

NEW UGA PECAN RELEASES



Dr. Patrick Conner
University of Georgia – Tifton Campus



THE UNIVERSITY OF GEORGIA
COLLEGE OF AGRICULTURAL &
ENVIRONMENTAL SCIENCES



University of Georgia Pecan Releases

Dr. Darrell Sparks

1. 'Byrd'
2. 'Morrill'
3. 'Cunard'
4. 'Treadwell'
5. 'Huffman'
6. 'Whiddon'
7. 'Tom'
8. 'Tanner'

Dr. Patrick Conner

1. 'Avalon'



History of 'Avalon'

- Ga. 00-7-75, selected from a cross between 'Gloria Grande' and 'Barton' made in year 2000.
- Selected for large nut size, good quality, and lack of scab.
- 'Avalon' topworked into Ponder Variety Grove in 2009. Wider testing began in 2012.



'Avalon' currently has excellent scab resistance.

Table 3. Pest resistance of pecan cultivars and selections in an **unsprayed** orchards over years 2012-2016.

Cultivar	# Trees	Leaf scab	Avg. nut scab	Max. nut scab	Black aphid damage
Avalon	3	1.0 c	1.0 c	1.2 c	2.5 bc
Cunard	1	3.3 ab	4.7 a	5.0 a	2.3 bc
Desirable	1	4.0 a	5.0 a	5.0 a	2.5 bc
Elliott	1	1.0 c	1.0 c	1.0 c	2.3 c
Gafford	1	1.0 c	1.0 c	1.0 c	2.0 c
McMillan	1	1.0 c	1.0 c	1.5 c	2.0 c
Pawnee	1	2.3 bc	5.0 a	5.0 a	2.8 abc
Stuart	1	2.5 bc	5.0 a	5.0 a	3.8 a
Sumner	2	2.1 bc	2.0 b	3.0 b	2.7 bc
Zinner	2	2.1 bc	4.5 a	4.5 a	3.4 ab
Sig.		0.001	0.001	0.001	0.007

Leaf Scab: 1=no scab, 2=slight, 3=moderate, 4=severe.

Nut Scab: 1=no scab, 2=slight, 3=moderate, 4=heavy, 5=severe-crop loss.

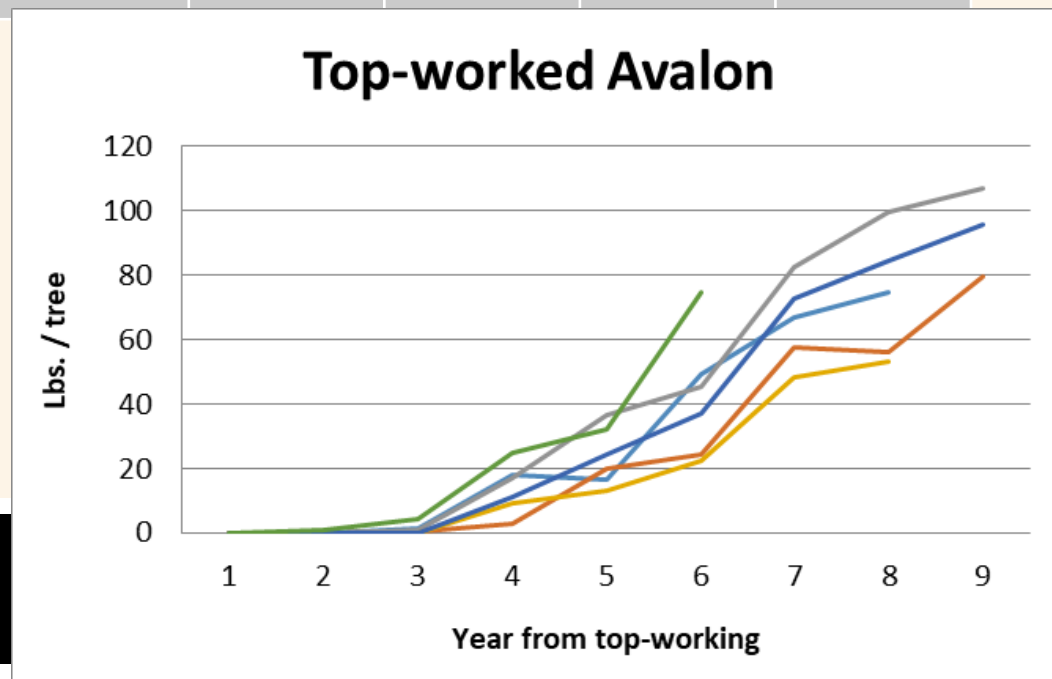
Black Aphid: 1=no scab, 2=slight, 3=moderate, 4=severe.



