

Potential for Roselle (*Hibiscus sabdariffa* L.) as an Alternative Vegetable Crop for Mid-Atlantic Growers

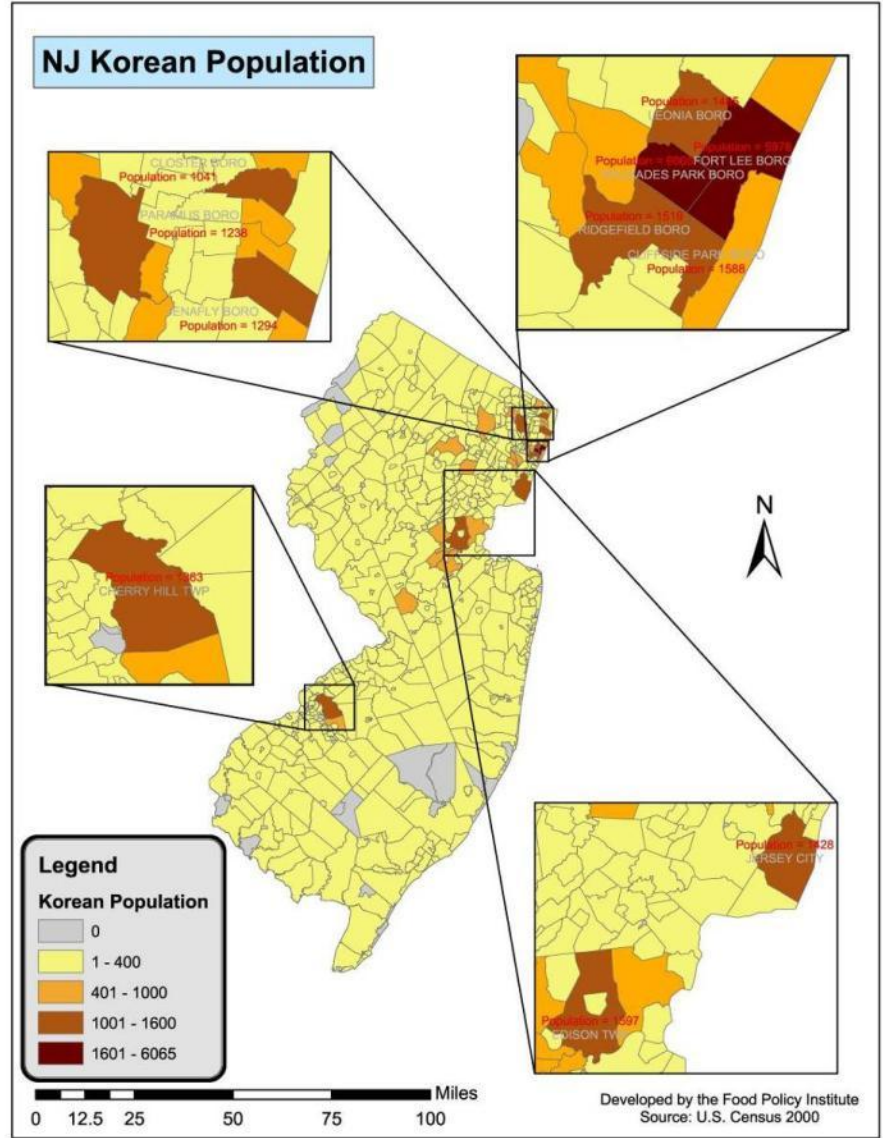
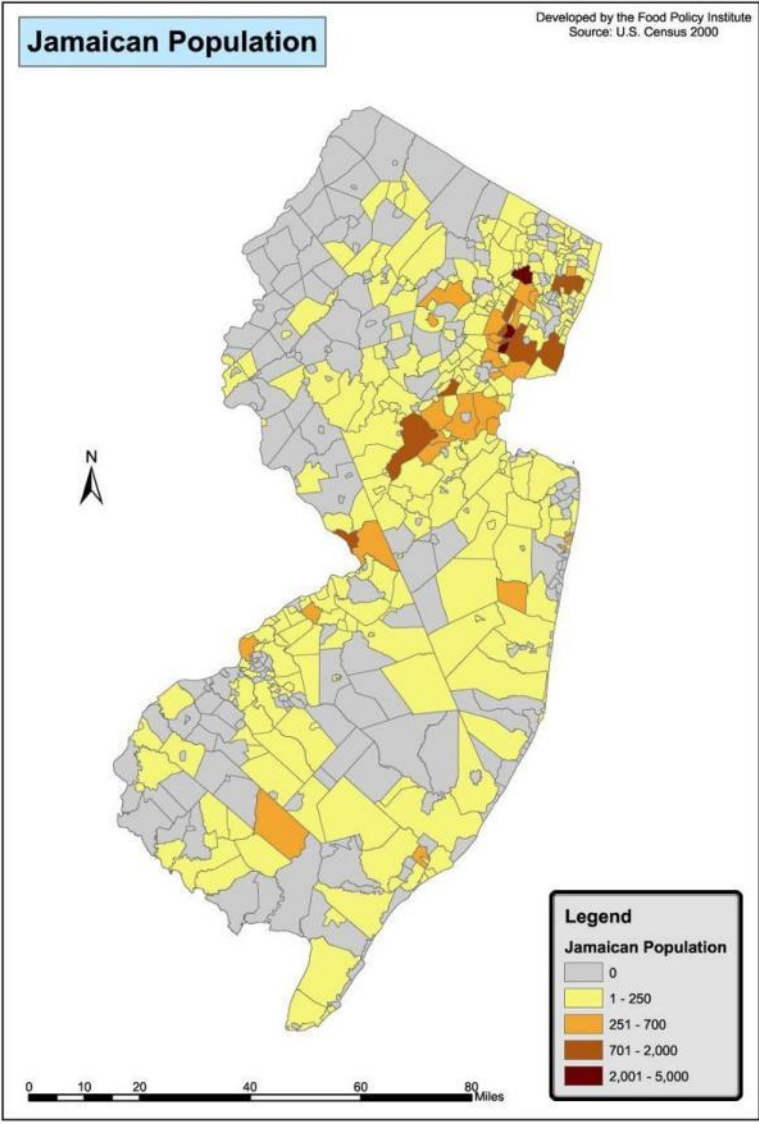
R. VanVranken, V. Marbey, and M. Gbolo
Rutgers Cooperative Extension—
Atlantic County
Mays Landing, NJ

