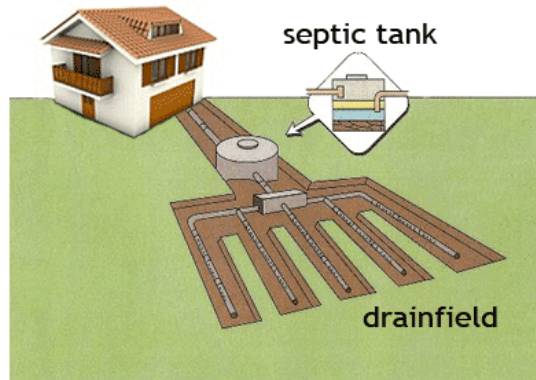
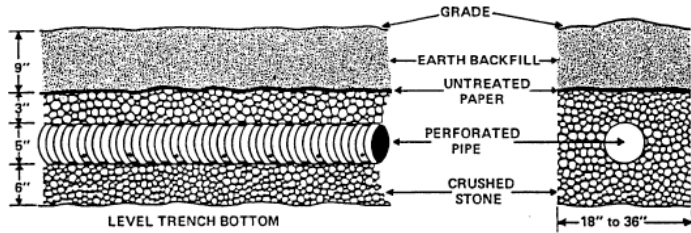


Planting in a Septic Drain Field

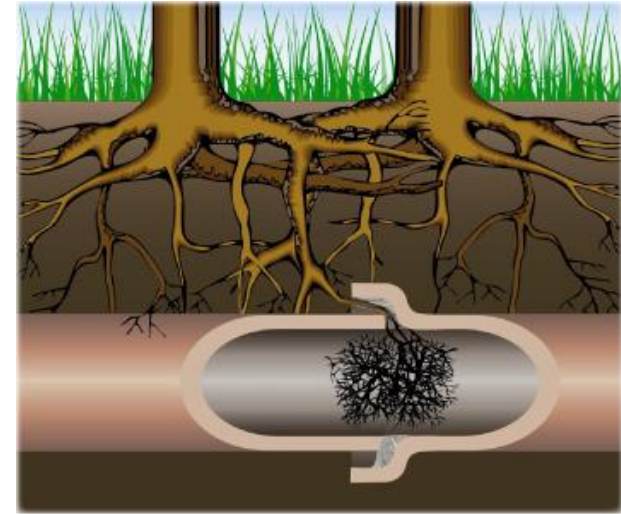
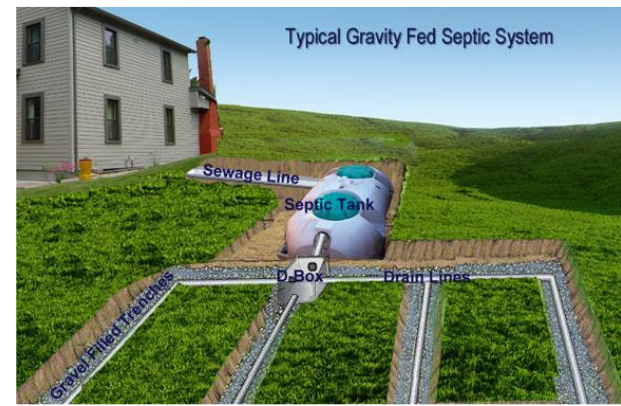


Matt Jones

Horticulture Extension Agent
NC Cooperative Extension
Chatham County Center

Potential Problems

- 1) Roots clog drain lines
- 2) Gardening activities reduce function:
 - Watering plants
 - Adding fertilizers
 - Mulching
 - Digging/tilling too deep



Why Have Plants at All?



Best Options: Turf

- Need full sun at least four hours/day
 - Tall fescue (tolerates some shade)
 - Zoysia (tolerates some shade)
 - Bermuda (full sun)
- Require frequent fertilization
- Don't irrigate septic drain field
- Keep vehicles off!