Table 6. In-shell nut yield (lbs. per tree) of pecan cultivars in Tifton, Ga. years 7-12 from planting (Years 4-9 from topworking for Avalon).

Cultivar	# Trees	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Avg.
Avalon	6	15 b	25 b ^y	46	67 b	79	94	48 ab
Byrd	5	42 a	46 a	50	95 a	60	53	58 a
Desirable	4	16 b	29 ab	30	36 c	50	50	35 c
Pawnee	3	16 b	19 b	57	12 c	83	70	41 bc
Gafford	4	17 b	40 ab	31	63 b	67	76	49 abc

'Avalon' nut yield.



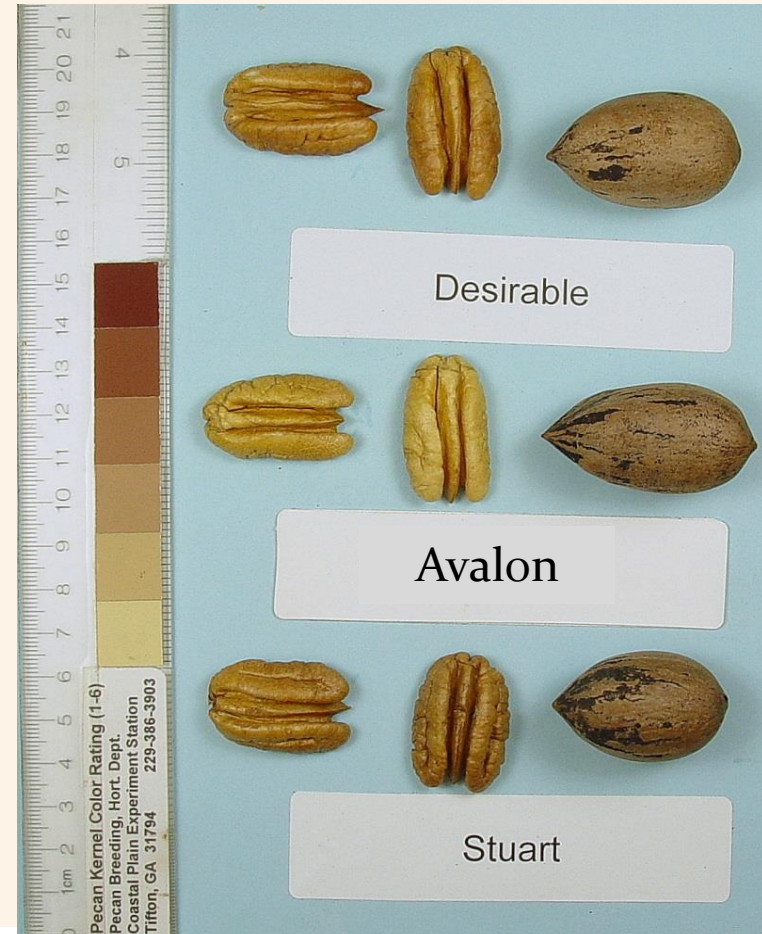
'Avalon' nut quality.

Table 7. Nut and kernel quality attributes of pecan cultivars averaged over all years of testing at Tifton, Ga. A minimum of 5 and a maximum of 11 crops were evaluated for each tree.

Cultivar	# Trees	# Nuts per cluster	Nuts/lb	% Kernel	% Fuzz	Kernel rating
Avalon	6	2.5 b	47 c	54 c	0.0 d	4.8 a
Byrd	5	3.5 a	48 c	58 a	1.0 d	4.3 b
Desirable	6	2.4 b	46 c	51 de	2.3 c	3.6 c
Gafford	4	2.7 b	49 bc	50 e	3.8 b	3.7 c
McMillan	5	3.3 a	51 ab	51 de	0.3 d	3.6 c
Pawnee	3	3.5 a	46 c	57 ab	0.0 d	3.9 bc
Stuart	5	2.6 b	47 c	45 f	7.7 a	2.2 d
Sumner	4	3.6 a	54 a	52 d	2.4 c	3.8 c
Zinner	6	2.6 b	48 c	56 b	0.2 d	4.9 a
Sig.		0.001	0.001	0.001	0.001	0.001



'Avalon' nut quality.



'Avalon' tree attributes.

Table 8. Phenology and number of nuts per cluster of pecan cultivars in Tifton, Ga., 2008-2015.

