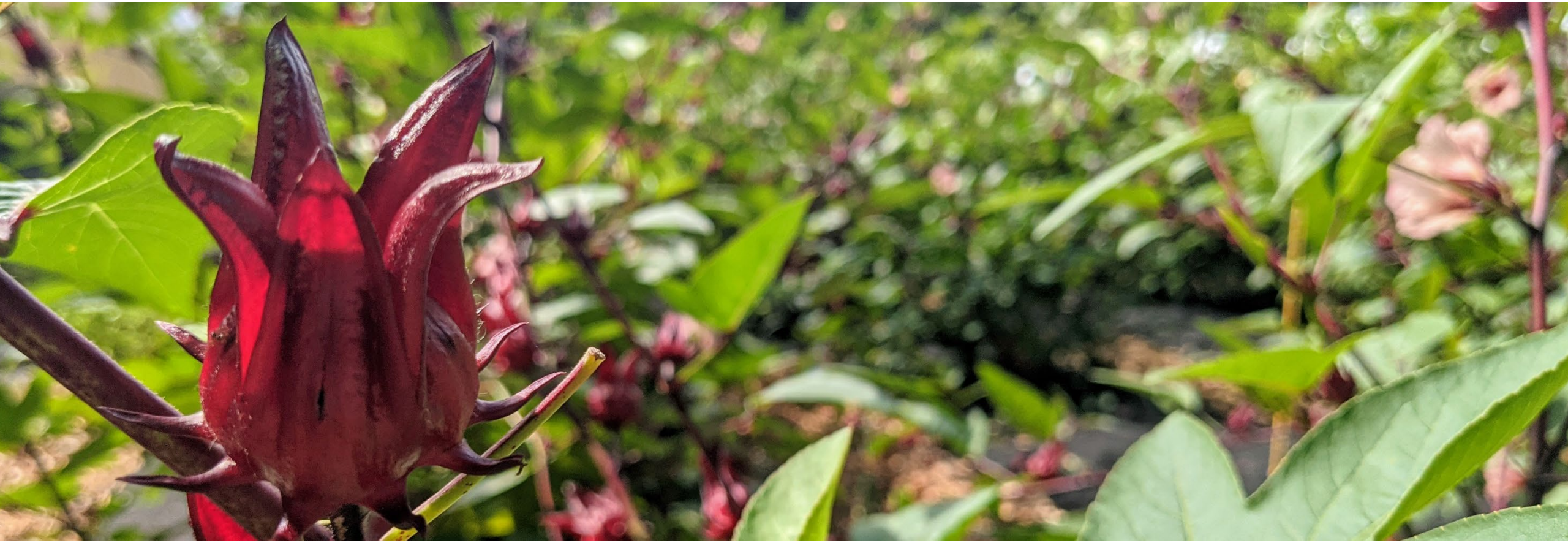
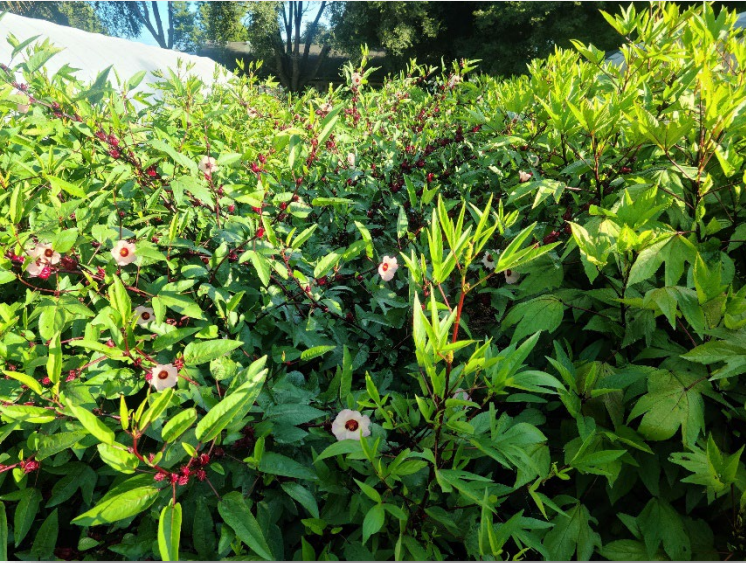


On-Farm Evaluation of Sorrel (*Hibiscus sabdariffa*) Varieties for Central Florida Commercial Production



