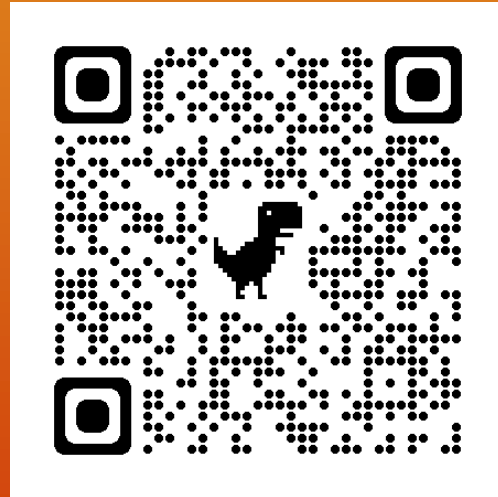


Cool Season Vegetables – Extending the Harvest



UGA Extension

Walton County Master Gardener Volunteers

Benefits of Gardening

- **Better taste, quality and freshness**
- **Source of hard-to-find varieties**
- **Economics - decrease food budget**
- **Food Safety - control inputs of pesticides and fertilizers**
- **Personal satisfaction**



Site Selection

- **Choose a site that receives at least 8 hours of full sun**
- **Choose a relatively level spot or build terraces across sloping land**
- **Choose a site with well drained, amendable soil**
- **Avoid planting near trees: in addition to creating shade, trees compete for water and nutrients**
- **Avoid low areas that may harbor frost that will nip spring seedlings and late season crops**
- **Site the garden close to a water source and close to the house and kitchen if possible**

Types of Gardens

- Long rows
- Raised beds
- Containers



Soil Preparation for Fall Planting

- **Lightly work the soil enough to establish a seed or planting bed**
- **Reserve deep tillage for later in the fall**
- **You don't need to add a lot of organic matter for the fall planting**
- **Organic matter can be added later in the fall with the deeper tillage**



Get in Sync with the Seasons

- **Average last frost date in spring is April 1**
- **Average first frost date in fall is October 1**
- **Cool Season plants - grow spring and fall:**
 - **Grow best with temps between 40 and 75 degrees**
 - **Are most often those that develop edible roots, stems, leaves, or buds**
- **Warm Season plants - grow in summer:**
 - **Originated in the tropics**
 - **Can't tolerate frosts**
 - **Usually develop edible fruits**



Warm Season Vegetables

- **Beans**
 - snap beans
 - pole beans
 - lima beans
- **Sweet corn**
- **Cucumber**
- **Eggplant**
- **Melons**
- **Okra**
- **Southern peas**
- **Peppers**
- **Pumpkins**
- **Sweet potato**
- **Summer squash**
- **Tomatoes**
- **Winter squash**



Cool Season Vegetables

- **Beets**
- **Broccoli**
- **Brussels sprouts (fall)**
- **Cabbage**
- **Carrot**
- **Cauliflower**
- **Cress**
- **Collards (fall)**
- **Garlic (fall)**
- **Kale**
- **Leeks**
- **Lettuce**
- **Mustard Greens**
- **Onions**
- **Peas (spring)**
- **Radish**
- **Irish Potato (spring)**

- **Spinach**
- **Turnip**



Spring vs. Fall Plantings

Spring conditions:

- Cold, wet soil
- Cool air temps getting warmer
- Day length increasing
- Insect populations increasing
- Weeds growing rapidly, setting seed

Fall conditions:

- Warm, dry soil
- Warm air temps getting cooler
- Day length decreasing
- Insect populations decreasing
- Weeds growing slowly, not seeding

When to Plant



Vegetable Planting Chart

From *Vegetable Gardening in Georgia* (Circular 963)
by Robert Westerfield, Extension Horticulturist, and David Linvill, Chatham County Extension Agent