Cultivar	# Trees	Dichogamy	Bud burst date	# Nuts per cluster	50% Shuck split date
Avalon	6	II	6-Apr a ^z	2.5 b	4-Oct c
Byrd	5	I	26-Mar d	3.5 a	18-Sep d
Desirable	6	I	30-Mar c	2.4 b	10-Oct ab
Gafford	4	I	6-Apr a	2.7 b	10-Oct ab
McMillan	5	II	31-Mar bc	3.3 a	6-Oct bc
Pawnee	3	I	31-Mar bc	3.5 a	9-Sep e
Stuart	5	II	3-Apr ab	2.6 b	11-Oct a
Zinner	6	II	1-Apr bc	2.6 b	5-Oct c
Sig.			0.001	0.001	0.001

Pollen compatibility – Desirable, Byrd, Pawnee, Gafford, Creek, Oconee
Possibly with Huffman, Tanner, Tom, Whiddon



Summary of 'Avalon'

- Excellent scab resistance.
- 47 nuts / lb, 54% kernel
- Harvest about a week before 'Desirable'.
- Cluster size is moderate, may need minimal thinning.
- Black aphid damage needs to be monitored.
- Still evaluating long-term performance.





Dr. Spark's UGA releases

Early Harvest Large Nuts

1. 'Byrd'
2. 'Cunard'
3. 'Treadwell'

Desirable replacements

1. 'Huffman'
2. 'Whiddon'
3. 'Tanner'

Other

1. 'Tom'
2. 'Morrill'





Early Harvest Large Nuts

Early Harvest Large Nuts

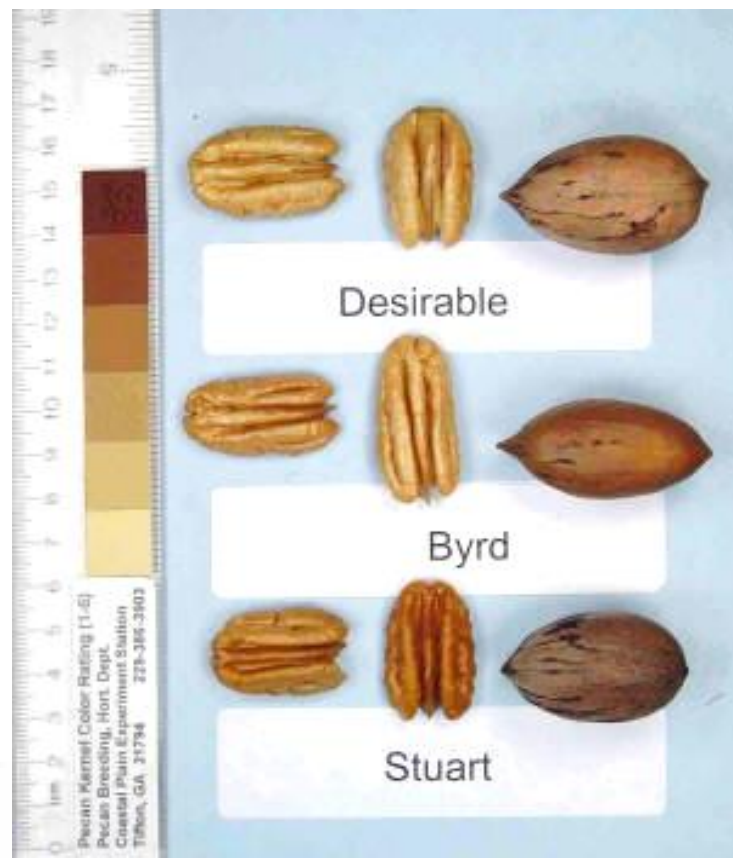
1. 'Byrd'
 2. 'Treadwell'
 3. 'Cunard'
- 'Pawnee' x 'Wichita' cross.
 - Very scab susceptible, need full season fungicide control. At the edge of what we can grow in Georgia.
 - Very precocious and demand crop thinning treatments, do not plant if you will not thin the crop.
 - Harvest in the 3rd week of September.





Byrd

- Nut Size – Varied from 41 to 60 nuts/lb, avg. 49.
Needs good water to make larger nuts.
- Shell is thin and we averaged 56-60% kernel.
- Color can be dark and does not hold well, similar to ‘Pawnee’.
- Type I flowers and bud break is very early in the spring.
- Very productive tree with heavy early crops.
Very large number of nuts / cluster.