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INTRO / BACKGROUND



Not Rumex genus
Ex. French sorrel,
common sorrel

- Sorrel (*Hibiscus sabdariffa*) goes by many names
 - **Roselle**, flor de Jamaica, Florida cranberry, Jamaican sorrel, etc.
- Flowering shrub native to West Africa that is very popular in Afro-Caribbean culinary culture.
- Related to:
 - Cotton (bolls)
 - Okra (sliminess)
 - Ornamental hibiscus (flowers)

BACKGROUND



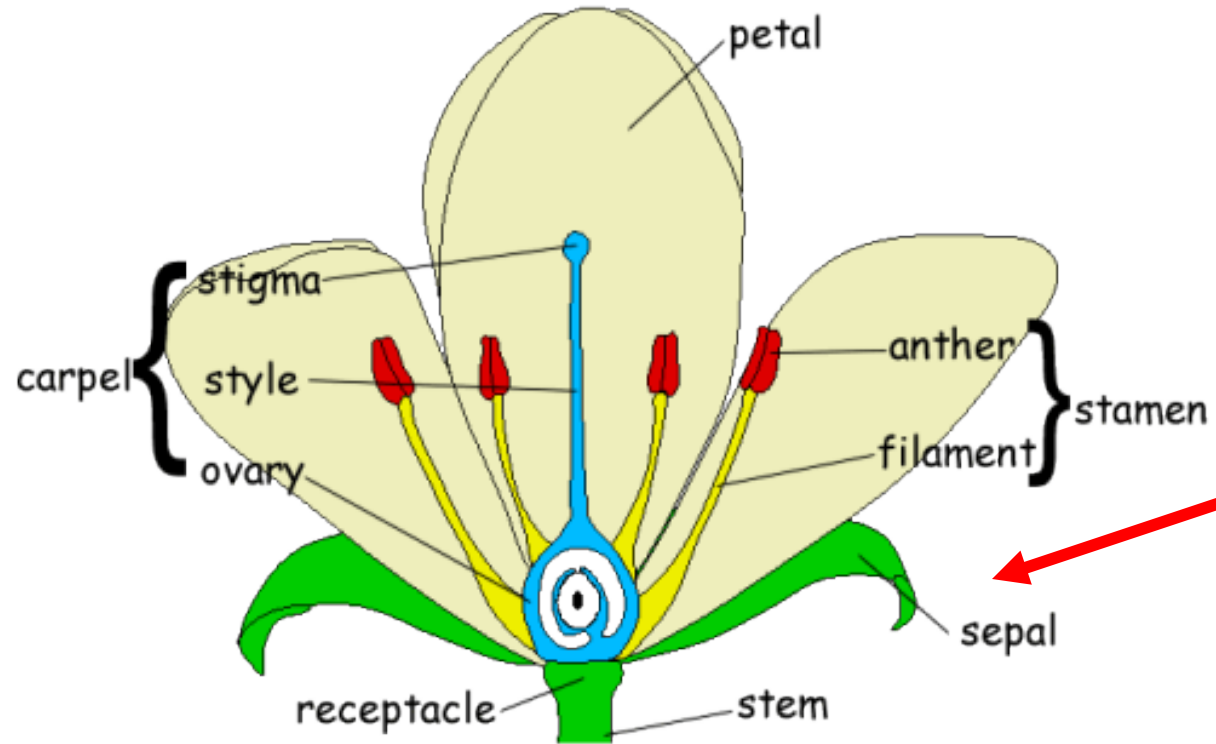
- Increased interest among Central Florida small farms to grow and market sorrel to the large Afro-Caribbean population in the Orlando and Tampa metro areas.
- UF/IFAS and University of the Virgin Islands (breeder) received a Southern SARE grant to trial four sorrel varieties on two Central Florida farms over a two-year period.
- Goal- determine optimal varieties for Central Florida growers.

USE AND VALUE



- Leaves are edible and often used in salads, fish dishes, and curries.
- Similar uses to spinach
- Abundant growth in summer allows for window of opportunity for fresh greens
- Woody stems can be used for fiber (similar to hemp)
- And the calyxes...

WHAT EXACTLY AM I EATING?



