

Progress Report to the Southern Region Small Fruits Consortium

Title: Southern Region Strawberry Variety Testing Program

Research Report SRSFC Project 2013-01

Principle Investigator:

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Objectives:

- 1. Evaluate NCSU strawberry genetics on research stations and/or producers' farms in 3 geographic regions of the SRSFC (Virginia, North Carolina and South Carolina) to expedite the release and or introduction of commercially competitive strawberry cultivars.**
- 2. Extend research developments to university specialists, extension agents and industry members through a regional plant performance publication.**

Description of activities and methods and materials:

Research Station tests were established in 4 NC locations; Upper Mountain (UMRS), Laurel Springs, NC; Piedmont (PRS), Salisbury, NC, Central Crops (CCRS), Clayton, NC and Horticultural Crops (HCRS), Castle Hayne, NC. Trials were planted in a randomized complete block design with 3 replications and 20 plants per plot. Additional replicated tests were established on grower farms in Virginia (Flanagan Farm, Virginia Beach; Lily Farm, Chesapeake and Westmoreland Farm, Colonial Beach). Due to anthracnose contamination in several of the NCSU selections, it was determined that only commercial cultivars would be established on producer sites to minimize risk of disease spread. On-farm trials were planted in a randomized complete block design with 3 replications and 20 plant plots. Extension agents (Roy Flanagan, Virginia Beach and Stephanie Romelczyk, Westmoreland County) and Jayesh Samtani (VT small fruits specialist) oversaw planting and will manage the spring harvest and other data collection procedures. Data loggers were placed in all testing locations to record field temperature over the season.

Land preparation and bedding followed commercial recommendations. Briefly, 60 lb of nitrogen per acre was broadcasted preplant, land was bed fumigated (except for Westmoreland, no fumigation) and beds covered with black VIF plastic. Before planting, annual rye grass was broadcasted to aid in soil erosion control. Overhead irrigation was provided for the first week during plant establishment. Entries included commercial cultivars and advanced NCSU selections (selections only established on research station

trials). Commercial cultivars were procured as tips from Norton Creek Farm (Cashiers, NC) and tips of the NCSU selections were propagated from mother plants at PRS during the summer of 2013. Plugs were produced at PRS using 50 cell trays (East Jordan Plastics, East Jordan, MI) and mist irrigated for approximately 2.5 weeks. Newly rooted plugs were hand watered without fertilizer during week 3. Fertigation began on week 3 and consisted of 50ppm of nitrogen derived from 15-5-15 at each daily watering. Prior to field transplanting, trays were drenched with a 200ppm N solution. See table 1 for a listing of the genotypes established at each location. Note- three additional observational sites were established on grower's farms (Gretna, VA and China Grove, NC) and at a local high school (South Rowan, China Grove, NC) using the commercial cultivars listed below. Data collection will commence in the spring of 2014.

Impacts to date:

A collaborative network of research and extension personnel and growers has been established to facilitate productive relationships for technology transfer. The new small fruit specialist at VT, Jayesh Samtani, has been incorporated into our network and the project is providing him a platform to increase collaborative connectivity and familiarization with regional research programs and industry challenges/opportunities.

These activities have been leveraged for additional funding to expand the work flow to include a comprehensive phytochemical and postharvest evaluation using these sites as the platform. If funded, we plan to model fruit quality characteristics and postharvest longevity as a function of environmental parameters across all locations and continue work through the 2016 season. The funding is being requested from the collaborative CALS (NCSU and VT) enrichment programs.

Table 1. Strawberry genotypes established in the fall of 2013 across locations.

Genotype	UMRS	PRS	CCRS	HCRS	VA
NCH10-041	x	x	x	x	
NCS10-005	x			x	
NCS10-013	x	x	x		
NCS10-030	x	x		x	
NCS10-032	x	x	x	x	
NCS10-038	x	x	x	x	
NCS10-043	x	x	x	x	
NCS10-053	x	x	x	x	
NCS10-056		x	x		
NCS10-088	x	x		x	
NCS10-103	x	x	x		
NCS10-109		x			
NCS10-126		x			
NCS10-132	x	x	x		
NCS10-156	x	x	x	x	
NCST10-032	x	x	x		
NCST10-056		x	x		
NCST10-79	x	x	x	x	
Chandler	x	x	x	x	x
Camarosa	x	x	x	x	x
Benicia	x	x	x	x	x
Camino Real	x	x	x		x
Albion	x	x	x	x	x
San Andreas	x	x	x	x	x
Festival	x	x	x	x	x
Sweet Charlie	x	x	x	x	x
Winter Star	x	x	x	x	x
Radiance	x	x	x	x	x
Treasure	x	x	x	x	x
Planting Date	9/17	9/25	10/15	10/16	*
Total	25	28	24	20	11

* Planting dates for the VA tests: Colonial Beach 9/27, Virginia Beach 9/29, Chesapeake 10/3