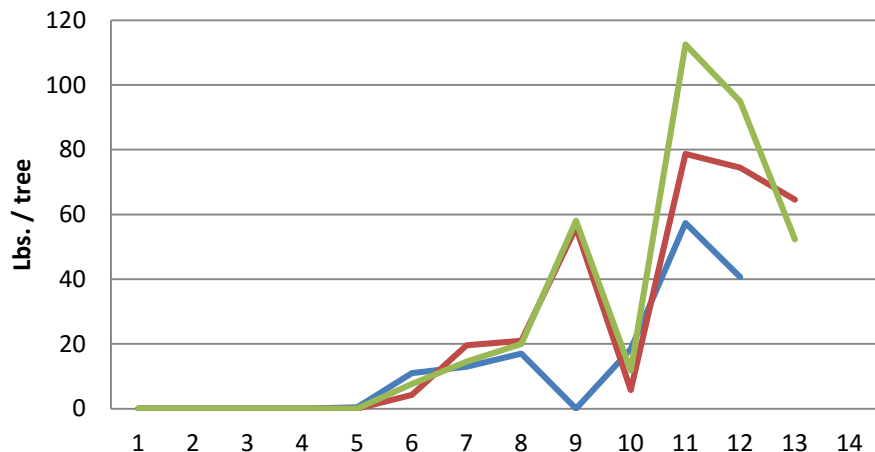




Byrd Vs. Pawnee

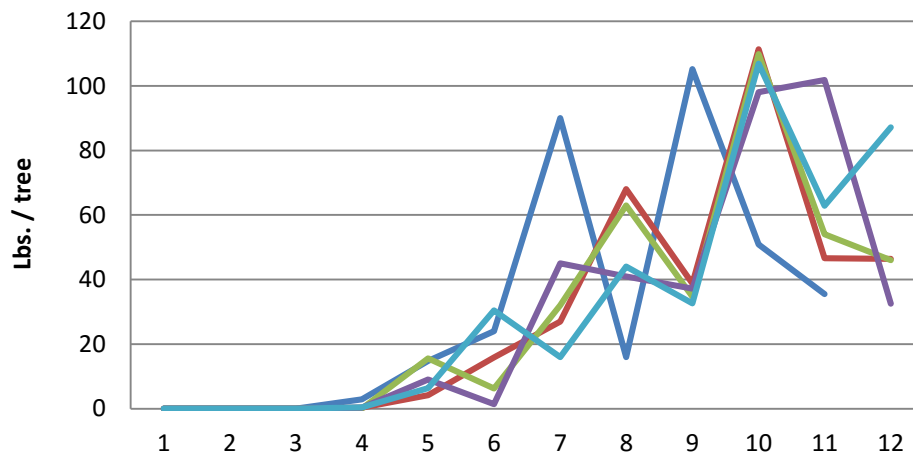
‘Byrd’ appears to be much more productive, at least early on.

Pawnee



Avg. 21 lbs. through 12 years

Byrd



Avg. 31 lbs. through 12 years





Byrd Vs. Pawnee

- Nut quality – Very similar numbers. Both can have color problems.
- Harvest date – ‘Pawnee’ is 10 days earlier, but ‘Byrd’ opens more consistently.
- Scab – Similar, both are susceptible and need full season fungicide control.



My opinion – I would try ‘Byrd’ due to its greater productivity and more consistent opening, **IF you are willing to crop thin.**





Cunard

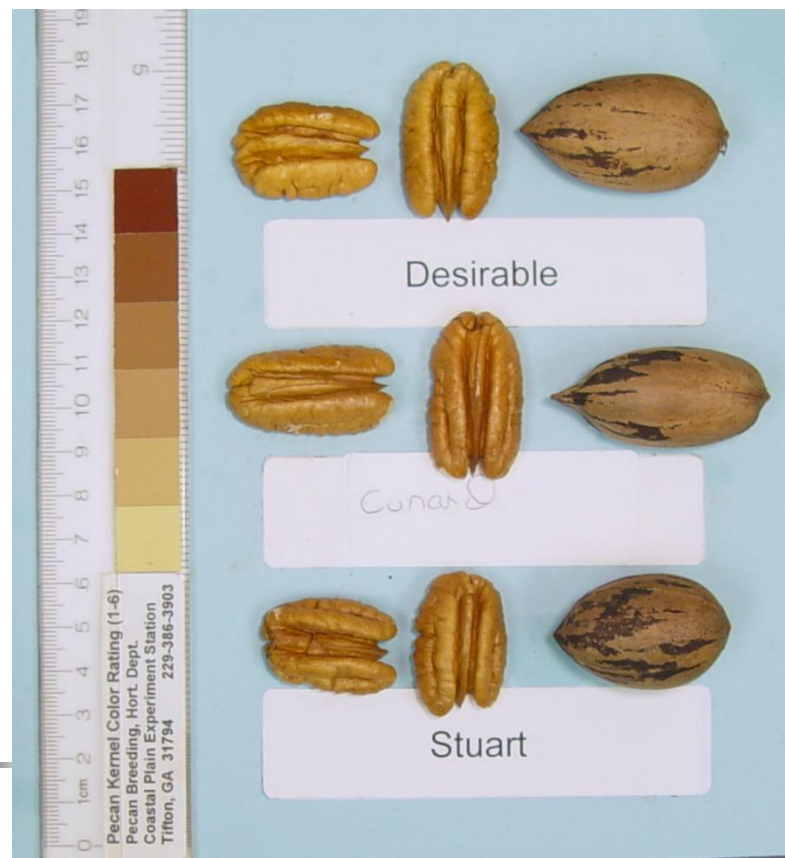
Very similar to 'Byrd', but MORE.