Vegetable	Days to Maturity*	Cultivars**	Planting Dates		Seeds / Plants per 100 ft.	Spacing Rows per Plants	Depth to Plant**
			Spring	Fall			
asparagus	2nd year	Jersey Giant, Jersey Knight, Mary Washington, Purple Passion	Jan 15 - Mar 15	Nov. & Dec.	50 roots	36" x 18-24"	6"
beans, bush	50-60	Bronco, Blue Lake 274, Half-Runners (State, White, Volunteer), Kentucky Runner, Roma	Mar. 15 - May 1	Jul. 5 - Aug. 10	0.5 lb	36" x 2-4"	1"-1.5"
beans, pole	65-75	Blue Lake, Dade, Kentucky Blue, Moccasin	Mar. 15 - May 10	Jul. 1 - Aug. 1	0.5 lb	36" x 4-12"	1"-1.5"
beans, lima	65-75	Henderson's Bush Fordhook 242, Jackson Wonder (Speckled)	Mar. 15 - Jun. 1	Jul. 1 - Aug. 1	0.5 lb	36" x 3-4"	1"-1.5"
beans, pole lima	80-85	Sieva, Florida Speckled	Mar. 15 - Jun. 1	Jul. 1 - Aug. 1	0.5 lb	36" x 6-8"	1"-1.5"
beets	55-65	Detroit Dark Red, Red Ace, Ruby Queen	Feb. 15 - Apr. 1	Aug. 1 - Sep. 20	1 oz	18-36" x 2"	0.5"
broccoli	60-80	Marathon, Packman, Patriot, Premium Crop, Bravo, Decathlon	Feb. 15 - Mar. 15	Aug. 1 - Sep. 1	100 plants	36" x 12"	—
butterpea	70	Dixie	Apr. 1 - May 1	Jul. 1 - Aug. 1	0.5 lb	36" x 3-4"	1"-1.5"
cabbage	70-120	A&C No. 5+, Blue Dynasty, Bravo, Early Round Dutch, Rio Verde, Green Jewel	Jan. 15 - Mar. 15	Aug. 1 - Oct. 1	100 plants	36" x 12"	—
cantaloupe	80-90	Ambrosia, Athena, Satcoy Early, Sweet	Mar. 20 - Jun. 20	—	1 oz	60" x 36"	1"
carrot	70-95	Chantenay, Scarlet Nantes, Sweetbites, Sweet Delight, Thumbelina (small)	Jan. 15 - Mar. 20	Aug. 20 - Sep. 15	0.5 oz	18-36" x 2-3"	0.25"
cauliflower	60-75	Absolute, Early Snowball, Graffiti (purple color), White Magic, Symphony	Mar. 1 - Apr. 1	Jul. 15 - Aug. 15	100 plants	36" x 12"	—
collards	55-85	Blue Max, Georgia Southern, Hevi-Crop	Feb. 1 - Mar. 15	Aug. 1 - Sep. 1	0.5 oz	36" x 8-16"	0.5"
corn, yellow	65-90	Bodacious, Golden Queen, Honey Select, Miral 131, Seneca	Mar. 15 - Jun. 1	—	0.25 lb	36" x 12-18"	1"-1.5"
corn, white	65-90	Avaton, How Sweet It Is, Seneca Sensation, Silver King, Silver Princess, Silver Queen	Mar. 15 - Jun. 1	—	0.25 lb	36" x 12-18"	1"-1.5"
corn, bi-color	65-90	Ambrosia, Butter & Sugar, Honey 'n Pearl, Miral 301, Peaches & Cream, Serendipity, Sweet Breed Chorus	Mar. 15 - Jun. 1	—	0.25 lb	36" x 12-18"	1"-1.5"
cucumber, slicing	50-65	Bush - Salado Bush Hybrid, Bush Crop, Fanfare Vine - Burpless Hybrid, Diva, Marketmore, Straight Eight, Sweet Slice, Sweet Success	Apr. 1 - May 15	Jul. 15 - Aug. 15	1 oz	60" x 12"	0.5"-0.75"
cucumber, pickling	50-65	Bush Pickle, Calypso, County Fair	Apr. 1 - May 15	Jul. 15 - Aug. 15	1 oz	60" x 12"	0.5"-0.75"
cucumber, gynoecious	50-65	Calypso, General Lee	Apr. 1 - May 15	Jul. 15 - Aug. 15	1 oz	60" x 12"	0.5"-0.75"
eggplant	75-90	Black Beauty, Classic, Dusky, Ghost Buster's (white), Callope	Apr. 1 - May 15	Jul. 10 - Jul. 30	50 plants	36" x 24"	—
kale	50-70	Vates, Dwarf Siberian, Blue Armor, Blue Knight	Feb. 1 - Mar. 10	Aug. 1 - Sep. 1	0.5 oz	36" x 8-16"	0.5"
lettuce	60-85	Butterhead, Romaine, Buttercrunch	Jan. 15 - Mar. 1	Sep. 1 - Oct. 1	0.25 oz	18-36" x 8-12"	1/8"
mustard	40-50	Florida Broadleaf, Southern Giant Curled, Red Giant, Savannah	Jan. 15 - Apr. 1	Aug. 15 - Sep. 15	0.5 oz	18-36" x 2"	0.5"
okra	55-65	Annie Oakley II, Burgundy, Cajun Delight, Clemson Spineless	Apr. 1 - Jun. 1	Jun. 15 - Jul. 10	1 oz	36" x 12"	1"