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Our EPPMWG Team



Census Data Reveal Market Opportunities



Ethnic Greens - Past(?)



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Ethnic Greens - Present(?)



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Ethnic Greens - Present(?) Chinese



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Ethnic Greens - Present(?) Asian Indian



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Ethnic Greens - Future(?)

- ❖ Jute
- ❖ Amaranth – Tricolor, Green, Red
- ❖ Purslane/verdalago



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Ethnic Greens - Future(?) West African



- ❖ Jute
- ❖ Sweetpotato



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Ethnic Greens - Future(?) Cross Cultural

❖ Roselle

(Hibiscus sabdariffa L.)

- ▶ Sour Sour
- ▶ Burmese Sour Spinach
- ▶ Jamaican Rose/Sorrel
- ▶ Thai Red
- ▶ Bissap



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Impact of Production System and Cultivar on Yields of Roselle (*Hybiscus sabdariffa* L.) Leaves and Calyxes

❖ Objectives

- ▶ To study of yield potential of commercially available cultivars in response to three management systems (bare ground multi-harvest, plastic mulch multi-harvest, bare-ground single harvests of multiple plantings)
 - Challenges
 - “commercially available cultivars” very limited
 - Seed quantities limited

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❖ Methods

▶ 2011

- ▶ Single strip plot with or without black plastic mulch
- ▶ 6 week old transplants var. Thai Red planted late June

▶ 2012

- ▶ Split strip plot with or without black plastic mulch
- ▶ 6 week old transplants var. Thai Red planted mid June
- ▶ Leaves and shoots harvested from same 5ft (3 plant) subplots 4 times