- More size.
- More production.
- More scab susceptible.

Most growers have given up growing 'Cunard' in Georgia, it is just too scab susceptible.

Might be usable in the western region.

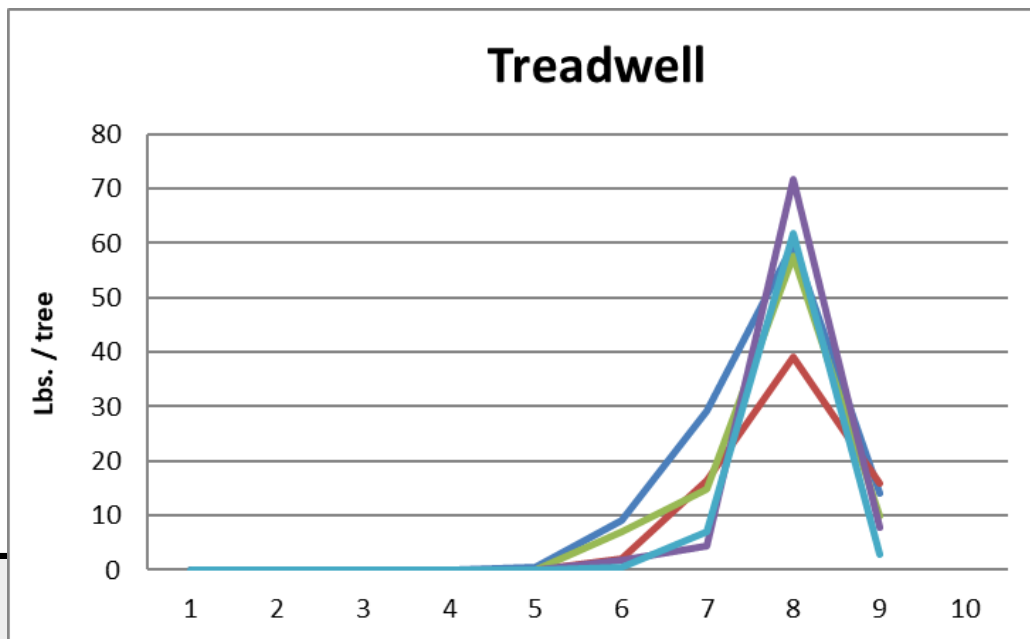
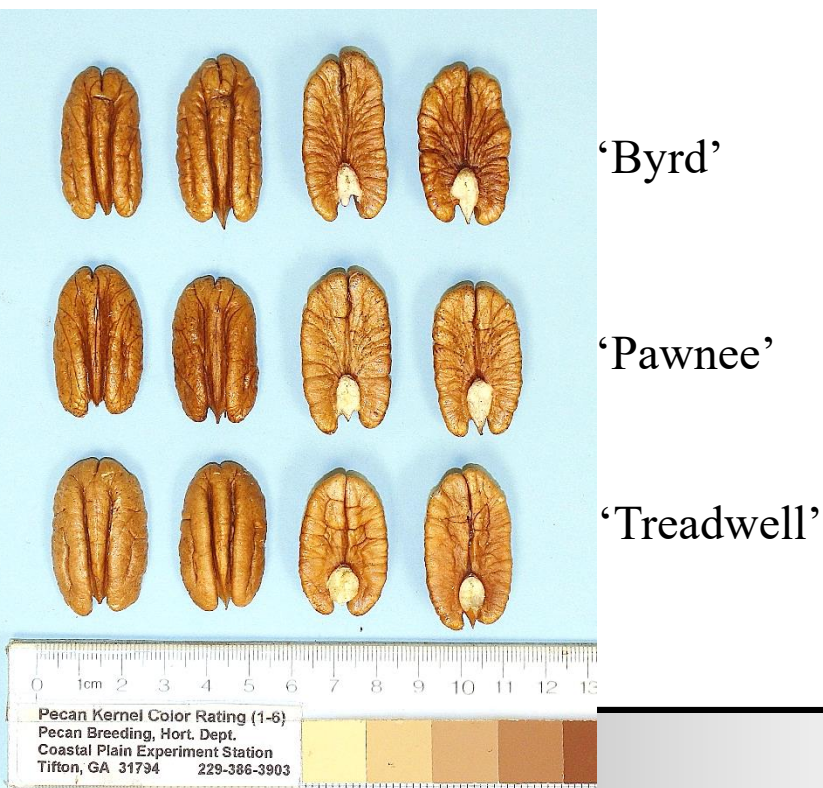
Needs perfect care to be successful.