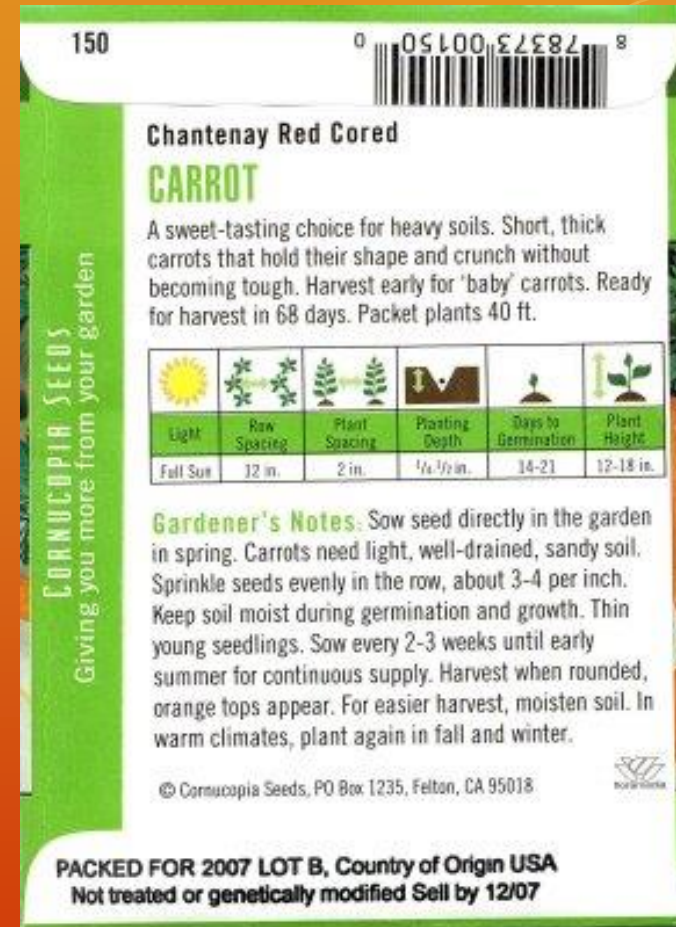
*Days to maturity are from planting seed or setting transplants in the garden. The number of days will vary depending on cultivar (some mature earlier than others), temperature and general growing conditions. Check catalogues for individual maturity time.
**Cultivars listed in the chart represent a few of those recommended. There are many other good cultivars worthy of trial.
**Plant shallowly in heavy (clay) soil when adequate moisture is present.