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❖ Methods

▶ 2013

- ▶ Completely randomized block (5 reps) X 6 split-plot (mulch vs. no mulch) cultivar treatments
- ▶ 5ft x 15ft sub-plots planted on July 7 with 8 week old (2012 seed) or 4 week old (2013 seed) transplants at 15in in-row spacing or direct seeded bare ground plots at 3in in-row spacing
- ▶ Plots were harvested (leaves and shoots) once over completely on 9/10 and then subsamples of 5 plants/plot were harvested on 10/25

Impact of Production System and Cultivar on Yields of Roselle (*Hybiscus sabdariffa* L.) Leaves and Calyces

❖ Methods

▶ 2013

➤ Seed sources

- Baker Creek – Thai Red 2012
- Baker Creek – Thai Red 2013*
- Baker Creek – Jamaica Cocktail 2013*
- California Gardener – Thai Red (mixed) 2013 (one rep only)

*direct seeded (bare ground only) and transplants

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Yields of Roselle (*Hybiscus sabdariffa* L.)
Leaves and Calyxes**

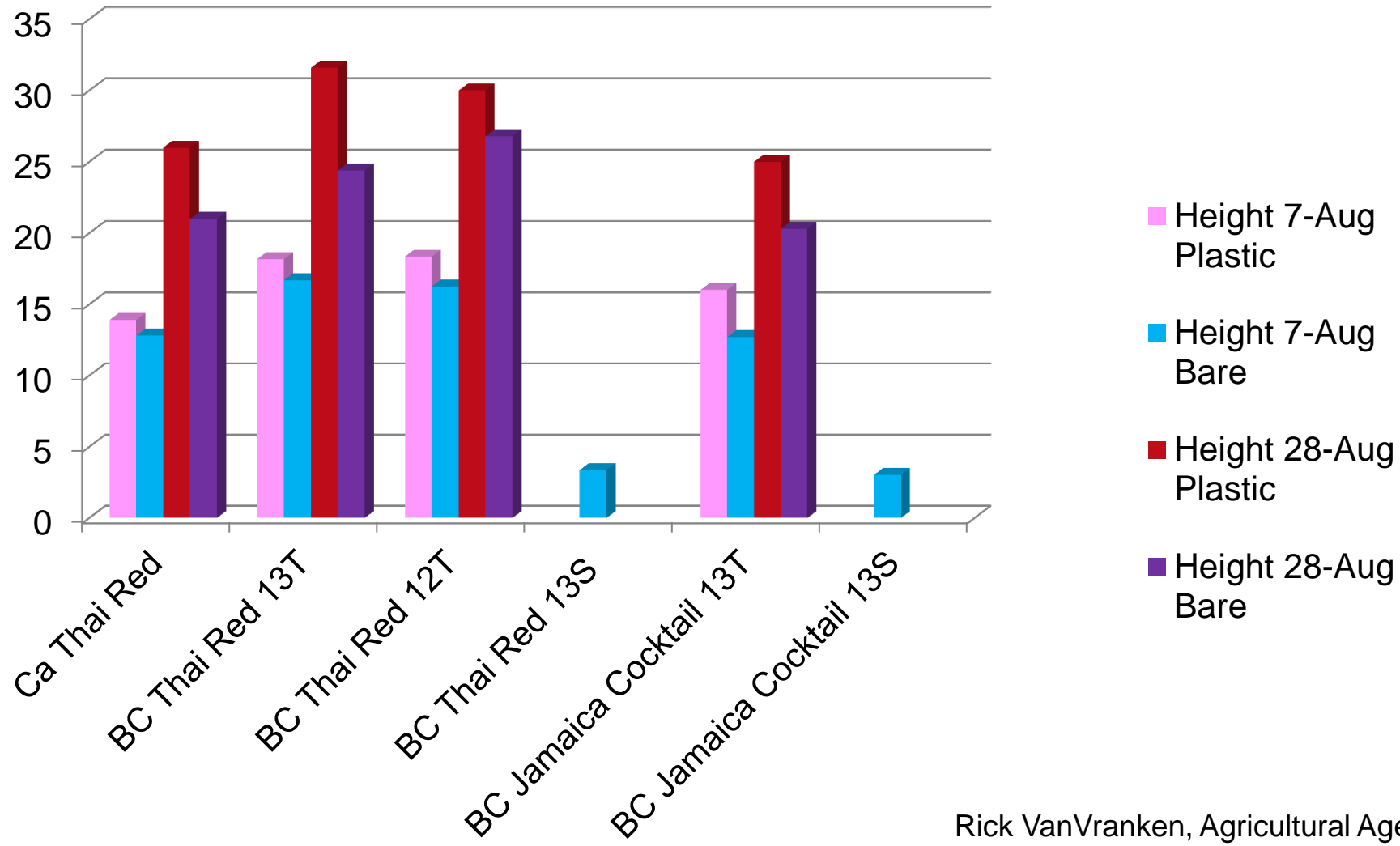
❖ **Methods**

▶ **2013**



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Mean Height (in) of Roselle Cultivars on Black Plastic Mulch vs. Bare Ground at 4 & 7 Weeks Post-transplanting



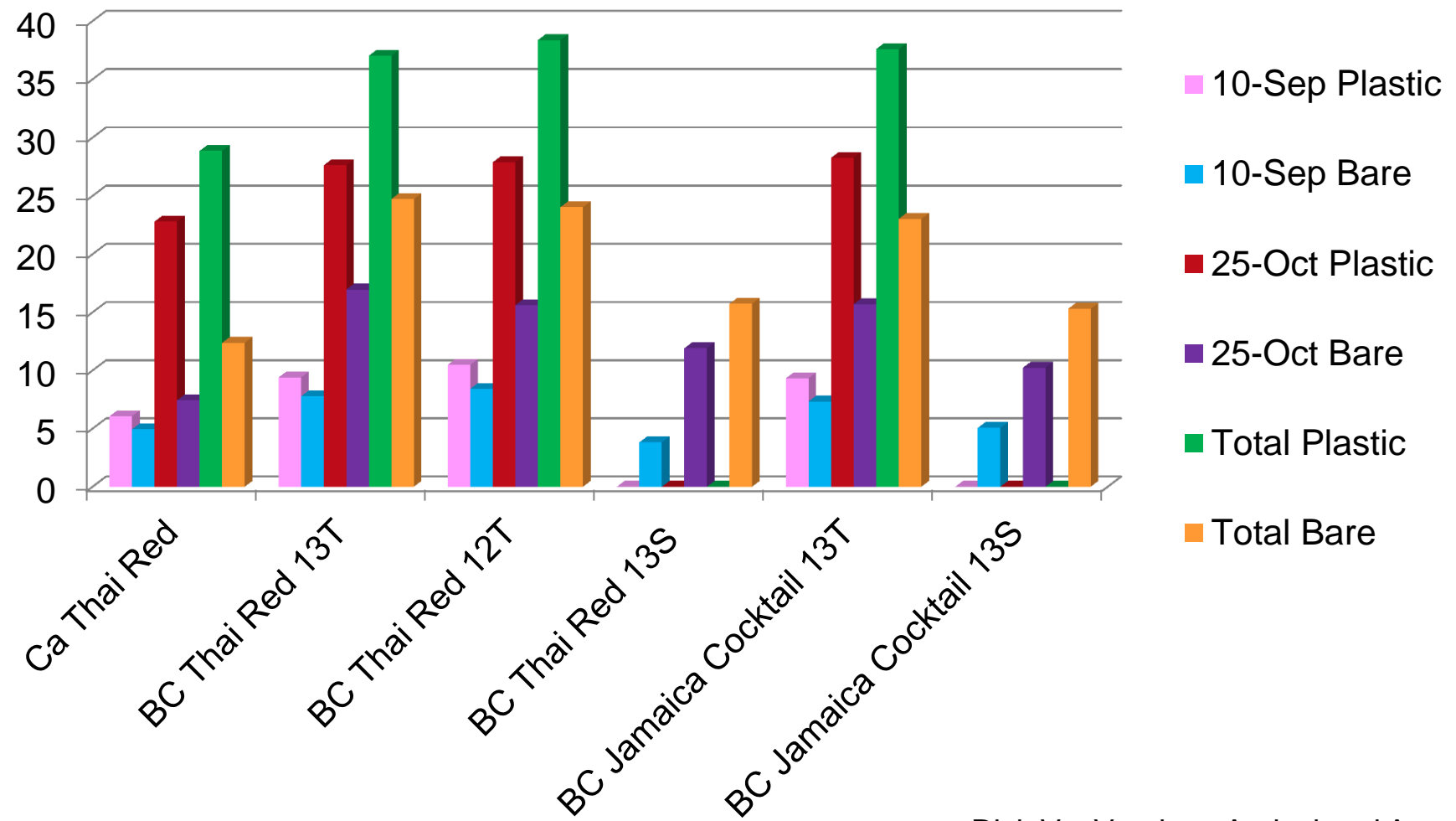
Mean Height (in) of Roselle Cultivars on Black Plastic Mulch vs. Bare Ground at 4 & 7 Weeks Post-transplanting