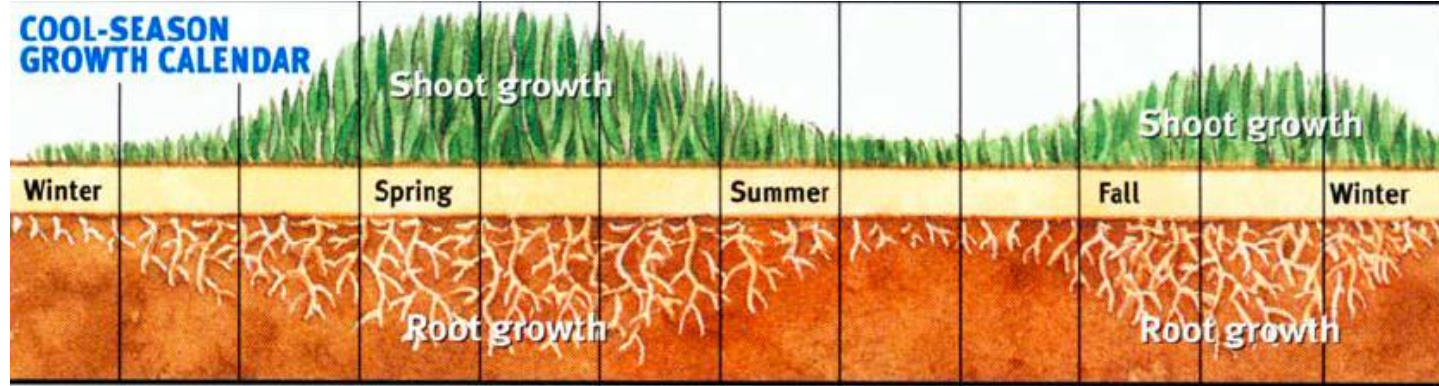
The Right Turf for Your Lawn

- Climate
- Site conditions
- Need for wear tolerance
- Maintenance you can provide
- Budget
- Aesthetic preferences

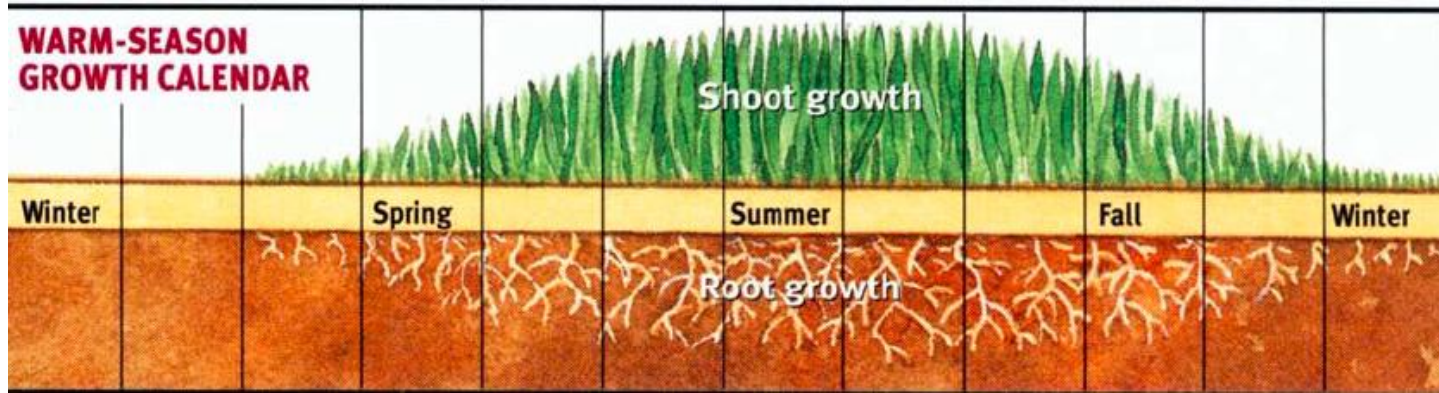


'Empire' Zoysia

Cool Season Turf Growth



Warm Season Turf Growth



You Can't Have Both!