- Soil temperature
- Days to maturity
- Planting dates: variable - ranges

When to Plant

Days to maturity:

- **Seeds direct sown:** counted from the day they **GERMINATE** until first harvest
- **Plants:** counted from the day they are **TRANSPLANTED** until first harvest
 - “first harvest” is not “finished”
 - the range given is for optimal conditions, allow more time in fall (shorter days, cooler temps)





Transplants or Seeds?

- **Seedlings must be thinned; best done at the 3-leaf stage. Use a scissors to avoid disturbing nearby roots.**
- **Transplants can be planted at the correct spacing.**
- **Root crops should be grown from seed.**



Proper Spacing

- **Do not overcrowd plants, they get big very quickly**
- **Check the seed package or vegetable guide – and believe it!**
- **Over-crowding leads to:**
 - **Spindly plants, smaller vegetables, and lower overall yields**
 - **More difficulty in harvesting**
 - **More disease problems**
 - **More difficult insect control**



Planting Seeds

- **Consider shading soil for a few days before planting seeds**
- **Planting depth:**
 - **Generally 3x diameter of seed**
 - **For small seeds, scatter and cover lightly**
- **Keep moist: can be challenging in August/September**



Planting Transplants

- **Buy healthy plants**
- **Harden off your seedlings**
- **Time it right**
- **Space properly**



Planting Transplants

- **Plant at the right depth**
- **Water in with “starter” fertilizer (1/4 strength)**



Planting Transplants

- **Make sure roots can penetrate peat pots**
- **Remove top edges; will wick away moisture if exposed**
- **Bury peat pot completely**



Protect Transplants

- **Shade transplants for a week or so**
- **Water daily until established**
- **Mulch to conserve soil moisture and prevent crusting**



Watering is Critical



High-tech methods

Low-tech methods



Proper Watering Practices

- **Vegetables require 1 inch of water a week**
- **Keep seedlings and transplants constantly moist when they are getting established**
- **Water the soil and not the plant**
- **Water deeply and less frequently when plants are larger**
- **A light sprinkling only dampens the surface and trains the plant's roots to go upwards to get water – shallow roots mean weak plants**
- **An organic mulch helps regulate soil moisture and temperature, and can help control weeds**

Supplemental Fertilization

Vegetables are divided into three categories:

- **Heavy feeders – cabbage, onions, Irish potatoes**
- **Medium feeders – beans, beets, broccoli, carrots, cauliflower, most greens, radish, Swiss chard, spinach**
- **Light feeders – leaf lettuce, peas**

FOLLOW LABEL DIRECTIONS FOR ALL PRODUCTS

Weed Control

Cultural

- **Shading** – fast growing crops shade ground area and prevent weed seeds from germinating
- **Mulches** – also help retain soil moisture

Mechanical

- **Clear weeds before planting in fall**
- **Remove by hand or cultivation**

Chemical

- **Herbicides** – even organic kinds, have limited effectiveness in a vegetable garden. **Use with caution!**

Fall Plant Family

BRASSICAS – broccoli, cabbage, cauliflower, mustard, collards, kale, Brussels sprouts, radishes, turnips, rutabagas, cress, bok choy, kohlrabi

- **Notice how many of the fall vegetables are brassicas; therefore insects that are specific to that family are most likely to cause trouble in fall.**

