



Freezegreen

A New Southernpea
for Processing

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Information contained herein is available to all regardless of race, color, or national origin.

FREEZEGREEN, A New Southernpea for Processing

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FREEZEGREEN', released by the Auburn University Agricultural Experiment Station in 1978 is a new type of southernpea with a green seedcoat. It was released to fill a need expressed by the vegetable processing industry, especially those who pack frozen southernpeas, for a variety which maintains its green color to maturity, through processing and into the frozen pack. Such a product should have greater consumer appeal in the frozen pack and more intense green color than other varieties (hence, the name 'Freezegreen'). There is some indication that the enhancement of green color would have appeal at the fresh stage also.

ORIGIN

'Freezegreen' originated from a single dry seed with a green seedcoat which appeared in a bulked seed lot of the white seeded breeding line Ala. 963.8. Ala. 963.8 is derived from the breeding program of Dr. C. L. Isbell and it is of uncertain origin. It is thought that the parental background included 'Lady' and 'Conch'. The persistent green color of its seed is due to a green seedcoat which has been found to be controlled by a single recessive gene, *gt* (= *green testa*).

DESCRIPTION

The plant has a low bushy growth habit with spreading basal branches without terminal vines. Pods are straight to slightly curved, approximately 6 inches long, and are produced level

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with or above the foliage. Pod color ranges from green with a tinge of purple to solid purple when at the mature green stage. Seeds are small, globose in shape and very easily shelled from the pod. The dry seedcoat color matches light olive (10 y 5/5) in the Nickerson color chart.

Machine harvest tests conducted cooperatively with a processor indicate that 'Freezegreen' is adapted to being harvested by green pea combine. Shellout was good and color of the machine-shelled peas was uniformly green and rated excellent.

Observation of the growth habit and other plant characteristics of 'Freezegreen' indicates that the green seedcoat character is due to the mutation of a single gene (1) and that other characters of the original line, Ala. 963.8, remain unchanged. Field screening tests indicate that 'Freezegreen' has the same level of cowpea curculio resistance as Ala. 963.8. The plant maintains its foliage throughout the growing season indicating tolerance to most of the disease pests that are of serious concern. Ala. 963.8 has been shown to have *Cercospora* leaf spot resistance (2) and observation indicates 'Freezegreen' is also resistant. Neither *Fusarium* nor other root rot diseases appear to cause serious problems on 'Freezegreen' although it has not been screened for resistance to these organisms. However, field observations indicate that it is susceptible to root knot nematodes.

'Freezegreen' has one serious disease problem. It is highly susceptible to a severe strain of mosaic virus, thought to be either bean yellow mosaic or blackeye cowpea mosaic. This should not pose a serious problem for commercial producers who grow the crop in the spring on extensive acreage and usually follow stringent insect vector control measures. It would, however, be a more serious problem for fall production.

YIELD DATA

'Freezegreen' is productive and has a good potential for producing a product with the quality of a cream type southern pea. Shelled yields of approximately 1,800 to 3,300 pounds per acre in multiple harvest trials at Auburn approximates yields of the best commercial cultivars and are better than most cultivars. Yield in once over harvest trials ranged from approximately 1,500 to 2,700 pounds per acre and this compared well with other breeding lines and cultivars in the trial, see table. The release of this green seedcoat cultivar will

benefit not only the frozen vegetable industry and other processors, but also home gardeners. It is thought to be less desirable for the fresh market due to a very short shelf life at the mature green stage. Many of its characteristics appeal to gardeners. It is a 'Lady' type with a purple hull. It is easy to hand harvest. Unlike 'Lady' it is very easy to shell and produces a somewhat larger seed. The enhanced green color should have appeal on the table. It produces over a long period of time and may be harvested repeatedly.

YIELD OF ADVANCED BREEDING LINES AND VARIETIES OF SOUTHERN PEAS,
1972-77

Breeding line or variety	Yield (lb/acre)		Shell-out (Pct.)	Days to harvest	No. of harvests	Days harvested
	In-pod	shelled				
1972						
Multiple harvest						
Ala. 963.8G1-4 (Freezegreen)	5,866	2,874	49	71	6	18
Av. of Southern Cooperative replicated trial at Auburn	3,549	1,987	56	65	7	17
Once-over						
Ala. 963.8G1-4 (Freezegreen)	3,999	1,799	45	83	1	1
Av. of Southern Cooperative replicated trial at Auburn	2,434	1,217	50	70	1	1
1973						
Multiple Harvest						
Ala. 963.8G1-4 (obser.) (Freezegreen)	5,387	2,478	46	60	5	15
Av. of Southern Cooperative replicated trial, Southwide	4,225	2,408	57	62	5	13
Av. of Southern Cooperative replicated trial, at Auburn	6,010	3,005	50	61	5	15
Once-over						
Ala. 963.8G1-4 (obser.) (Freezegreen)	3,453	2,003	58	71	1	1
Av. of Southern Cooperative replicated trial, Auburn and 4 locations in Arkansas	4,928	2,654	54	68	1	1
Av. of Southern Cooperative replicated trial, at Auburn	4,130	2,561	62	68	1	1

