besides pest control, neem oil can enhance soil fertility, control erosion, and suppress pests when applied directly to the soil.

### Various Forms:

- Neem oil comes in various formulas and concentrations, so you can find the one best suited for your needs. Some of the various forms include: wettable powders, granules, dust and emulsifiable concentrates.

### Impacts on Mammals, Wildlife, Plants & Pets:

- Neem oil is practically non-toxic to birds, mammals, bees and plants.
- Neem oil is also safe for pets to come in contact with.

## Cons of Using Neem Oil

### Absorption Time:

- Neem oil takes time to be absorbed by plants from the soil, delaying its pest control effects. It may not directly control pests affecting foliage.

### Temperature Sensitivity:

- Avoid applying neem oil during extreme temperatures (very hot or cold), as it may stress plants.
- Sensitive plants (young or dehydrated) should not be treated with neem oil.

### Plant Restrictions:

- Neem oil is not suitable for certain crops, including peppers, beans, peas, and leafy greens like arugula, lettuce, and spinach. It's also best avoided on herbs such as basil, dill, cilantro, oregano, parsley, and thyme.

### Impacts on Bees:

- Neem oil can potentially increase bee mortality rates. Some studies show reduced reproduction rates and increased queen bee mortality when exposed to neem oil. This directly impacts the amount of honey production as well.
- Bees are crucial pollinators, and neem oil could disrupt their behavior, affecting pollination.

### Impacts on Aquatic Organisms & Fish:

- Neem oil is slightly toxic to fish and other aquatic organisms.
- Aquatic organisms and fish help create diverse ecosystems, support climate regulation and provide food for both animals and humans.

In summary, neem oil offers effective pest control, disease suppression, and environmental benefits. However, careful application and consideration of plant types are essential for optimal results in your garden.

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## Consider Drought Tolerant Vegetables for the Fall Garden

Written by Extension Master Gardener, Rich Mullins



Well, we've had a tough gardening season this year. What with an abundance of heat and humidity and a scarcity of rain, many have just given up in frustration. But, as the true optimists that dedicated gardeners are, we know that the fall garden is just around the corner and we know that it will be better.

As you start preparing to put in your fall garden, you might want to consider trying some drought-tolerant varieties of your favorite veggies. Yes, there are in fact drought-tolerant varieties of many of your favorites.



Drought-tolerant varieties can, through a variety of biochemical or morphological adaptations, survive with minimal water for a few weeks to a month. One of the things that they do is develop deep root systems to counter both heat and low water levels.

Plant labels and seed packets may not specifically state that they are “drought-tolerant” so look for things that indicate the plant loves hot temperatures and has low to moderate water needs. Also consider vegetables specifically bred for drought resistance, as well as those that thrive in hot, arid climates. In addition, look for varieties that are: fast-maturing; determinate; miniature varieties; and varieties of Mediterranean origin.

The following list, while not all inclusive, shows many popular fall garden veggies and some of their drought tolerant varieties (S=seed, T=transplant):

- Arugula (S): most common types
- Bush beans (S): Southern Pea (Cowpeas) varieties like Whippoorwill and Pink Eye
- Purple Hull
- Pole beans (S): Rattlesnake and Burpees Stringless
- Beets (S): Avalanche and Perfected Detroit Dark Red
- Broccoli (T): Waltham 29
- Cabbage (T): Brunswick Sauerkraut
- Swiss Chard (S/T): Bright Lights and Fordhook Giant
- Cucumbers (S/T): Armenian and Lemon
- Okra (S): Clemson Spineless and Alabama Red
- Mustard (S): Tendergreen
- Peppers (T): Juniper Sweet Bell
- Spinach (S): Malabar and Bokoboko (yes, that’s really it’s name)
- Tomatoes (T): Beefmaster; celebrity; Early Girl, Brandywine; Arkansas Traveler; and Sweet 100 Cherry

Some of these, like the peppers and tomatoes, you will probably have a hard time finding plants to transplant into your garden but, keep them in mind for another year when you may have time to start them from seed.

If you’re favorite veggie isn’t on the list that doesn’t mean it may not have a

drought-resistant variety or two. You can simply search on line for a drought tolerant variety of that veggie.