Pests of the Brassica Family

- **Cabbage looper**
- **Imported cabbage worm**



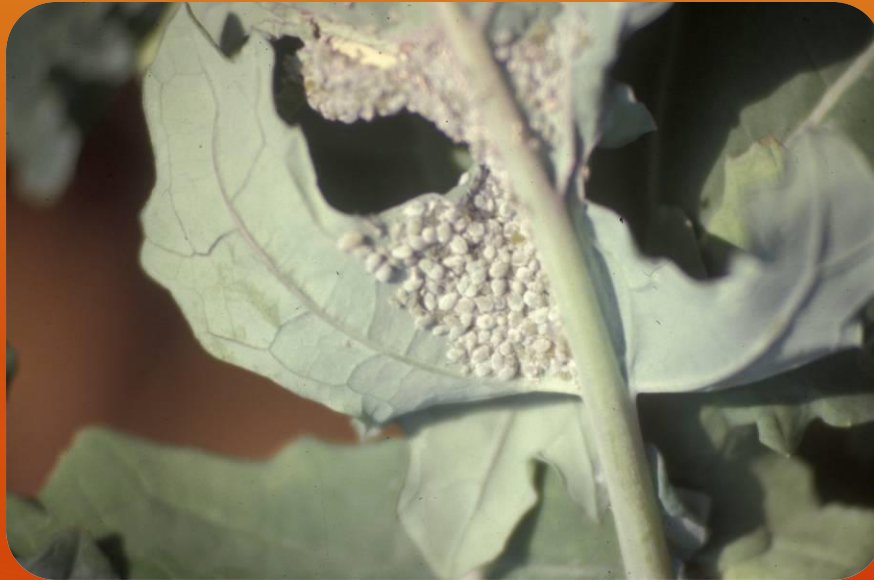
Pest Control - Insects

- **Scout regularly**
- **Hand pick**
- **Encourage beneficials**
- **Bt products for caterpillars**
- **Soaps and oils for mites, aphids, whiteflies**



Cabbage Aphids

- **May attack any cabbage family plants(brassicas)**



Dealing with Frost

Frost Tender

-Protect

- Basil
- Cucumbers
- Corn
- Beans
- Squash
- Tomatoes

Frost Semi-Hardy

-No Protection Needed

-Harvest Before Heavy Freeze

- Beets
- Cauliflower
- Chard
- Lettuce

Frost Hardy

- No Protection Needed

- Broccoli
- Cabbage
- Collards
- Kale
- Kohlrabi
- Mustard
- Onions
- Radishes
- Spinach
- Turnips

Salad Greens

- **Head lettuce**
- **Leaf lettuce**
- **Arugula**
- **Mesclun mix**



Lettuce

- **Most quite cold hardy**
- **Sow every 2 weeks Aug.15 – Oct. 15**
- **Romaine & butterhead most hardy**



Asian greens

- **Pac Choi**
- **Bok Choy**
- **Mizuna**
- **Tatsoi**



Kale

- **Spring or fall**
- **Curly leaf and flat leaf varieties**
- **Sweeter after frost**



Kale

- Harvest florets in spring



Chard

- **More heat tolerant**
- **Less cold hardy**
- **Harvest baby leaves or large leaf and stem**



Collard Greens

- **Traditional fall crop, sweeter after frost**
- **Hardy to about 10°**



Spinach

- **Good cold tolerance**
- **Over-winter with protection**
- **Will not germinate in warm soil**



Photo by Gokhan Okur

Kohlrabi

- **Plant Aug. 1 – Sept. 1**
- **Cultivars:**
 - **'White Vienna'**
 - **'Grand Duke Hybrid'**
- **Days to maturity: 50 – 60**



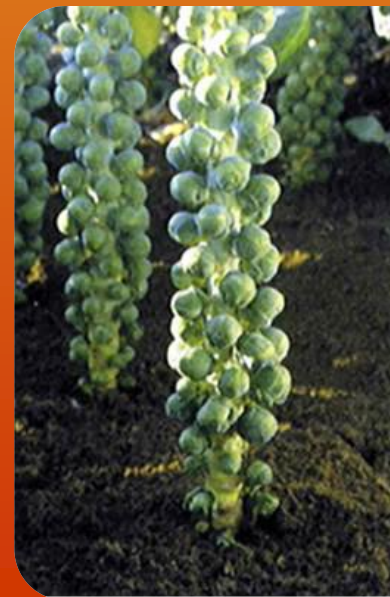
Cabbage

- **Head and Savoy (crinkled) varieties**
- **Increase spacing for larger plants with larger heads**
- **July 15 – Sept 15**



