Lunch & Learn Southern Pea Trial

WCMGA

Vegetable Demonstration Garden

Southern Pea Trial

- Background
- Planting, Growing, and Care
  - Site Preparation
  - Planting
  - Care
- Pests and Diseases
- Harvest and Storage
- Trial Varieties
- Trial Results Summary
- Nutrition and Health Benefits
- Additional Information

Southern Peas – Background

- Southern Peas – Cowpeas
  - Legume Family
  - Types include Blackeye, Pink Eye, Purple Hull, Cream and Crowder
- Origins
  - From Africa and grown world-wide.
- Southern Peas
  - Harvested and eaten fresh

Trial Conducted between June 11th – October 1st

- Varieties planted
  - Zipper Cream Peas
  - Texas Cream 40 Peas
  - Lady Cream Peas
  - Top Pick Brown Crowder
  - CT Dimpled Brown Crowder
  - Mississippi Purple Brown Crowder

Planting, Growing, and Care

Site Preparation

- Demo garden soil conditions N, P, K good according to soil test
- pH 7.6 - 8
- Drip irrigation
- Full Sun

Planting, Growing, and Care

Planting

- Worm castings
- Planted in two rows –
  - Depth 0.5” – 1.0”
  - Spacing 3” – 4”
- Temperature 84-88 ◦F(day)/ 62-74 ◦F(night)
- Planted between June 11 and July 26

Planting, Growing, and Care

Care

- Water at beginning of trial 3 days/week for 60 min./day
  - 4 days/week (August 9)
  - 3 days/week (September 20)
- Rows fenced to deter animals
- No additional fertilizer
- Plants pollinated by insect and wind

Pests and Diseases

Common Southern Pea diseases are Fusarium wilt, nematode, powdery mildew/rust, viruses

- Trial Issues Encountered:
  - Four out of six rows had rust (fungus)
    - Treated with Copper Fungicide

Pests and Diseases

Common pests: aphid, army worm, cutworm, looper, leaf-footed bug, rodents, deer, rabbit

Trial Issues Encountered:

- Aphids on three of the rows
  - Treated with water spray/insecticidal soap
- Rodents
  - Rat box
- Stink bugs, leafhoppers

Harvest & Storage

Harvest:

- Southern peas are picked before the pods are too light or dry
- Peas are harvested when plump and easy to shell
- Follow specific seed packet instructions (color, length, etc.)
- The majority of trial peas were harvested on Tuesdays and Fridays

Storage:

Harvested pods should be kept in a cool environment and processed quickly.

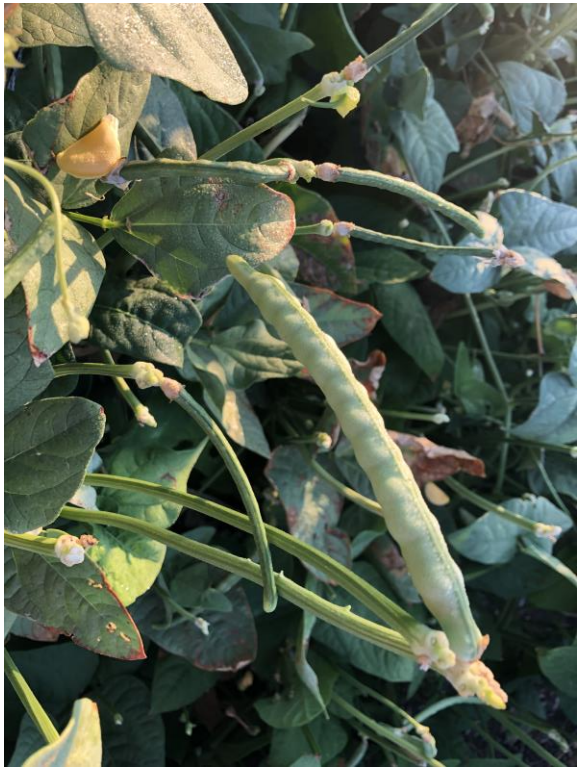
Freeze if the peas will not be consumed right away.