Where does Treadwell fit in?

- Better color than 'Byrd' or 'Pawnee'.
- Very quick to have an OFF year, definitely needs crop thinning.
- Harvest date and quality were similar to 'Byrd'.
- Smaller tree, may want to plant closer together.

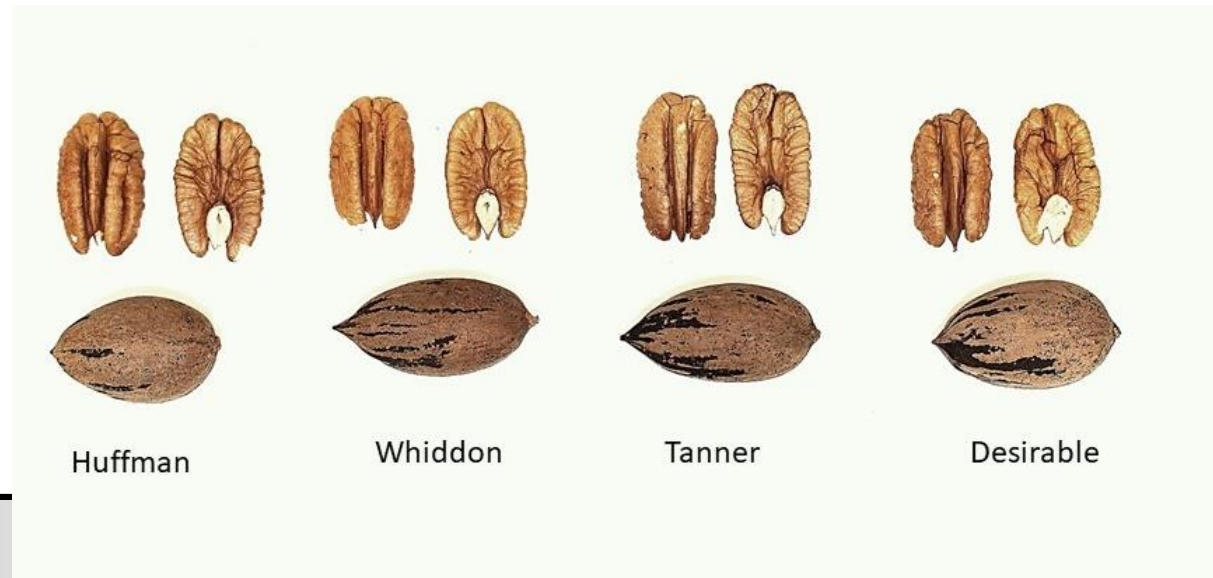




Desirable Replacements

Desirable replacements

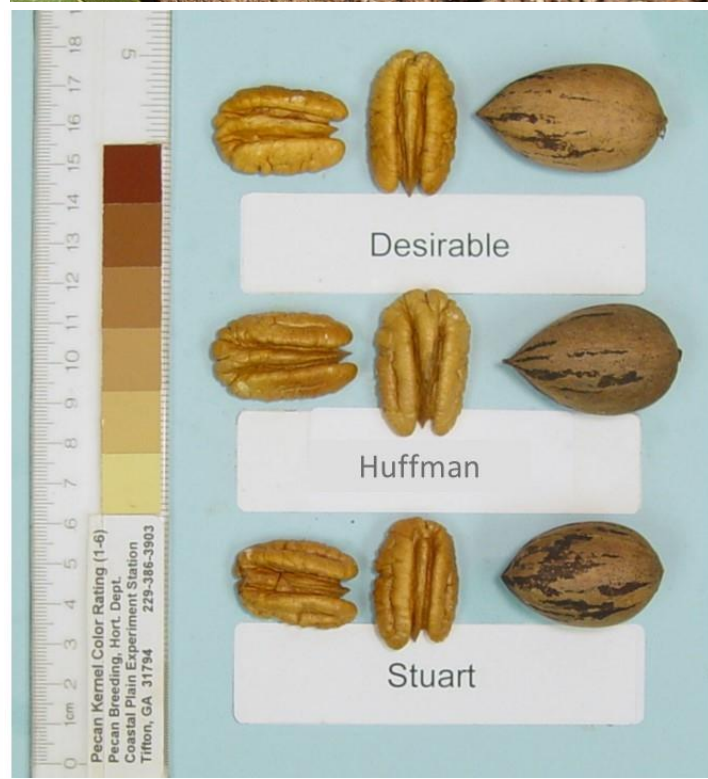
1. 'Huffman' (Pawnee x Desirable)
 2. 'Whiddon' (Pawnee x Desirable)
 3. 'Tanner' (Wichita x Pawnee)
- Low number of nuts / cluster, crop thinning optional.
 - Good scab resistance, so far.
 - Large nut
 - Type I pollination