**Direct Seeded
Jamaican Cocktail**

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Mean Yield (lbs/plot) of Roselle Cultivars on Black Plastic Mulch vs. Bare Ground at 9 & 15 Weeks Post-transplanting



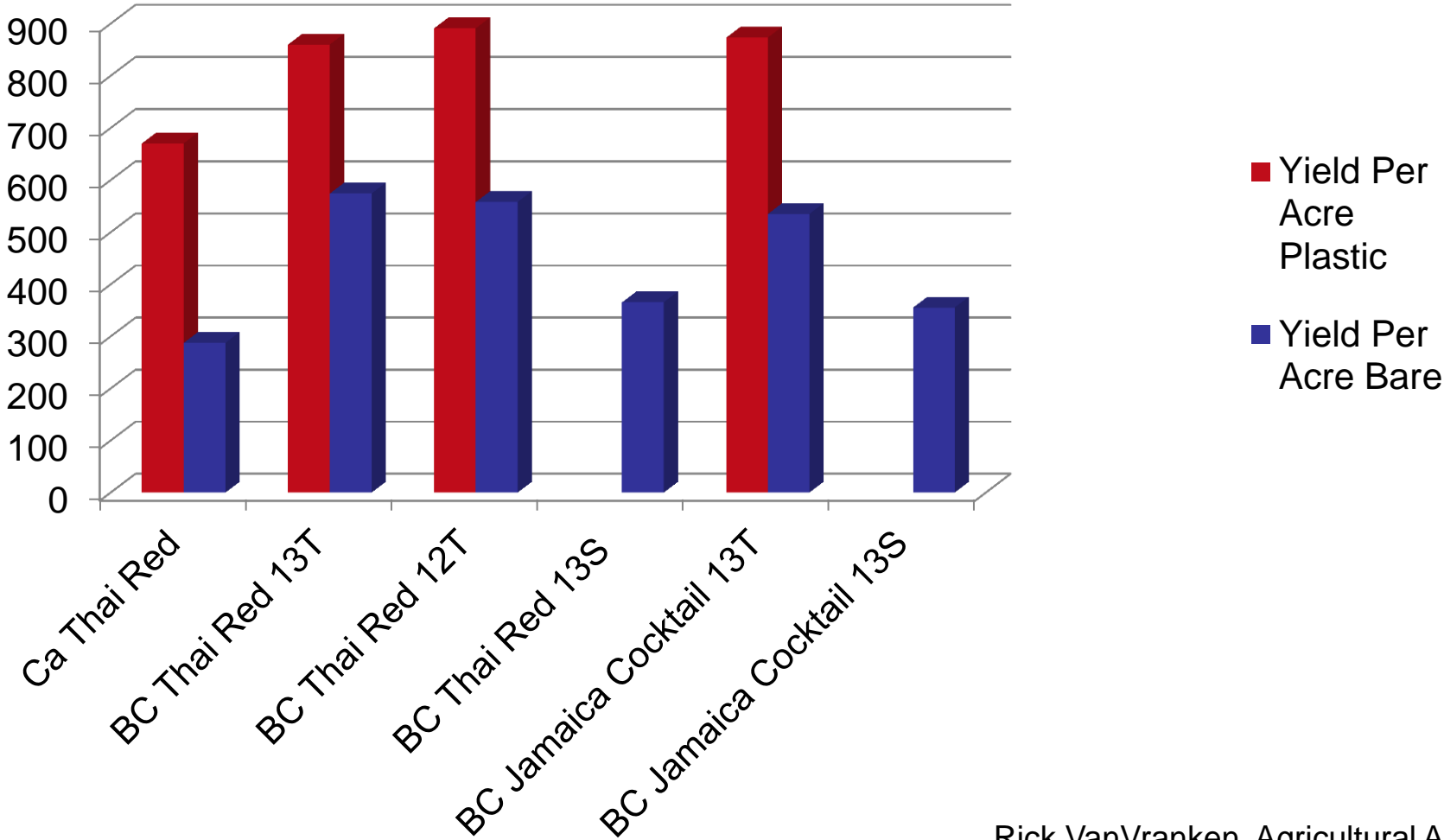
Mean Yield (lbs/plot) of Roselle Cultivars on Black Plastic Mulch vs. Bare Ground at 9 & 15 Weeks Post-transplanting