- Shell
- Rinse/sort
- Blanch in boiling water for 90 seconds
- Strain and soak in ice water for two minutes
- Dry and spread on cookie sheet in a single layer and put in freezer
- Once peas are frozen for about 1 hour, put in ziplock bags and freezer

Top Pick Brown Crowder

Zipper Cream Peas

Zipper Cream Peas

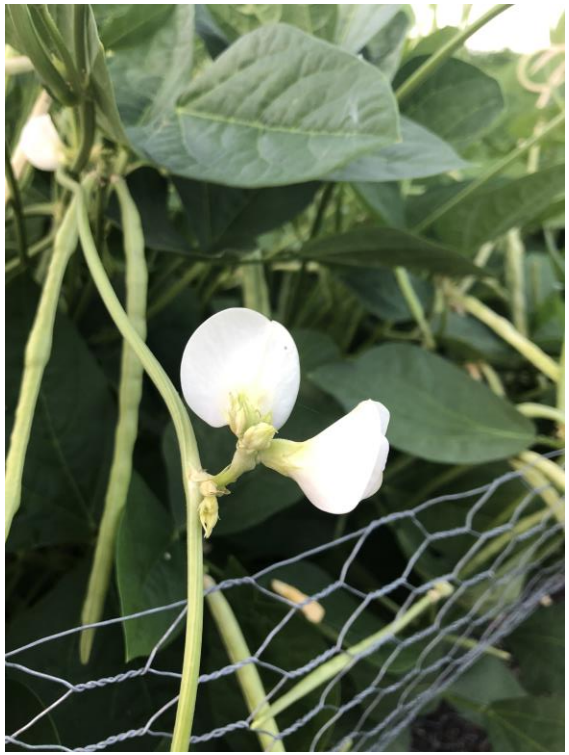


Seed Packet Info.(Southern Exposure Seed Exchange)**:** Southern Pea (Vigna Unguiculata), 67 days to maturity; Bushy 2-3'H, pods 6-9 "L, large, creamy-white seeds, easy to shell

Trial:

- Total harvested: 68.3 pounds
- Planted 6/11/19; Days to maturity 59 days; Average height 2'
- Harvested pod size 6-7"L, plump, curved, light green to cream in color, easy to shell
- Rust, rats, stink bugs
- Many pollinators

Texas Cream 40



Seed Packet Info. (Willhite Seed Inc.): Southern Pea (Vigna Unguiculata), Heirloom, 65 days to maturity, erect habit, pods 6-8”L, pod color at maturity is green with orange eye, slight curvature

Trial:

- Total harvested: 35.9 pounds
- Planted 7/19/19; Days to maturity 53 days; Average height 2’
- Harvested pod size 6-7.5”L, plump, straight, light green to cream in color, easy to shell
- Rust, rats, stink bugs
- Many pollinators

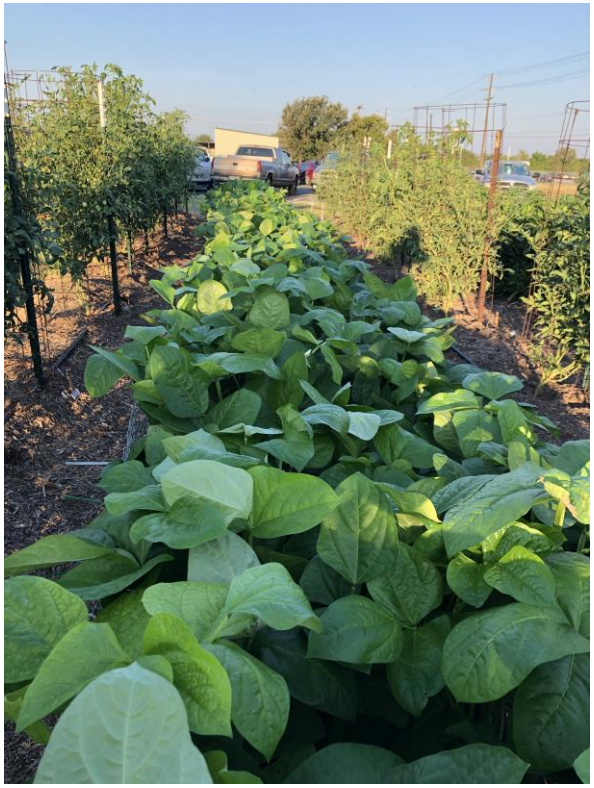
Lady (Lady Finger) Cream Peas

Seed Packet Info. (Willhite Seed Inc)**:** Southern Pea (Vigna Unguiculata), Heirloom(from 1800's), 70 days to maturity; semi-erect and will produce short runners and tend to sprawl; small peas, more work to shell

Trial:

- Total harvested: 22.8 pounds
- Planted 6/21/19; Days to maturity 63 days; Average height 2'
- Harvested pod size 4-6"L, thin, long, plump, straight/slight curve, light green to cream , more work to shell
- Rust, rats, stink bug
- Many pollinators

Top Pick Brown Crowder



Seed Packet Info (Willhite Seed Inc.): Southern Pea (Vigna Unguiculata), 50-57 days to maturity; upright bush with top set pods, pale silvery green to pale pink when ready to pick, easy to shell

Trial:

- Total harvested: 12.3 pounds
- Planted 7/26/19; Days to maturity 53 days; Average height 2’
- Harvested pod size 5.5-7”L, plump, curved, light green to pink, easy to shell
- Rust, aphids, stink bugs

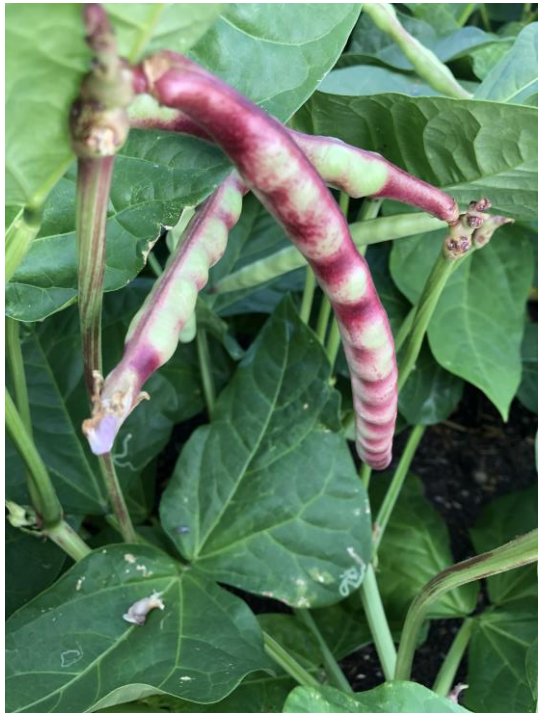
CT Dimpled Brown Crowder

Seed Packet Info. (Willhite Seed Inc.): Southern Pea (Vigna Unguiculata), 65-70 days to maturity; Bushy 15-18”H, lavender flower color, easy to shell. Developed in 1985 to replace Brown Crowder.

Trial:

- Total harvested: 6.8 pounds
- Planted 7/26/19; Days to maturity 60 days; Average height 21-24"
- Harvested pod size 5-8”L, plump, light curve, light green turning pink, easy to shell
- Started out and remained sparse-thrip
- Aphids, stink bugs

Mississippi Purple Brown Crowder



Seed Packet Info. (Willhite Seed Inc.): Southern Pea (Vigna Unguiculata), 65 days to maturity; less vine than most heirloom Crowders, 24”H, semi-erect with semi-compact foliage, lavender flower color, easy to shell, reddish purple pods at harvest

Trial:

- Total harvested: 5.5pounds
- Planted 7/26/19; Days to maturity 60 days; Average height 21”
- Harvested pod size 5-8”L, plump, light curve, purple pods, easy to shell
- Major problem: Aphids