Huffman

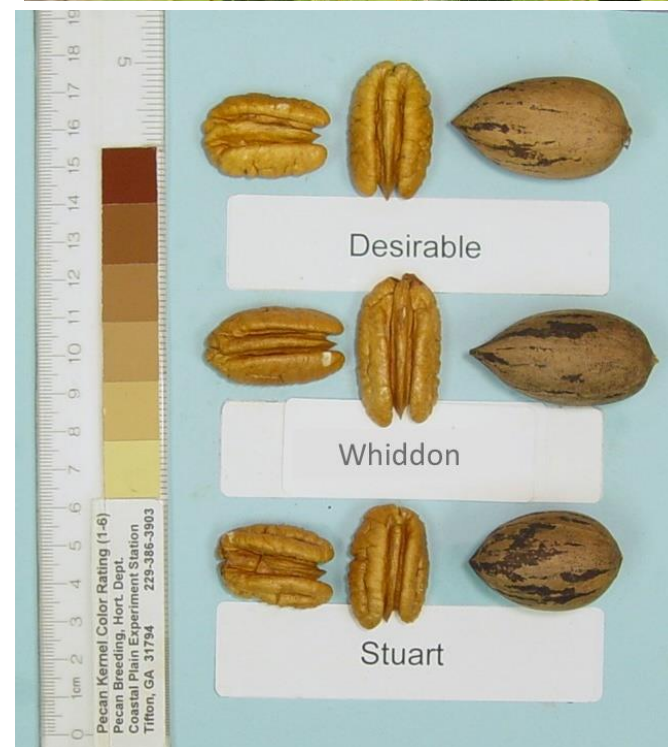
- 39 nuts/lb, 52-55% kernel.
- Yield may be light.
- Scab resistance good so far.
- Harvest 1 week earlier than ‘Desirable’.
- Looks a lot like ‘Desirable’.
- Does not like to be shaded.





Whiddon

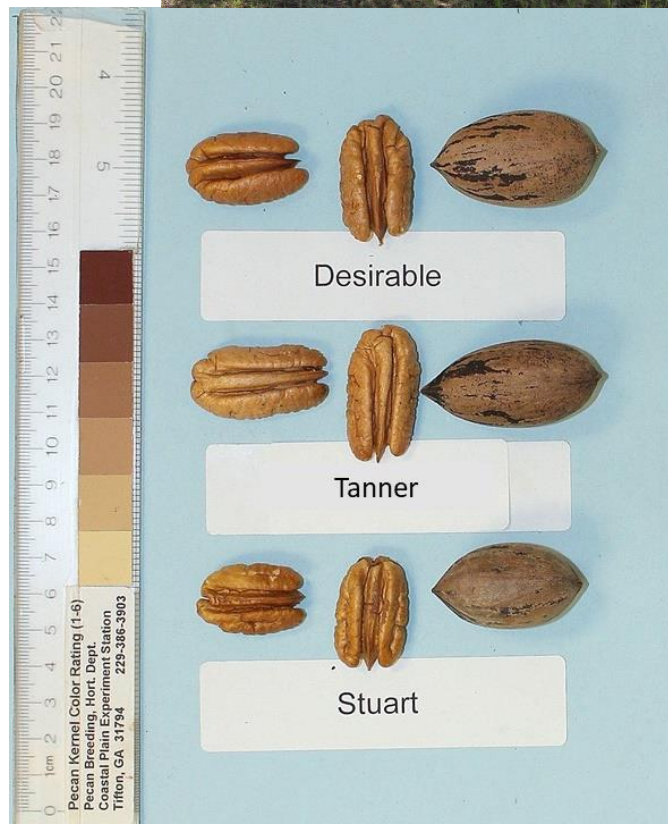
- 40 nuts/lb, 52-54% kernel.
- Most productive of the three.
- Would benefit from some crop thinning.
- Scab resistance reported to be good.
- Harvest at same time as ‘Desirable’.
- May be interplanted among older ‘Desirable’ trees.