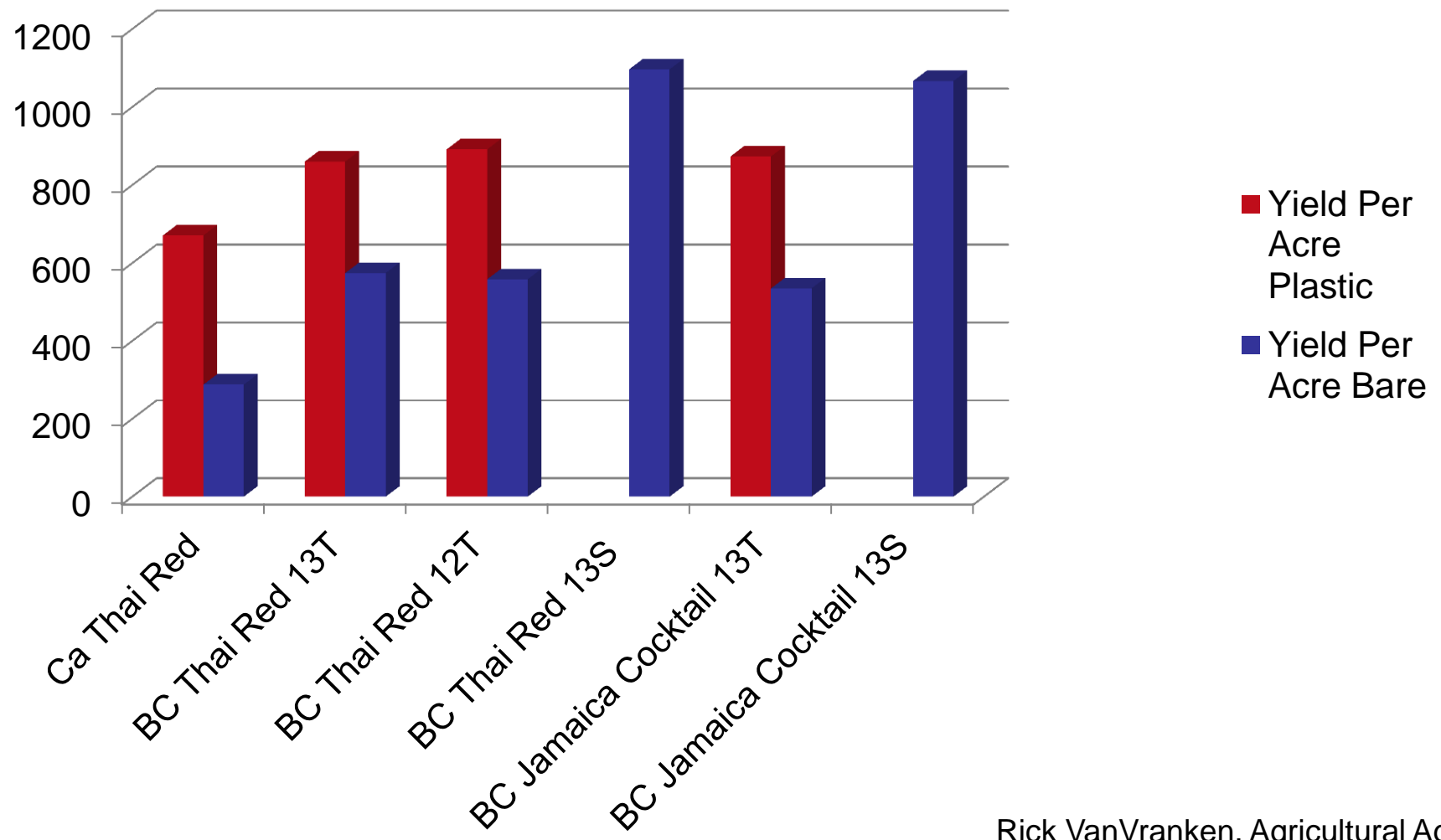
Fertility, Weather, Herbicide???