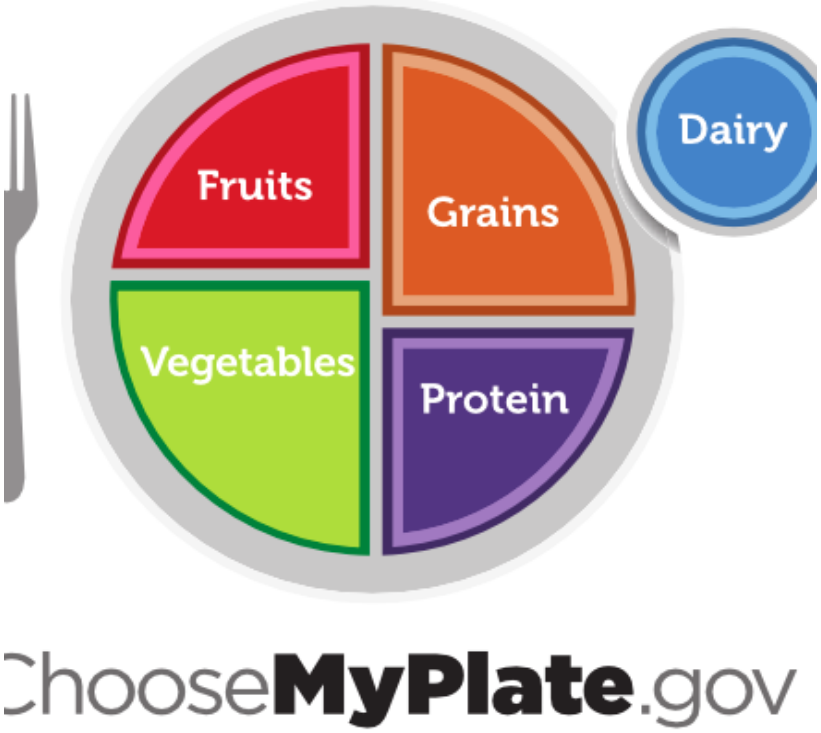
Trial Results Summary

Variety	Days to maturity	Total Harvest (pounds)	Issues
Zipper Cream (6/11/19)	59 days	68.3	Rust, rodents, stink bugs
Texas Cream 40 (7/19/19)	53 days	35.9	Rust, rodents, stink bugs
Lady Cream (6/21/19)	63 days	22.8	Rust, rodents, stink bugs
Top Pick Brown Crowder (6/21/19)	53 days	12.3	Aphids, rust, stink bugs
CT Dimpled Brown Crowder (7/26/19)	60 days	6.8	Aphids, stink bugs, sparse, thrip
MS Purple Brown Crowder (7/26/19)	60 days	5.5	Aphids

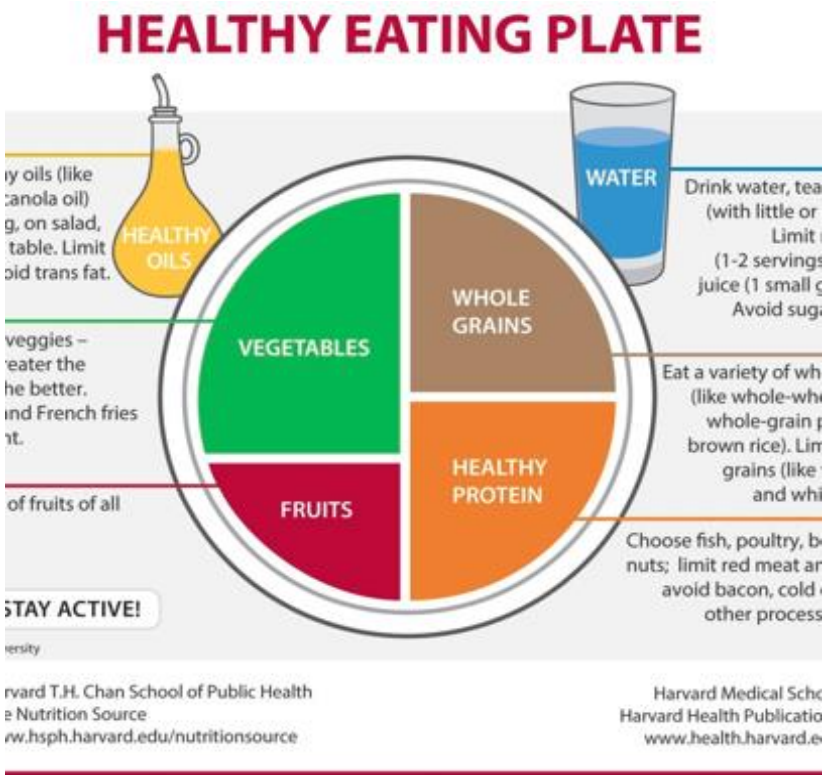
- Zipper, TX Cream 40 and Lady Cream most affected by rust
  - Did not appear to affect yield
  - Consider single row planting and more space between rows where possible
- Brown Crowder Peas affected by aphids
  - Mississippi Purple Brown Crowder affected the most
  - Plants to deter aphids - mint
- Checking plants often helped with disease and pests
- Harvested only two days/week on Demo Garden work days
  - Resulted in harvesting some dry peas

Healthy Eating Guidelines

USDA "My Plate" guide



Harvard's "Healthy Eating Plate"



Peas and Beans are a Special Group

Protein Group
AND

- High amount of **protein, iron and zinc.**

Vegetable Group

- High amount of **fiber** and **vitamins and minerals**, especially **folate** and **potassium.**

s Beans

5 oz Steak

- 300 Kcal
- 44 g high quality protein
- 12 g fat, mostly saturated
- 120 mg cholesterol
- Same amount iron

