UNIVERSITY OF FLORIDA EXTENSION
Institute of Food and Agricultural Sciences

Berry Times

IFAS

Volume II, Issue 6 June 2002

Performance of UF strawberry cultivars planted on three dates in October

Craig K. Chandler and James C. Sumler, Jr.

A main goal of the UF/IFAS strawberry breeding program has been to develop cultivars that produce relatively high yields of marketable fruit during the period from late November to the end of February – compared to cultivars from other North American breeding programs. All the UF/IFAS cultivars, starting with 'Florida Belle' (released in 1975) have this capability. Acceptable total season yields have been obtained from 'Florida Belle', 'Dover', and 'Sweet Charlie' when these cultivars have been planted anytime during the month of October, but past research at GCREC-Dover has shown that the highest early season yields are obtained when these cultivars are planted in early October. Based on our experience with these older cultivars, we have been suggesting that the new UF/IFAS cultivars -- 'Earlibrite', 'Strawberry Festival', and 'Carmine' (FL 95-256) – be planted in early October. "Early October" is not very specific, so to refine our planting-date recommendations, we decided to conduct a trail in which cultivars are planted on several dates, spaced a week apart, starting October 1.

The new UF/IFAS cultivars, as well as 97-39 and 'Sweet Charlie', were planted on Oct. 2nd, 9th, and 17th, 2001. 'Sweet Charlie' plants were included in these plantings as the standard early season cultivar.

Dover variety trials

Plug plants from a high elevation nursery in North Carolina were used for the Oct. 2nd planting (except for the FL 97-39, which were "home-grown" bare-root plants). Bare-root plants were used for the Oct. 9th and 17th plantings. All bare-root plants, except for FL 97-39, came from the same North Carolina source that supplied the plugs. Plants were spaced 15 inches (38 cm) apart within the row. Ripe fruit were harvested, graded, counted, and weighed twice weekly from mid November till the end of February.

Although direct statistical comparisons cannot be made between the three planting dates, there does appear to be a trend: the later the planting date, the lower the November-February yield (Table 1). November/December yields appear to be higher for plants set on Oct. 9th than on Oct. 2nd. This difference may be partially due to the fact that bare-root transplants were used on Oct. 9th and they probably had larger crowns than the plug plants used on Oct. 2nd. Conversely, yields in January were higher for the October 2nd planting than the October 9th planting. We suspect that for early ripening cultivars like 'Sweet Charlie', plug plants may produce lower November/December yields, but higher January yields than bare-root plants. If true, then a grower could include both types of plants in his farming operation and smooth out the peaks in marketable yield from November-January. (A future newsletter article will focus on potential ways to better manage fruit production peaks on a farm basis.)

A monthly newsletter of the University of Florida Institute of Food and Agricultural Sciences, Gulf Coast Research and Education Center, and Florida Cooperative Extension Service.
Gulf Coast Research and Education Center
13138 Lewis Gallagher Road, Dover, FL 33527
(813) 744-6630 SC512-1160
Website: http//strawberry.ifas.ufl.edu
Editors: Dan Legard (legard@ufl.edu) & Craig Chandler (ckc@.ufl.edu); Design, Layout & Distribution: Christine Manley (cmanley@ufl.edu); Director: Jack Rechcigl

The new cultivars out-yielded 'Sweet Charlie' in November/December, irrespective of planting date, but differences in total yield were generally not detected between the cultivars in these trials. 'Earlibrite' produced relatively large fruit, regardless of planting date (having an average fruit weight greater than 20 grams), while the other entries had average fruit weights between 16.4 and 19.1 grams (Table 1).

Based on the data presented in Table 1, it appears the new UF/IFAS strawberry cultivars should be planted before October 10th to obtain the highest possible November-February yield. But because year-to-year variation is common with these types of results, several years of data will be collected and examined before specific recommendations are made.