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Mean Yield Potential (25 lb. boxes/acre) of Roselle Cultivars on Black Plastic Mulch vs. Bare Ground



Mean Yield Potential (25 lb. boxes/acre) of Roselle Cultivars (3 rows/bed Direct Seeded vs. Transplants)



Impact of Production System and Cultivar on Yields of Roselle (*Hibiscus sabdariffa* L.) Leaves and Calyxes

❖ Conclusions

- ▶ For pick-your-own, plastic mulch improves yields and provides cleaner picking conditions for customers
- ▶ For wholesale shippers, bare ground intensive cultivation shows potential for quicker production of marketable shoots and leaves similar to spinach and other greens but needs verification



Go to Region:

Africa
Americas
Asia
Europe

About Roselle:

Production
Post Harvest Handling
References

Found In:

	Nigeria
	Vietnam
	El Salvador
	Cambodia

Roselle *Hibiscus sabdariffa* L.

True Roselle is *Hibiscus sabdariffa* L. (family Malvaceae) and there are two main types. The more important economically is *H. sabdariffa* var. *altissima* Wester, an erect, sparsely-branched annual, which grows to about 16 feet high. It is cultivated for its jute-like fiber in India, the East Indies, Nigeria and to some extent in tropical America. The stems of this variety are green or red and the leaves are green, sometimes with red veins. Its flowers are yellow and calyxes red or green, non-fleshy, spiny, and not used for food.

The other distinct type of roselle, *H. sabdariffa* var. *sabdariffa*, embraces shorter, bushy forms which have been described as races: *bhagalpuriensi*, *intermedius*, *albus*, and *ruber*, all breeding true from seed. The first has green, red-streaked, inedible calyxes; the second and third have yellow-green edible calyxes and also yield fiber. We are dealing here primarily with the race *ruber* and its named cultivars with edible calyxes; secondarily, the green-fruited strains which have similar uses and which may belong to race *albus*.

Roselle is native from India to Malaysia, where it is commonly cultivated, and must have been carried at an early date to Africa. It has been widely distributed in the Tropics and Subtropics of both hemispheres, and in many areas of the West Indies and Central America has become naturalized.

In 1920, 3 new varieties of Roselle, having edible cultivars, were named: 'Rico,' 'Victor,' and 'Archer.'

Production
Roselle succeeds best in tropical and subtropical regions from sea-level up to 3,000 feet, with a rainfall of about 72 inches during the growing season. Where rainfall is inadequate, irrigation has given good results. It can be grown as a summer crop in temperate regions.

Seedlings may be raised in nursery beds and transplanted when 3 to 4 inches high, but seeds are usually set directly in the field, 4 to 6 to a hill, the hills 3 to 6 feet apart in rows 5 to 10 feet apart. When 2 or 3 leaves have developed, the seedlings are thinned out by 50%. If grown mainly for herbage, the seed can be sown as early as March, and no early thinning is done.

- . . . -

**ObImpact of Production System and Cultivar on
Yields of Roselle (*Hybiscus sabdariffa* L.)
Leaves and Calyxes**

❖ Conclusions

- ▶ Earlier planting may produce a marketable quantity of calyxes for additional markets, but also needs verification



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