

Nitrogen Fertilization Recommendations for ‘Florida Brilliance’

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Summary

‘Florida Brilliance’ is characterized by a robust growth habit with long stems and improved adaptability to the early planting window in Florida. Because of these traits, we recommend to plant this cultivar between September 23 and October 10 using standard plant spacing (e.g. 15”). ‘Florida Brilliance’ does not require as much nitrogen (N) as ‘Florida Radiance’ during the establishment. Therefore, the initial high N fertilization (e.g. 2 lb/acre/d) should not be used longer than 3 weeks. Excessive N fertilization will result in unbalanced vegetative growth that may limit fruit yields and make harvesting and spraying more difficult.

Nitrogen Fertilization

Strawberry growers typically apply N at high doses of 2-3 lbs/acre/d during establishment and gradually lower the rate to 0.75-1 lb/acre/d. The initial high-dose fertilization can be beneficial for improving the establishment of strawberry transplants, but this practice must be tailored for each cultivar based on its growth characteristics and nutrient requirements.

Methods

Fertilization treatments described in Table 1 were tested for ‘Florida Brilliance’ during the 2017–2018 season at GCREC. Bare-root transplants were transplanted on Sep. 28, 2017. Commercial production and pest management practices were followed. Harvests were performed 30 times between Nov. 2, 2017 and Feb. 26, 2018.

Table 1. Nitrogen fertilization programs tested during the 2017-2018 season at GCREC.

Duration of 2 lb/acre/d	Daily N application rate (lb/acre/d)					Total N rate (lb/acre)
	Week 1–2	Week 3–5	Week 6–8	Week 9–11	Week 12–22	
0 wk	0	1	1	1	1	140
3 wk	0	2	1	1	1	161
6 wk	0	2	2	1	1	182
9 wk	0	2	2	2	1	203

Results

‘Florida Brilliance’ vs. ‘Florida Radiance’

When planted earlier (Sep. 28), ‘Florida Brilliance’ produced a 76% higher Nov-Dec yield and an 11% higher total season yield than ‘Florida Radiance’ (Table 2). When planted late (Oct. 12), however, ‘Florida Brilliance’ produced an only 12% higher Nov-Dec yield and a 5% lower total season yield than ‘Florida Radiance’. The average fruit size of ‘Florida Brilliance’ was 3% to 8% larger compared to ‘Florida Radiance’.

N fertilization

Increasing the initial N rate from 1 to 2 lb/acre/d for 3 weeks increased November yield by 27%, December yield by 4%, January yield by 47%, February yield by 22%, and the total season yield by 27% (Table 3). Extending the duration of the initial high N rate to 6 to 9 weeks had a negative impact on yields throughout the season. Small fruit yields were minimally affected by N treatments (Table 4). There was a tendency for thrips damage to be reduced by extending the duration of the initial high N rate, although it was not statistically significant (Table 5).

Table 2. Yield performance of ‘Florida Radiance’ and ‘Florida Brilliance’ in the 2017-2018 trial at GCREC.

	Florida Radiance	Florida Brilliance
Early planting (Sep. 28)		
Nov-Dec yield (# of 8-lb flats/acre)	354	623
Total yield (# of 8-lb flats/acre)	3101	3452
Fruit set (no./plant)	26.2	26.9
Average fruit size (g/fruit)	24.7	26.8
% of marketable yield in total yield	89.3	86.6
Late planting (Oct. 12)		
Nov-Dec yield (# of 8-lb flats/acre)	401	448
Total yield (# of 8-lb flats/acre)	2646	2525
Fruit set (no./plant)	23.0	21.4
Average fruit size (g/fruit)	23.9	24.6
% of marketable yield in total yield	90.1	89.0

In-row spacing was 15" for both cultivars.

Table 3. Marketable yield of ‘Florida Brilliance’ strawberry as affected by the duration of initial high N fertilization.

Duration of 2 lb N	Marketable yield (# of 8-lb flat/acre)				
	Nov	Dec	Jan	Feb	Total
0 wk	183	422	896 b	1510	3011
3 wk	232	438	1313 a	1843	3827
6 wk	178	452	1249 ab	1649	3528
9 wk	201	385	1233 ab	1622	3441

Table 4. Small fruit yield of ‘Florida Brilliance’ strawberry as affected by the duration of initial high N fertilization.

Duration of 2 lb N	Small fruit yield (% total yield, no./no.)				
	Nov	Dec	Jan	Feb	Total
0 wk	10.9	6.5	2.4	0.0	3.2
3 wk	17.9	6.5	3.0	0.2	4.2
6 wk	9.2	5.6	1.6	0.2	2.5
9 wk	15.0	7.0	2.0	0.2	3.7

Small fruit yield = <10 g/fruit (unmarketable)

Table 5. Thrips damage of ‘Florida Brilliance’ strawberry as affected by the duration of initial high N fertilization.

Duration of 2 lb N	Thrips damage (% total yield, no./no.)				
	Nov	Dec	Jan	Feb	Total
0 wk	11.5	7.7	4.7	2.8	5.4
3 wk	11.3	4.5	2.6	0.7	3.2
6 wk	16.5	4.3	2.6	0.5	3.6
9 wk	8.9	2.8	2.2	2.6	3.4

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