Table 1. Performance of UF strawberry cultivars planted on three dates during the 2001-02 season[z] at Dover

Planting date/ Cultivar	Marketable yield (grams/plant)[y]				Average fruit weight (grams)
	Nov./Dec.	Jan.	Feb.	Total	
October 2					
Carmine	180 ab [w]	108 b	164 b	457 a	16.8 bc
S. Charlie	82 c	171 a	204 ab	457 a	17.0 bc
Earlibrite	177 b	146 ab	168 b	491 a	20.1 a
S. Festival	151 b	140 ab	212 ab	503 a	16.5 c
FL 97-39	219 a	118 ab	232 a	536 a	18.1 b
October 9					
Carmine	232 a	62 ab	204 bc	499 a	17.0 c
S. Charlie	102 d	92 a	166 c	360 b	16.4 c
Earlibrite	205 ab	33 b	201 bc	439 ab	21.1 a
S. Festival	163 bc	61 b	221 b	444 ab	17.2 c
FL 97-39	159 c	93 a	277 a	453 ab	19.1 b
October 17					
Carmine	106 b	72 bc	152 b	330 a	16.7 c
S. Charlie	64 c	92 ab	110 c	265 a	17.1 bc
Earlibrite	163 a	55 cd	170 ab	388 a	21.8 a
S. Festival	112 b	100 a	198 a	410 a	17.9 b
FL 97-39	85 bc	37 d	166 ab	397 a	17.8 bc

[z] All transplants, except FL 97-39, were obtained from a commercial nursery in North Carolina. Those planted on 2 Oct were plug transplants (except for the plants of FL 97-39, which were bare-root transplants), while those planted on 7 Oct and 17 Oct were bare-root transplants.

[y] At a plant density of 17,424 plants per acre, 1 gram per plant = 38.4 pounds per acre.

[x] Average fruit weight was determined by dividing total marketable fruit yield per plot by total marketable fruit number per plot.

[w] Means based on four replications. Mean separation within columns and planting dates by Fisher's protected LSD test, $P \leq 0.05$. (Within columns and planting dates, means followed by the same letter are not significantly different.)

FL 97-39 were "home-grown" bare-root plants

Spotlight on Diagnosis

James Mertely

Last season, numerous strawberry growers in California, Florida, and Louisiana experienced establishment problems caused by *Colletotrichum acutatum*, one of the anthracnose fungi. In the UF Strawberry Diagnostic Lab, this pathogen was detected on at least 75 of the 180 total samples submitted last season. Most samples showed signs of root necrosis, the principal cause of establishment problems, but slow decline and anthracnose fruit rot were also diagnosed. At least one anthracnose-infected sample was associated with each of the nursery sources used by Florida strawberry growers. However, it would not be accurate to suggest that all the nurseries sold anthracnose-infected transplants last season. Disease can spread from contaminated to healthy fields, and this may account for some positive samples, especially later in the season. It also looks like the foundation planting stock from the western US was also probably contaminated by *C. acutatum*. Nurserymen everywhere are now keenly aware of the situation, and they are working with University and private researchers to improve methods to help manage this pathogen in the nursery. These efforts should help to minimize problems caused by *C. acutatum* in the future.

IFAS pesticide revision now on-line for 2002-3003 planning

James F. Price

The most recent revision of ENY-657, *Insecticides, Miticides, and Molluskicides for Management of Insect, Mite, Snail, and Slug Pests of Florida Strawberry*, is now available online through University of Florida EDIS. It can be accessed for planning next season's culture through the URL: http://edis.ifas.ufl.edu. Once there click on "Pest Management Guides", then "Insect Management Guides", then "Vegetables", then the above publication. This information can also be found on our website at http://strawberry.ifas.ufl.edu/insectrecommendations.htm.

ENY-657 lists the 27 active ingredients available for Florida strawberry farmers to control insects, mites, snails and slugs important in their crop. A list of the commonly available commercial products along with reentry and post harvest intervals that must be observed is provided for each active ingredient. There is also listing of the pests controlled by each of the products. Acramite® for spider mite control was registered too late to be included in this revision, but is available.

Once growers know the pests to expect next season (largely aphids, lepidopterous larvae, sap beetles, small fruit flies, spider mites, thrips) they can select and place orders for the desired pesticides presented in the publication. Planning now with ENY-657 can better prepare growers for problems that will occur during the season.