And remember that nothing helps conserve water like a good layer of mulch. Apply 2 to 3 inches of organic mulch around drought tolerant vegetables.

Now for the big question, where in the world do I get these things? The following list of seed companies, again not all inclusive, have many of these varieties:

- Baker Creek Seeds
- Burpee Seeds
- Heirloom Organics
- Johnny's Seeds
- Native Seeds
- Pinetree Garden Seeds
- Rare Seeds
- Rural Sprout
- Select Seeds
- Sow True Seeds
- Territorial Seeds

And you may find this Eastern North Carolina planting guide useful:

<https://content.ces.ncsu.edu/eastern-north-carolina-planting-calendar-for-annual-vegetables-fruits-and-herbs>

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## **Bagworms**

Written by Extension Master Gardener, Rich Mullins



We've had an usual number of cases of bagworms show up in the Plant Clinic this summer. While usually found on conifers such as arborvitae, spruce, juniper, cedar, and Leyland cypress, bagworms have a wide host range and the list of host plants is continually expanding. Point in fact, a recent client found them in a Japanese Maple tree.

Bagworms are evidenced by small brownish looking bags hanging on branches and trees. Leaves and needles are chewed and branches on the whole plant may be defoliated. These Carrot-shaped bags, or cases, are 1-3 inches long and hang from the branches. Female bagworms never leave their bag, and after mating in the fall will lay eggs inside the bag and die. The eggs overwinter in the bags, and hatch in May and June. The larvae then begin feeding on the plant, creating its own bag out of plant foliage. As the caterpillar grows, the bag grows also. If a bag is cut open during this larval stage, a tan or blackish caterpillar will be found inside. The larvae will continue feeding on the plant until pupating in August, and adult moths will emerge in August and September.



A heavy attack by bagworms can stunt or kill the plant, and oftentimes an infestation goes unnoticed until late summer when the plant is severely defoliated. There really isn't much you can do right now, but, begin monitoring for bags in late fall and early spring before eggs hatch. Handpicking and destroying bags is an effective control measure if the bags are not too numerous and not too high up in the tree. If infestations are severe, chemical controls available for homeowner use include the active ingredients azadirachtin (Azatin), *Bacillus thuringiensis* (Bt), spinosad, bifenthrin, permethrin, and cyfluthrin. Read and follow the directions on the label, and understand that repeat applications may be necessary for effective control. Also, Bt is only effective against small bagworms, bags ½ inch or less.

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## **Upcoming Events**



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# GREAT SOUTHEAST Pollinator Census

AUGUST 23-24, 2024

## How to Count

in the

GREAT SOUTHEAST

## Pollinator Census

1

### Catch the latest buzz

Before the count begins,  
check out GSePC.org.

2

### Pick your plant

Choose a favorite  
pollinator plant  
to monitor.

3

### Get to counting

Keep count of each insect that  
lands on your plant for 15 minutes.

4

### Share the results

Fly on over to GSePC.org and  
upload your count to the website.



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## Count at Home or Join Us in the Discovery Gardens!

Join the Extension Master Gardener  
volunteers in the Discovery Gardens to  
participate in this citizen science program  
and learn about pollinators! All materials  
will be provided. We will also have a free  
Milkweed for Monarchs activity for  
children!

**Date:** Saturday, August 24th, 2024

**Time:** 8am - 12pm

**Address:** 4024 Richlands Hwy, Jacksonville NC

Scan the QR code  
for more  
information!

Or visit  
[go.ncsu.edu/gsepc](https://go.ncsu.edu/gsepc)



## Questions?

- Email [emilee\\_morrison@ncsu.edu](mailto:emilee_morrison@ncsu.edu)
- Call 910-455-5873



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August:

- **23-24th** - Great Southeast Pollinator Census. Count at home or join us in the Discovery Gardens for pollinator activities on Saturday from 8-12, address is 4024 Richlands Hwy, Jacksonville. Learn more at <https://gsepc.org/>
  - **Plant Clinic**- The Plant Clinic is staffed by trained volunteers to help you with your lawn and garden questions. The physical location is open Monday and Wednesday from 9-3 at 4030 Richlands Highway, Jacksonville, NC. Call or email us at (910) 455-5873, [onslowplantclinic@gmail.com](mailto:onslowplantclinic@gmail.com)
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