

Table S1. Summary of Illumina sequencing of parental lines and black pod (HB) and white pod (LB) bulks built from an F₂ population in 2018 in Marianna, FL.

Sample	Pod Coloration	Number of Reads	Total Bases	Tifrunner V2 Genome Coverage (%)	Mean Depth
Black Pod	Black	202,340,334	30,553,390,434	87.84	21.06
LB ^a	Normal	89,384,589	13,497,072,939	85.81	11.54
HB ^a	Black	101,305,032	15,297,059,832	85.16	10.62
FloRun '331'	Normal	152,472,126	23,023,291,026	87.47	16.34

^a LB: Low Bulk; HB: High Bulk

Table S2. Genomic regions identified to be linked with the black pod trait based on Δ SNP and G' statistics.

Reference Genome	Chromosome	Genomic Region (Mb)	Length (Mb)	Peak Δ SNP	Peak Δ SNP Position	Max G'	Max G' Position	Mean G'	Mean P-value	Mean Q-value
Black Pods	B10	127.40 - 141.15	13.75	-0.5317	133222284	4.1196	133092494	3.6377	<.0001	0.0026
FloRun™ '331'	B10	130.07 - 135.44	5.36	0.5234	133222284	4.2537	132719069	4.0789	<.0001	0.0069
Overlapped	B10	130.07 - 135.44	5.36							

Table S3. F2 and F3 plant list with phenotype and genotype based on field pod coloration and genotyping using KASP markers.

Plant ID	Cross	Pod Coloration		Allelic discrimination		
		F ₂	F _{2:3}	Arahy.P2U024	Arahy.L9QF8B	Arahy.XDN0DO
9	FloRun '331' x BP	W	W ^a	UD ^a	UD	W
17	FloRun '331' x BP	W	W	W	W	W
20	FloRun '331' x BP	B ^a	B	W/B ^a	W	W/B
21	FloRun '331' x BP	B	B	B	W	B
26	FloRun '331' x BP	B	B	-	W	W
27	FloRun '331' x BP	W	W	-	W	W
34	FloRun '331' x BP	W	W	W	W	W
35	FloRun '331' x BP	W	W	W	W	W
51	FloRun '331' x BP	B	B	W/B	W	B
55	FloRun '331' x BP	B	B	B	W	B
57	FloRun '331' x BP	W	W	-	W	B
58	FloRun '331' x BP	W	-	-	W	B
70	FloRun '331' x BP	B	B	B	W	B
71	FloRun '331' x BP	W	W	UD	-	-
76	FloRun '331' x BP	B	B	B	W	B
78	FloRun '331' x BP	B	B	-	W	W/B
80	FloRun '331' x BP	B	B	W/B	W	W/B
86	FloRun '331' x BP	W	W	W	W	W
87	FloRun '331' x BP	B	B	B	W	B
92	FloRun '331' x BP	W	W	-	W	W
202	FloRun '331' x BP	W	W	-	UD	UD
204	FloRun '331' x BP	W	W	W	W	W
208	FloRun '331' x BP	W	W	UD	UD	UD
209	FloRun '331' x BP	B	B	B	W	B
211	FloRun '331' x BP	B	B	B	W	B
213	FloRun '331' x BP	W	W	-	W	UD
218	FloRun '331' x BP	B	B	-	UD	UD
219	FloRun '331' x BP	W	W	W/B	-	-
220	FloRun '331' x BP	B	B	-	UD	W
222	FloRun '331' x BP	W	W	W	W	W
225	FloRun '331' x BP	W	W	W	W	W
231	FloRun '331' x BP	B	B	B	W	UD
235	FloRun '331' x BP	W	W	UD	-	-
238	FloRun '331' x BP	B	B	B	W	B
P1	FloRun '331'	W	W	W	W	W
P2	Black Pods	B	B	B	UD	B

^a: B= black pods; W= normal pods; W/B= segregating plants; UD= Undetermined by KASP marker