- Warm and cool season lawns don't mix
- If have mix, select preferred species and manage for that species



Tall Fescue in March



Zoysia in March

Aesthetic Preferences

Cool Season: Tall Fescue

- Mow high, 3-4"
- Wide blade
- Green most winters
- Dark green color

Warm Season: Zoysia and Bermuda

- Mow lower, 1-2"
- Narrower blade
- Brown/beige in winter
- Zoysia – medium dark green
- Bermuda – gray-green



Tall Fescue

Advantages

- Easiest turf to establish by seed
- Clumping/bunch grass – does not run into beds and gardens
- Dark green color
- Can be green year-round
- Relatively shade tolerant



Tall Fescue

Disadvantages

- May go dormant during summer drought if not irrigated
- Becomes spotty/patchy over time
- Overseeded every 2-3 years to maintain thickness/coverage
- Not well adapted to sandy or drought prone soils



Warm Season Grasses

Compared to tall fescue:

- More heat tolerant
- More drought tolerant
- More wear tolerant
- “Self-healing”

Many varieties must be sodded



Winter Color

How Warm-Season Grasses Grow

- Spread by stolons and rhizomes
- “Self Healing”
 - Fill in damaged areas
 - More difficult to keep out of beds
- Seed/plug or sod April-July
 - Keep moist during establishment!



Rhizome



Stolons

Bermudagrass

- Fine to medium texture, narrow blade
 - Mow at 1"-2" with rotary mower, lower with reel mower
- Gray-green to blue-green color

Advantages:

- Excellent wear tolerance
- High drought tolerance



Bermudagrass

Disadvantages

- Full sun, not shade tolerant
- Spreads rapidly: stolons and rhizomes
- Mow frequently = twice a week
- High fertilizer requirements
- HIGH MAINTENANCE



Zoysiagrass

- Fine to medium texture, medium- dark green
- Spreads by stolons and rhizomes
- Good wear resistance
- Very drought tolerant
- Tolerant of moderate shade
- Developed for residential lawns



'Empire' Zoysia

Zoysiagrass

Moderate maintenance

- Average mowing 1/week
- Several varieties, most are sodded
- Zenith and Compadre can be seeded



Best Options: Perennials

- Return year after year from the same roots
- Herbaceous root systems
- Choose varieties *adapted to site*



Chatham Mills Pollinator Paradise
NC Cooperative Extension



Debbie Roos
Sustainable Agriculture Agent

False Indigo

Baptisia spp.



Sun to part shade



Spring



Medium to well-drained



1-3' x 1-1.5'



Bees, butterflies, larval host



Baptisia australis

Baptisia alba



Baptisia cultivars

‘Purple Smoke’



‘Carolina Moonlight’



Orange Coneflower

Rudbeckia fulgida



Moist to well drained



2-3' x 2-2.5'



Butterflies, bees, wasps, birds



Summer to fall

Close Relatives

Rudbeckia spp.



Cuteaf Conflower
Rudbeckia laciniata



Black-eyed Susan
Rudbeckia hirta



Joe Pye Weed

Eutrochium spp.



Sun to part shade



Summer



Moist to wet



3-7' x 1-4'



Butterflies, bees, larval host, birds



Bluestar

Amsonia tabernaemontana



Sun to part-shade



Moist to well-drained



Spring



2-3' x 2-3'



Butterflies



Eastern Columbine

Aquilegia canadensis



Part sun to part shade



Spring



Medium to well-drained



1-3' x 1-1.5'



Hummingbirds, birds



Green and Gold

Chrysogonum virginianum



Shade to part-sun



Medium to well-drained



Spring



6-12" x 8-18"



Pollinators, birds



Cardinal Flower

Lobelia cardinalis



Part shade to sun



Moist to wet



Late Summer



2-4' x 1-2'



Hummingbirds, butterflies



Part shade



Moist to wet



Great Blue Lobelia

Lobelia siphilitica



2-3' x 1-1.5'



Bees, hummingbirds, butterflies



Late Summer

Ferns



Dixie Wood Fern
Dryopteris x australis



Cinnamon Fern
Osmunda cinnamomea



Southern Maidenhair Fern
Adiantum capillus-veneris



Christmas Fern
Polystichum acrost

River Oats

Chasmanthium latifolium



Part Sun to
Part Shade



Moist to
well-drained



2-5' x 1-2'



Summer-fall



Songbirds eat seeds, deer resistant



Pink Muhly Grass

Muhlenbergia capillaris



Full Sun



3-4' x 2-3'



Moist to well-drained



Summer-fall



Songbirds eat seeds, deer resistant

Wildflower Meadows

Dominated by native grasses

- Little and Big Bluestem
- Big Bluestem
- Indian Grass
- Broomsedges
- Panic Grass

Native perennials mixed in



Site Preparation: Meadows, Lawns, Groundcovers

- SOIL TEST!!!
 - Lime and phosphorous should be tilled in
- Alleviate compaction
- Incorporate organic matter – compost
- Eliminate weeds BEFORE planting



Hard work but worth it!