Tanner

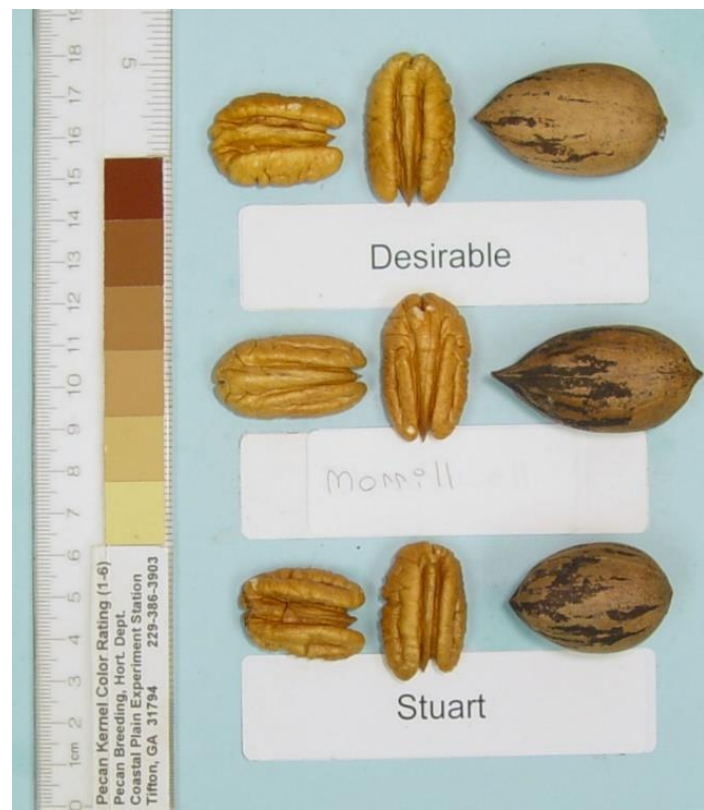
- 42 nuts/lb, 52-55% kernel.
- Some suture split of nuts.
- Early harvest date, similar to ‘Byrd’,
Sept. 20 in Tifton.
- Scab resistance reported to be good.
- Thin canopy.





Morrill

- Pawnee x Wichita seedling.
- 43 nuts/lb, 62% kernel.
- Harvest early Oct.
- Very scab susceptible.
- Modest production in young trees.

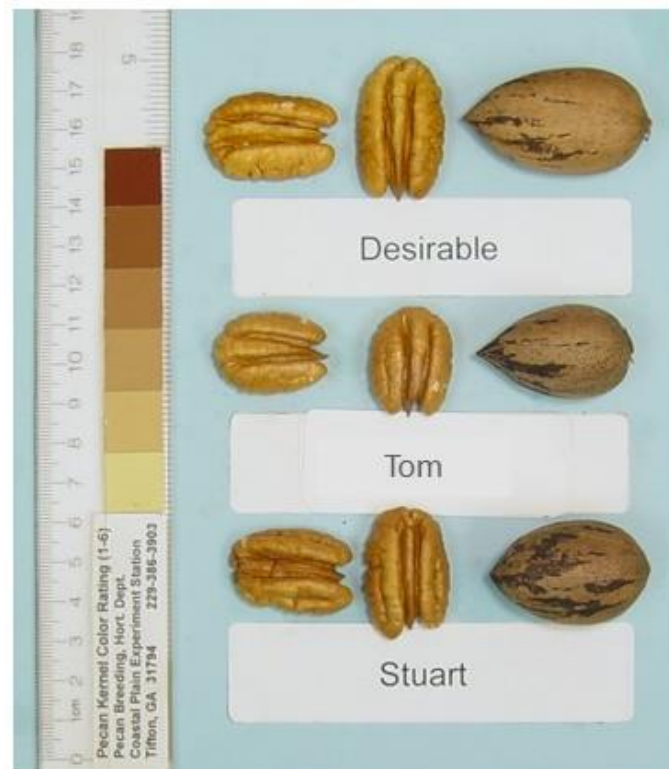




Tom

- Pawnee x Wichita.
- Smaller nut, 58 nuts/lb. ; 55% kernel.
- Currently medium scab resistance.
- Harvest with 'Byrd', Sept. 23 in Tifton.
- Trees are small, plant tight.

Not a replacement for 'Elliott'





Young 'Tom' trees (left) showing relatively compact growth in comparison to 'Zinner' (right).



ALL THIS INFORMATION AND MORE IS ON OUR WEBSITE.

SEARCH FOR US UNDER "UGA PECAN BREEDING".



The Georgia Agricultural Commodity
Commission Funds this Work. Thank You!

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