1 cup of cooked Pinto Beans

- 265 Kcal
- 15 g plant based protein
- **1 g fat**, mostly polysaturated
- **0 mg** cholesterol
- Same amount iron
- + 26 g complex CHO
- +15 g fiber
- +Potasium
- +Folate

Health Benefits

- Help maintain healthy weight
  - Low fat, high fiber, no cholesterol, complex CHO
  - Part of Mediterranean diet
- Reduce risk of chronic diseases
  - Diabetes
  - Heart diseases
- Contributes to gut health
  - Prebiotics: food for gut bacteria

Things to consider

- Eat them with a **cereal** so amino acids complement and make a *better quality protein*.
- Drink or eat **vitamin C** so iron could be *absorbed better*

Healthy Cooking & Baking Swaps

Beans, lentils, chickpeas and dry peas are chameleons in the kitchen.
Try these easy swaps to amp up the nutrition in your favorite dishes:

VEGGIE BOWLS

REPLACE: ½ OR ALL QUINOA

WITH THIS: COOKED GREEN LENTILS

BENEFITS: ✓More FIBER ✓More PROTEIN

TACOS

OR: replace ½ the meat in any recipe

REPLACE: ½ OR ALL SHREDDED PORK

WITH THIS: COOKED GREEN LENTILS

BENEFITS: ✓Fewer CALORIES ✓Less FAT ✓More FIBER

SANDWICH SPREAD

REPLACE: MAYONNAISE

WITH THIS: HUMMUS

BENEFITS: ✓Less FAT ✓More FIBER ✓More PROTEIN

LASAGNA

REPLACE: ½ OR ALL RICOTTA CHEESE

WITH THIS: PUREED WHITE BEANS

BENEFITS: ✓Fewer CALORIES ✓Less FAT ✓More FIBER

BURGERS

REPLACE: ½ OR ALL GROUND BEEF

WITH THIS: MASHED PINTO BEANS

BENEFITS: ✓Fewer CALORIES ✓Less FAT ✓Less SATURATED FAT ✓More FIBER

MAC N' CHEESE

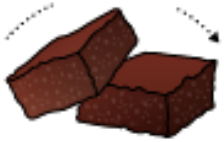
REPLACE: UP TO ½ CHEESE SAUCE

WITH THIS: YELLOW SPLIT PEA PUREE

BENEFITS: ✓Less FAT ✓More FIBER

BROWNIES

REPLACE: 1 CUP FLOUR



WITH THIS: 1 15oz. CAN BLACK BEANS, PUREED

BENEFITS: ✓More FIBER ✓More PROTEIN

CHOCOLATE CHIP COOKIES

REPLACE: ½ OR ALL OIL

WITH THIS: RED LENTIL PUREE

BENEFITS: ✓More FIBER ✓More PROTEIN

Figures sourced from USDA Nutrient Database

½ CUP HABIT PULSES

For more tips and recipes, visit **Pulses.org**

Affordable $$

- Most affordable source of protein around the world.
  - Aprox. 10 cents per serving

Not Only Good for Us… But for the Planet!

- Nitro-fixing crops
- Water efficient
- Drought tolerant
- Frost hardy
- Low carbon food print

Sustainable

Additional Information

- aggie-horticulture.tamu.edu/.../vegetables/pea.htm
- https://aggie-horticulture.tamu.edu/extension/newsletters/vpmnews/dec01/art3dec.html
- https://plantdiseasehandbook.tamu.edu/food-crops/vegetable-crops/southern-pea-blackeye-cowpea/
- Southern Exposure Seed Exchange: www.southernexposure.com
- Willhite Seed Inc.: www.willhiteseed.com
- https://aggie-horticulture.tamu.edu/vegetable/files/2011/10/southernpea.pdf
- https://www.extension.iastate.edu/alternativeag/cropproduction/pdf/cowpea_crop_guide.pdf
- https://hgic.clemson.edu/factsheet/southern-peas/
- https://lubbock.tamu.edu/programs/crops/vegetables/southern-pea/https://pulses.org/nap/what-are-pulses/
- http://young.agrilife.org/files/2011/05/drybeanspeas.pdf
- https://jovinacooksitalian.com/tag/lady-peas/
- https://www.choosemyplate.gov
- https://www.hsph.harvard.edu/nutritionsource/sustainability/plate-and-planet/
- https://www.wri.org/resources/charts-graphs/animal-based-foods-are-more-resource-intensive-plant-based-foods
- https://www.mailman.columbia.edu/research