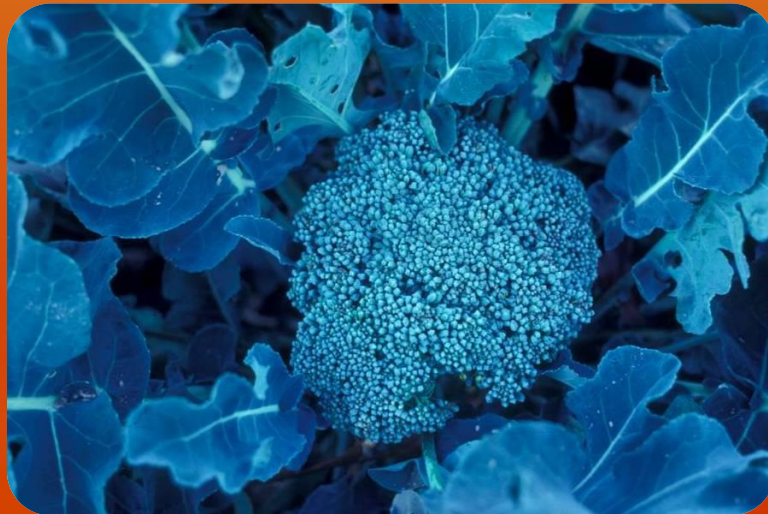
Brussels Sprouts

- Cultivated for its small leafy green buds
- Resemble miniature cabbage
- Ready for harvest 90-100 days after transplanting



Broccoli

- **Spring or fall**
- **Central head**
- **Side shoots**
- **Plant Aug. 1 – Sept. 1**



Cauliflower

- **“The educated cabbage”**
- **Self blanching**
- **Aug. 1 – Sept 15**



Beets

- **Use for greens or roots**
- **Very cold hardy**
- **July 15 – Sept. 1**



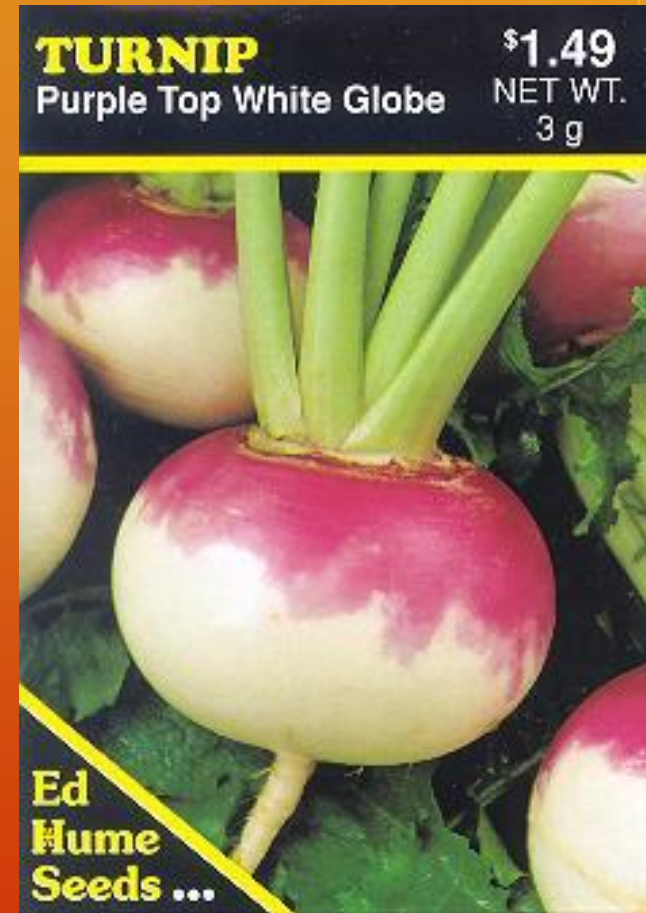
Radishes

- **Quick growing:
mature in 21-30 days
depending on temperatures**
- **Plant every 2 weeks for a
longer harvest**