Native Seed Mixes for NC



AVAILABILITY CATALOG NATIVE SEED MIXES BARE ROOT

Native Seed Mixes

Our staff has over 40 years of native seed "know how." We offer custom seed mixes and consultation.

- Help with selecting the right seed mix for your site
- Custom mixes
- Application rates, methods, and times to seed
- Cover crops

Contact us for a quote on a custom mix or a large quantity.

Mellow Marsh Farm Standard Mixes:

MMF Shade Mix

Recommended application rate: 20 to 25 lbs. per acre

Species	Common Name	Percent
<i>Andropogon gerardii</i>	Big bluestem	18
<i>Bidens aristosa</i>	Bidens	3
<i>Carex vulpinoidea</i>	Fox sedge	11
<i>Chamaecrista fasciculata</i>	Partridge pea	14
<i>Desmodium canadense</i>	Showy tick trefoil	5
<i>Elymus virginicus</i>	Virginia wildrye	35



Mellow Marsh Farm, Inc.
Wholesale Native Plants

<https://mellowmarshfarm.com/>

Silk Hope, NC

Worst Option: Trees

- Woody root systems
- Roots grow where there is air, water and nutrients
- Invade drain lines and clog

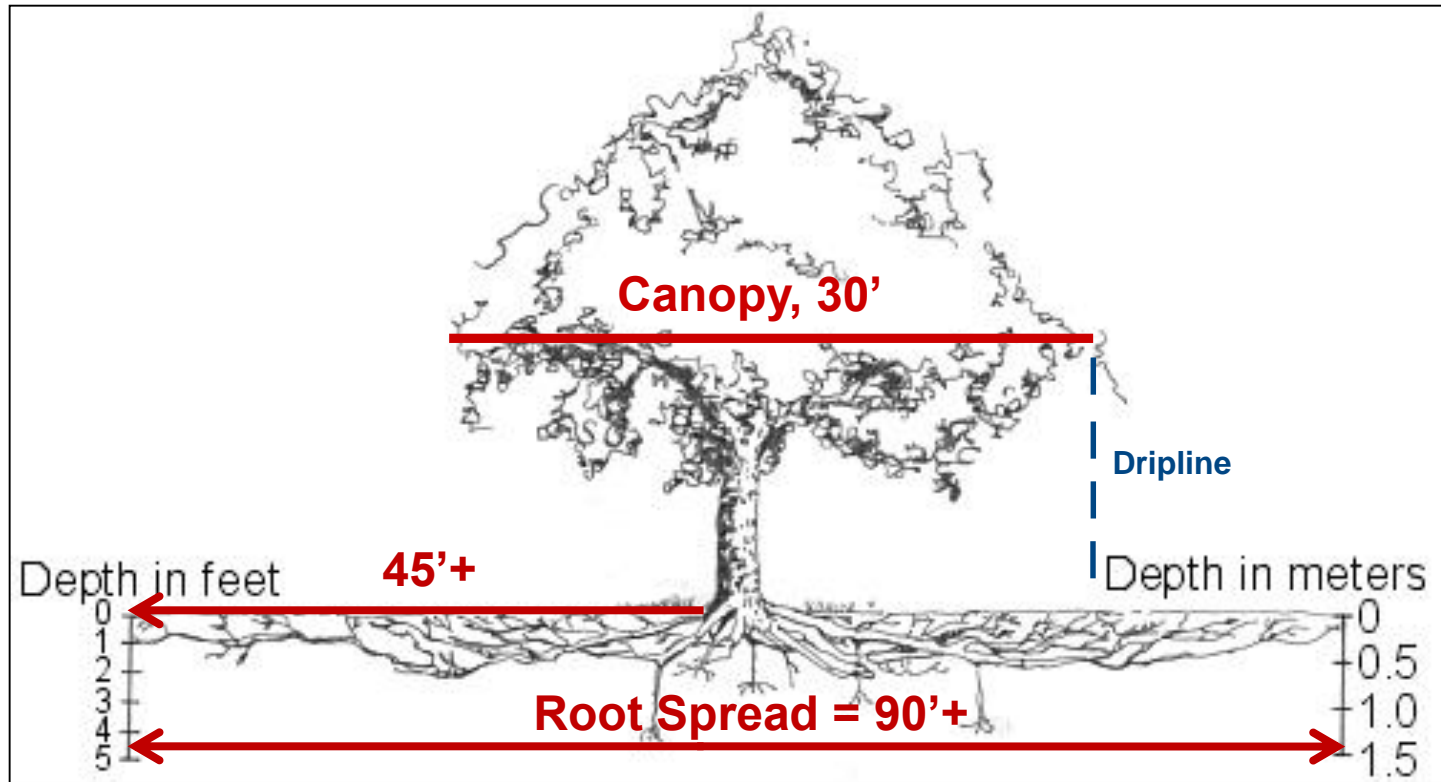


How Far Away?

- Minimum = at least distance of mature height of tree
- Example: Red maple grows ~ 50' tall, plant minimum 50' from edge of drain



Tree Roots Extend Beyond the 'Drip Line'



Small Trees

- Spread of root system directly proportional to size of tree
- Smaller trees (mature < 25') have less extensive root systems = better option
- Minimum distance = 25-30'



Eastern Redbud
Cercis canadensis

What About Existing Trees?

- Best to remove trees in the drain field
 - Installation damages roots, harms tree
 - Increases potential for uprooting
- Recommended to remove trees growing within 30' of drain field



Dieback - Classic symptom of root damage



The Worst and the Least Bad Trees

Avoid NEAR drain fields

- Beech, *Fagus spp.*
- Birch, *Betula spp.*
- Elm, *Ulmus spp.*
- Poplar, *Populus spp.*
- Red Maple, *Acer rubrum*