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Collectively, the sepals are called the calyx

USE AND VALUE



- The prized part of plant – and money maker
- Not actual fruit or flower
- Deep red calyces **used for tea, drinks, food, dyes, garnish, etc.**
- Used fresh and can be dried, ground and stored

USE AND VALUE



SORREL: GROWING & CULINARY USES

LORI JOHNSON, FAMILY & CONSUMER SCIENCES AGENT
BRANDON WHITE, COMMERCIAL CROP & FOOD SYSTEMS AGENT
UF/IFAS EXTENSION LAKE COUNTY

NUTRITION:

- Calcium: Bone and teeth formation, muscle contraction, nervous system function
- Magnesium: Blood pressure and blood sugar regulation
- Phosphorus: Bone formation and energy production
- Potassium: Fluid balance and heart function
- Vitamin C: Immunity & heals cuts and wounds

SALAD & DRESSING

- Salad
 - Combine young tender leaves from sorrel plant with spinach for the base to any salad.
 - Topping ideas include: goat cheese, pecans, cherry tomatoes, and chopped sorrel calyxes.
- Dressing
 - In a food processor fine chop 3 cups of whole sorrel calyxes with 1/4 cup water to blend into a puree.
 - In a jar with a tight fitting lid combine:
 - 1 garlic clove, minced, 1 tablespoon honey, 1/4 cup balsamic vinegar, 1/4 cup olive oil, 1 tablespoon fresh lemon juice, a dash of salt and pepper, and sorrel puree.
 - Shake until well-blended, use within a few days.

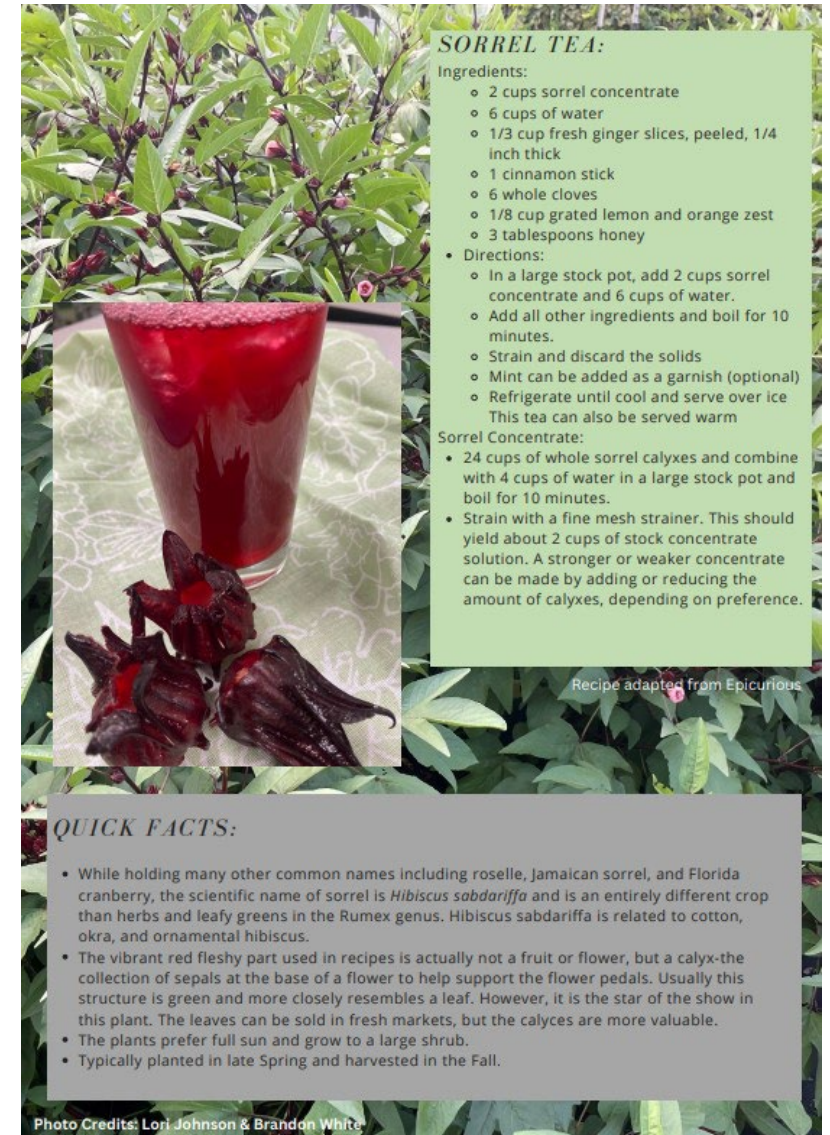
Recipe credit Brandon White



SORREL ORANGE RELISH:

- Ingredients
 - 8 cups of whole sorrel calyxes
 - 1/2 navel orange, cut into 4 wedges, skin included and washed
 - 3/4 cup pecan halves
 - 1/3 cup honey
 - 1/2 cup water
- Directions
 - Place sorrel calyxes in food processor and chop.
 - Add remaining ingredients and blend until finely chopped with a crunchy texture.
 - Chill until ready to serve.