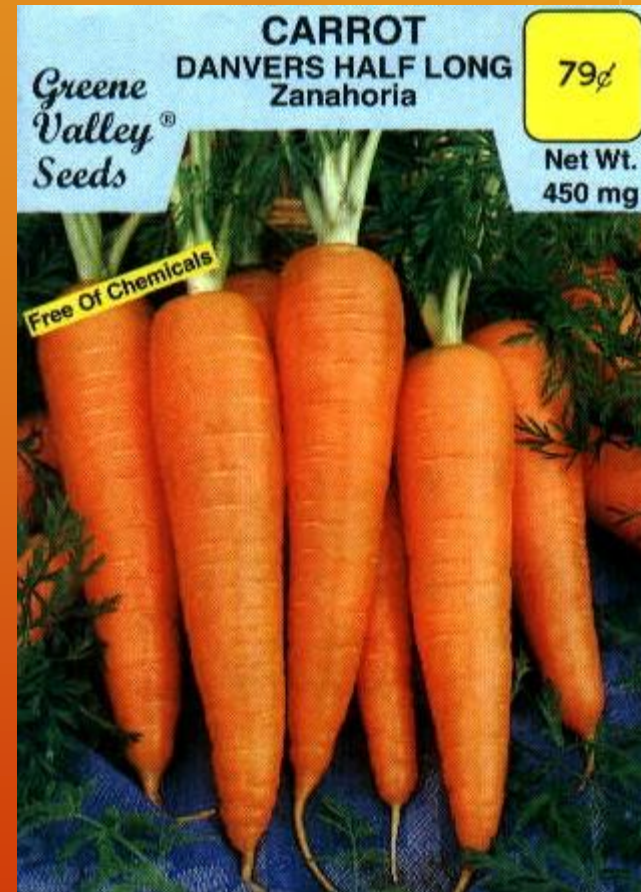
Turnips

- Greens or roots
- August 1 – Sept 1



Carrots

- Choose short varieties
- Cultivate smooth soil
- June 15 – Sept. 1



Onions

- **Bunching**
- **Bulbing**
- **Seed or set?**



Garlic

- **Plant in October - November**
- **Harvest next June**



Enjoy the 3rd season!



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GREAT SOUTHEAST **Pollinator Census**

AUGUST 19, 2023

Friendship Park, Social Circle



Walton County Master Gardeners invite you to
Free Fall 2023 Gardening Talks

Mondays 2:00–3:00 p.m.
O’Kelly Memorial Library
363 Conyers Road, Loganville GA



- Aug 7: Fall Bulbs for Spring Color**
- Aug 14: Cool Weather Vegetables**
- Aug 21: Walton County Gardens**
- Aug 28: Outsmarting Nuisance Wildlife**
- Sept 7: The Nature of Compost**



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Walton County Master Gardeners invite you to
Free Fall 2023 Gardening Talks

Tuesdays 4:00-5:00 p.m.

W.H. Stanton Memorial Library
407 W. Hightower Trail, Social Circle GA

Aug 8: Fall Bulbs for Spring Color

Aug 15: Cool Weather Vegetables

Aug 22: Walton County Gardens

**Aug 29: Outsmarting Nuisance
Wildlife**

Sept 5: The Nature of Compost



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Walton County Master Gardeners invite you to
Free Fall 2023 Gardening Talks

Wednesdays 2:00–3:00 p.m.
New UGA Extension Office
1258 Criswell Rd SE, Monroe GA



- Aug 9: Fall Bulbs for Spring Color**
- Aug 16: Cool Weather Vegetables**
- Aug 23: Walton County Gardens**
- Aug 30: Outsmarting Nuisance Wildlife**
- Sept 6: The Nature of Compost**



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MORE QUESTIONS? NEED HELP?



**Contact us at waltonmg@uga.edu
770-267-1324**

**Walton County Extension
1258 Criwell Rd.
Monroe, GA 30655**

**Office hours: Monday - Friday
8:00 am - Noon & 1:00 - 5:00 pm**

Help Desk – Tuesdays 1:00-4:00