(Continued)

YIELD OF ADVANCED BREEDING LINES AND VARIETIES OF SOUTHERNPEAS,
(Continued) 1972-77

Breeding line or variety	Yield (lb/acre)		Shell-out (Pct.)	Days to harvest	No. of harvests	Days harvested
	In-pod	shelled				
1974						
Multiple harvest						
Ala. 963.8G1-4 (Freezegreen)	5,584	3,350	60	67	4	12
Mississippi Silver	6,354	3,749	59	67	4	12
Av. of Southern Cooperative replicated trial, Southwide	4,660	2,330	50	62	4	14
Av. of Southern Cooperative replicated trial, Auburn	6,537	3,007	46	62	5	17
Once-over						
Ala. 963.8G1-4 (Freezegreen)	4,166	2,708	65	73	1	1
Mississippi Silver	5,036	3,576	71	72	1	1
Av. of Southern Cooperative replicated trial, Auburn and 4 locations in Arkansas	4,437	2,029	46	68	1	1
Av. of Southern Cooperative replicated trial, Auburn	4,743	2,846	60	70	1	1
1976						
Multiple harvest						
Ala. 963.8G1-4 (Freezegreen)	4,562	2,281	50	75	7	18
Mississippi Silver	6,014	3,308	55	73	8	21
Pinkeye Purple Hull	6,096	2,926	48	73	7	20
Av. of Southern Cooperative replicated trial, Southwide	4,318	2,461	57	71	5	17
Av. of Southern Cooperative replicated trial, Auburn	5,030	2,515	50	71	9	23
Once-over						
Ala. 963.8G1-4 (Freezegreen)	3,329	1,498	45	80	1	1
Mississippi Silver	4,153	2,616	63	79	1	1
Pinkeye Purple Hull	4,748	2,611	55	77	1	1

(Continued)

YIELD OF ADVANCED BREEDING LINES AND VARIETIES OF SOUTHERN PEAS,
(Continued) 1972-77

Breeding line or variety	Yield (lb/acre)		Shell-out (Pct.)	Days to harvest	No. of harvests	Days harvested
	In-pod	shelled				
Av. of Southern Cooperative replicated trial, Ala., Ark., La., Tex.	2,526	1,238	49	72	1	1
Av. of Southern Cooperative replicated trial, Auburn	2,693	1,320	49	77	1	1
1977						
Multiple harvest						
Ala. 963.8G1-4 (Freezegreen)	3,575	1,859	52	63	4	12
Mississippi Silver	5,565	2,226	40	59	6	15
Pinkeye Purple Hull	4,287	2,144	50	54	8	20
Av. of Southern Cooperative replicated trial, Southwide	3,291	1,909	58	57	4	14
Av. of Southern Cooperative replicated trial, Auburn	4,117	2,100	51	56	7	18
Once-over						
Ala. 963.8G1-4 (Freezegreen)	4,250	1,998	47	69	1	1
Mississippi Silver	4,449	2,981	67	67	1	1
Pinkeye Purple Hull	2,931	1,407	48	62	1	1
Av. of Southern Cooperative replicated trial, Ala., Ark., Tex.	3,039	1,702	56	68	1	1
Av. of Southern Cooperative replicated trial, Auburn	3,373	1,855	55	64	1	1

SEED AVAILABILITY

Seed should be available from wholesale seed dealers in Alabama no later than 1980.

ACKNOWLEDGMENT

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LITERATURE CITED

- (1) Chambliss, O. L. 1974. Green Seedcoat: A Mutant in Southernpea of Value to the Processing Industry. *HortScience* 9:126.
- (2) Fery, R. L., P. D. Dukes, and F. P. Cuthbert, Jr. 1976. The Inheritance of Cercospora Leaf Spot Resistance in the Southernpea (*Vigna unguiculata* (L.) Walp.). *J. Amer. Soc. Hort. Sci.* 101:148-149.