Recipe adapted from NYT Cooking



SORREL TEA:

Ingredients:

- 2 cups sorrel concentrate
- 6 cups of water
- 1/3 cup fresh ginger slices, peeled, 1/4 inch thick
- 1 cinnamon stick
- 6 whole cloves
- 1/8 cup grated lemon and orange zest
- 3 tablespoons honey

Directions:

- In a large stock pot, add 2 cups sorrel concentrate and 6 cups of water.
- Add all other ingredients and boil for 10 minutes.
- Strain and discard the solids
- Mint can be added as a garnish (optional)
- Refrigerate until cool and serve over ice. This tea can also be served warm

Sorrel Concentrate:

- 24 cups of whole sorrel calyxes and combine with 4 cups of water in a large stock pot and boil for 10 minutes.
- Strain with a fine mesh strainer. This should yield about 2 cups of stock concentrate solution. A stronger or weaker concentrate can be made by adding or reducing the amount of calyxes, depending on preference.

Recipe adapted from Epicurious

QUICK FACTS:

- While holding many other common names including roselle, Jamaican sorrel, and Florida cranberry, the scientific name of sorrel is *Hibiscus sabdariffa* and is an entirely different crop than herbs and leafy greens in the Rumex genus. *Hibiscus sabdariffa* is related to cotton, okra, and ornamental hibiscus.
- The vibrant red fleshy part used in recipes is actually not a fruit or flower, but a calyx—the collection of sepals at the base of a flower to help support the flower pedals. Usually this structure is green and more closely resembles a leaf. However, it is the star of the show in this plant. The leaves can be sold in fresh markets, but the calyxes are more valuable.
- The plants prefer full sun and grow to a large shrub.
- Typically planted in late Spring and harvested in the Fall.

Photo Credits: Lori Johnson & Brandon White

AGRONOMICS

- **Grown as an annual here in FL**
 - Sometimes perennial in islands
- **Grows to large shrub (4-7 feet tall / and almost as wide)**
 - i.e. needs space
- **Season**
 - Plant late Spring/early Summer
 - Harvest starts in late Summer early Fall
- **Full Sun**
- **Low input crop** – drought tolerant and low fertility needs
- Likes sandy soil – does **NOT** like poor draining soils (wet feet) !



Plant in May
Harvest in Sept - Nov

DISCLAIMER
Limited data still
Some observational info

AGRONOMICS

- Seeds true to type
- Can be transplanted or direct seeded
- Excellent germination – rates and times
- **Photoperiod sensitive** (short day and DN)
- **Drip and overhead both used successfully**
(*and no irrigation—summer rains*)
- **Fertility**
 - Low requirement
 - Organic/conv forms. (1) app ~ planting



PESTS AND DISEASES



- **Low insect pest pressures and economic thresholds in our trials and experiences**
- **None of our farms treated for insect pests**
- **Aphids, mealybugs, lubbers**
 - * is a new crop to area so...
- **Susceptibility to nematodes (RKN) ?**
 - High counts in trial we lost, but also high disease pressure (saturated soil)
 - Reports of susceptibility in literature

PESTS AND DISEASES



- Did observe **severe** issues with root rot diseases
 - Summers rains on poorly drained sites
 - **Phytophthora, Southern Blight** (*Sclerotium rolfsii*) and **Fusarium Crown and Stem Rot** (*Fusarium sp./spp.*)

HARVEST AND STORAGE



- Start to **flower** ~ **August** and ready to **harvest** ~ **Sept**
 - Multiple harvests - bi-weekly (~5)
- **Calyxes must be clipped** (labor intensive)
- **De-seeding process**
- Calyxes can be used fresh. Can freeze or air dry and grind for powder
- When boll (seed pod) starts to turn brown and crack, seeds are mature.
 - Dormancy period (dry before sowing)

YIELDS ?



- **Conservative ~yields (with bolls)**
 - 1 pound/plant/harvest
 - 4 x 8 spacing (1,360 plants per acre)
 - @ 5 harvests
 - ~ 6,800 pounds per acre

PRICES ?



- **One of our farmers at their local market**

- Leaves \$3.99 per bunch
- Calyxes with bolls \$4.99/pound
- Calyxes without bolls \$9.99/pound

(pre-inflation prices, 2021)

OTHER CONSIDERATIONS



- **Plants lodge! (Vigorous growth)**
- **Produce large trunks and roots systems**

Outro

Local and Day Neutral are varieties we had most success with. Festival and Black are two others that we trialed – came in late

For Seeds:



Dr. Thomas Zimmerman

- University of the Virgin Islands (US)
- Professor/**Breeder**
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General Info Here in FL:



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THANK YOU!