- Silver Maple, *Acer saccharinum*
- Bald cypress, *Taxodium distichum*
- Willow, *Salix spp.*
- Willow Oak, *Quercus phellos*

Better Choices NEAR drain fields

- Cherry, *Prunus spp.*
- Crabapple, *Malus spp.*
- Dogwood, *Cornus spp.*
- Sourwood, *Oxydendron arboretum*
- Oaks (some), *Quercus spp.*
- Pines, *Pinus spp.*

Shrubs

- Better option than trees
- Woody roots but less extensive
- Never plant over lines
- Recommend at least 10' away from drain field

Blueberries do not tolerate
high pH or excess nutrients



Root Barriers

- Geotextiles embedded with herbicides
- Installed between trees and drain field
- Buried vertically from soil surface to 2-3 feet deep, length of drain field
- At least 5' from drain field + 5' from tree
- Roots may grow under
- \$\$\$



Stump Treatment of Woody Perennials

- Apply herbicides to stumps of freshly cut woody vines and trees
 - Glyphosate (>41%)
 - Triclopyr
- Any time except early spring
 - Sap flow inhibits herbicide uptake
- Cut stump to a few inches above ground
- Paint or spray on cut stump
- No rainfall for at least 6 hours



What About Vegetables?

- NOT recommended!
- Potential for bacterial contamination
- Require fertilization, irrigation, soil cultivation
- NO raised beds over drain field



If You Must . . .

Avoid root crops

- Potato, radish, carrot, beet, turnips, onions
- May be contaminated with harmful bacteria



If You Must . . .

Avoid crops with soil contact

- **Foliage crops:**

- Lettuce, spinach, cabbage, “greens”

- **Fruiting crops:**

- squash, zucchini
- Melons, cucumbers --- only if trellis



Vegetables – Best Options

Fruiting crops that grow up!

- **Warm season:** Beans, corn, eggplant, okra, pepper, tomato (cage)
- **Cool Season:** Broccoli, garden peas, collards/kale – avoid lower leaves



Planting on Septic Drain Fields

Best:

- Low growing, low maintenance, low water use
- Perennials, turf

Worst:

- Woody plants: trees and shrubs

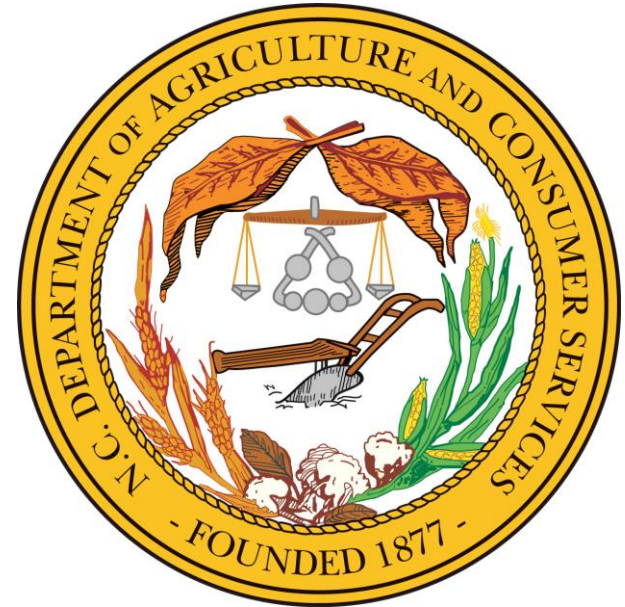
Vegetables:

- Possible but not recommended



Soil Testing in North Carolina

- NCDA Agronomic Services Division
- Analysis is *free* for NC residents
 - Free: Apr.-Nov.
 - \$4/sample: Dec-Mar
- Funded by fertilizer tax
- Determines fertilizer and lime needs
- Chatham EMGVs deliver to Raleigh Apr.-Nov.!

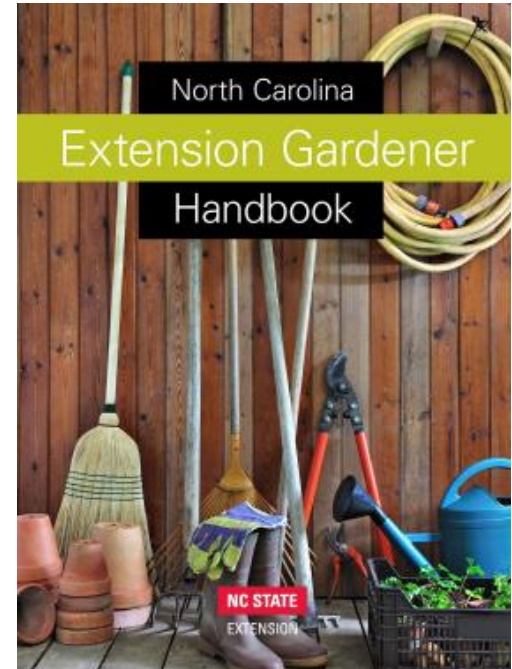


Extension Gardener Handbook

- Available online for **FREE**
<https://content.ces.ncsu.edu/extension-gardener-handbook>
- Full-color, hardback copy available from UNC Press (\$60)


NC STATE

EXTENSION



NC Extension Gardener Plant Toolbox

NC STATE EXTENSION




North Carolina
Extension Gardener
Plant Toolbox

[Home](#) [Find a Plant](#) [Identify a Plant](#) [Help](#)


Home

Featured Plants:


Ampelaster carolinianus
Climbing Aster




Diospyros kaki 'Fuyu'
Fuyu Kaki
Fuyu Persimmon




Gaillardia pulchella
Firewheel
Gaillardia
Girasol Rojo



Lobelia cardinalis
Cardinal Flower



Vaccinium corymbosum
Highbush Blueberry



Quick Plant Lists

Show Stopper Plants


The North Carolina Extension Gardener Plant Toolbox contains detailed descriptions and photographs of 3,392 plants that grow in and around North Carolina.

Here are some tips to get you started

Search by scientific or common name:


Use [Find a Plant](#) to select the perfect plant for a specific location.

Use [Identify a Plant](#) to determine the name of a plant based on leaf and flower characteristics.



Looking for help?

Have a look at the [Help](#) page to get tips on using the Plant Toolbox, and be sure to check the [Glossary](#) for plant identification terms.



We are diligently working to populate all the data in this new plant database. Please be patient with us as not all features will be fully functional and accurate until this work is complete.

The NC State Extension Gardener Plant Toolbox is based on evaluation of plant databases around the world, surveys of Extension agents, Extension Master

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- Click on the subscribe button

Need help? Contact:

NC STATE

EXTENSION

Master Gardener | Chatham County

Plant Clinic: MW 1:00-4:00, F 9:00-12:00

chathamemgv@gmail.com

919-545-2715