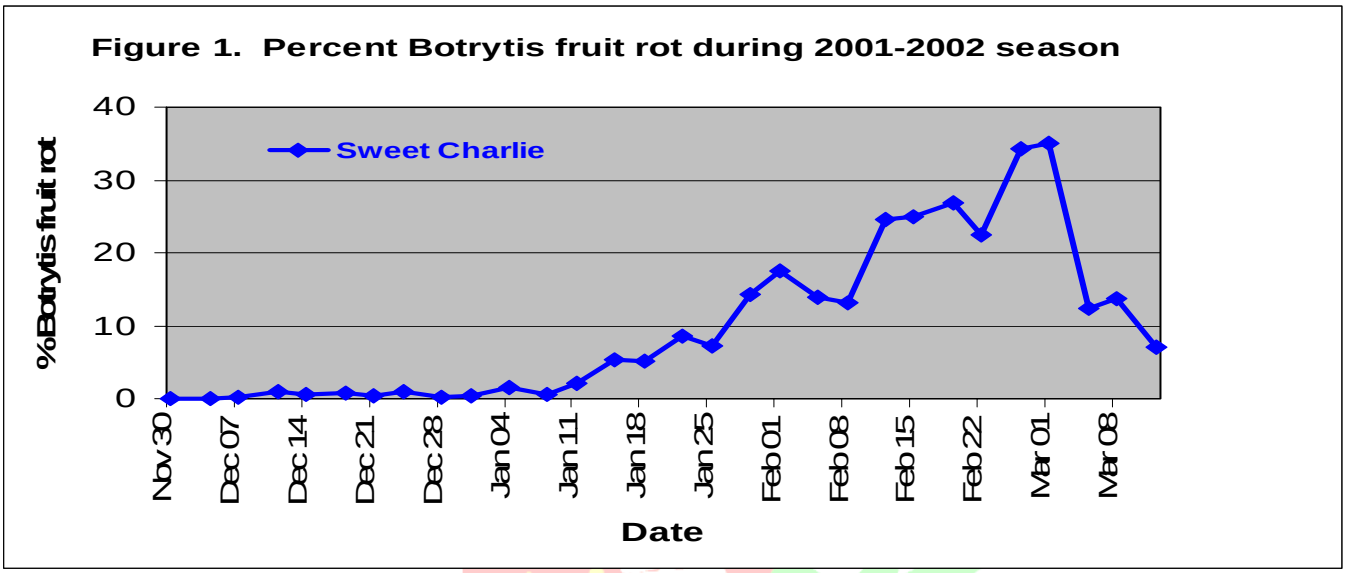
Results of the 2001-2002 Botrytis fruit rot fungicide efficacy trial

Dan Legard, Steve MacKenzie and James Mertely

This month we will review the results of our Botrytis fruit rot fungicide efficacy trial. We conduct these trials every season to evaluate new fungicides and compare them to fungicides that growers currently use. Although we had a very unusual season with record high temperatures in January (http://fawn.ifas.ufl.edu) and a delay in the peak harvest period of several weeks for most cultivars, there was a period during the season when conditions were ideal for an epidemic of Botrytis fruit rot. The incidence of Botrytis began to increase in January, was most severe during mid to late February, and declined during early March (Figure 1). This pattern is typical for Botrytis epidemics in Florida, repeating itself with slight variations every season.

The fungicides that best controlled Botrytis in our study included the labeled products Switch®, Elevate®, Captan® and Thiram®. However, a couple new products looked promising. These were a strobilurin (same chemical class as Quadris®) from BASF (BAS 516) and a new product from Arvesta (formally Tomen Agro) that combines Captan® and Elevate®. The best control programs in our study combined weekly applications of a protectant like Captan or Thiram with four bloom applications of Switch® or Elevate®. The bloom applications were applied weekly from January 23 to February 13, protecting the flowers from infection when disease pressure was highest. The best control programs in our study combined weekly applications of a protectant like Captan or Thiram with four bloom applications of Switch® or Elevate®. The bloom applications were applied weekly from January 23 to February 13, protecting the flowers from infection when disease pressure was highest.

More information about the control of Botrytis fruit rot and the scheduling of bloom applications can be found on our website at: (http://strawberry.ifas.ufl.edu/prodguidedis.htm).



Center Update

Christine Manley

Over the next few months, the facilities at GCREC-Dover will be undergoing several renovations. The work is being paid for by funds the Florida legislature generously appropriated to renovate the strawberry lab. New growth chambers are now being installed in a new equipment room. We will also be repairing the air handlers in both buildings. One of the most important projects is the field renovation, in which we will change the field layout to increase the cultivated area and install a new computer controlled irrigation system. A new climate controlled greenhouse is also in the planning stage. Our new and improved research facilities will allow our faculty and staff to better serve the needs of the strawberry industry.

On a personal note, the faculty and staff would like to congratulate Dr. John Duval on his recent nuptials. Dr. Duval and his lovely wife, Jennifer, were wed in Key West May 20. *Best wishes to the new bride and groom.*