

Title: Strawberry Plasticulture Variety Trial

Progress Report

SRSFC Project Number: 2019 R-01

Research Proposal

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Objective: 1) To assess recent released June-bearing strawberry varieties and disseminate the findings to potential growers in the Southeastern U.S.

Justification and Description:

Most commercial strawberry growers in the southeast utilize an annual plasticulture production cycle. Growers, either large or small acreage, have been planting ‘Chandler’, ‘Camarosa’ or ‘Sweet Charlie’, which have been the standard cultivar recommendations from Extension for the Southeast (outside of Florida) for many years. ‘Sweet Charlie’ was released in 1992 and is recommended for u-pick operations and is not considered for large scale commercial operations due to soft fruit (Whitaker et al., 2018). ‘Chandler’ is quite cold hardy and has been popular throughout the southeast for many years. However, ‘Camarosa’ has become the variety of choice by growers, especially in the coastal plains of GA, NC, and SC; it is known for its tolerance to rains and suitable storability (Poling, 2012). Though these three strawberry varieties have proven

acceptability in yield and quality, there are a number of untested June-bearing varieties with potential for southeastern production that have become widely grown in California and Florida.

Strawberry flowering is photoperiod sensitive. Facultative short day or June-bearing varieties are grown in the Coastal Plain to minimize crop reduction from heat. High temperatures soften fruit, which dramatically reduces storability and acceptability as a fresh market product. Day-neutral and long-day varieties would not be acceptable in the Coastal Plain due to the extended season brought on by late flowering, which would delay harvest and expose the fruit to temperatures in excess of 85 °F. Both the University of Florida and University of California – Davis have in the last ten years or more released a number of June-bearing varieties that have yet to be evaluated under Coastal Plain growing conditions.

In Lowndes County, GA, a grower collaborator opened their farm to a strawberry variety trial. We have planted 13 varieties (Table 1), of which 4 are day-neutral everbearing ('Albion', Florida Beauty', Florida Brilliance' and 'Cabrillo) and 9 short-day or June-bearing varieties ('Calinda', 'Camarosa', 'Camino Real', 'Strawberry Festival', 'Fonteras', 'Merced', 'Florida Radiance', 'Ruby June', and 'Sensation'). The cultivation has been based on plasticulture production (Poling, 2001).

Experimental Plan:

Materials

Nine June-bearing cultivars and 4 day-neutral varieties as plugs have been established in Lowndes County, GA (Table 1). The day neutral varieties were added to the trial at the request of strawberry growers in the area. The plants were received from two sources: EZ Grow Farms, Langton, Ontario, CA. and Cottle Strawberry Nursery, Inc. Faison, NC. The plants were received from EZ Grow mid-September 2019 and stored in 34° F and 85% RH until planting. The plants received from Cottle Farms were in early October 2019 and were stored with the other strawberry plugs.

Treatments

Due to the drought, the plants were not established until November 2, 2019. The grower was unable to form beds until sufficient rain. Some of the plugs were not viable at planting and there has been further dieback since planting. We have been monitoring mortality and will adjust replications for the trial. The planting was established on 5 ft centers with 28 inch width beds that were planted in double rows at 14 inches between plants and 12 inches between rows. All farming practices are being conducted in accordance with Chapter 16 of the Vegetable Production Handbook of Florida 'Strawberry Production' (Whitaker et al., 2018). The beds are drip irrigated and frost protection will provided via row covers.

Analyses

We are anticipating first harvest by mid-February. At this time we will begin to evaluate the fruit for yield, fruit quality, and storability.

Table 1 Strawberry varieties selected for evaluation in Lowndes County, GA. Listed are the variety, photoperiod, and breeding program origin. Photoperiod are noted as either day-neutral (everbearing) or short-day (June-bearing) for flower induction.

2019-20 Strawberry Variety Trial Sections		
Variety	Season	Origin
Albion	Day-Neutral	University of California
Florida Beauty	Weak Day-Neutral	University of Florida
Florida Brilliance	Early production: photoperiod not noted	University of Florida
Cabrillo	Day-Neutral	University of California
Calinda	Short-Day (June bearing)	Netherlands, Fresh Forward Breeding
Camarosa	Short-Day (June bearing)	University of California
Camino Real	Short-Day (June bearing)	University of California
Strawberry Festival	Short-Day (June bearing)	Florida Foundation Seed Producers, Inc.
Fonteras	Short-Day (June bearing)	University of California
Merced	Short-Day (June bearing)	University of California
Florida Radiance	Short-Day with long day characteristics noted	University of Florida
Ruby June	Short-Day with long day characteristics noted	Lassen Canyon Nursery, Inc.
Sensation	Short-Day adapted to plasticulture growing systems	University of Florida

References:

- Poling, E. B. 2001. An introductory guide to strawberry plasticulture. Southern Region Small Fruit Consortium. <http://www.smallfruits.org/> (accessed 19 Dec. 2014)
- Whitaker, V.M., N.S. Boyd, N.A. Peres, J.W. Noling, and J. Renkema. 2018. Chapter 16. Strawberry Production. University of Florida IFAS Extension. <http://edis.ifas.ufl.edu/pdf/CV/CV13400.pdf> (Accessed 17 Oct. 2018)