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RESEARCH AND REPORTS

For the American Tomato Industry

PUBLISHED PERIODICALLY BY FRANCIS C. STOKES COMPANY, VINCENTOWN, NEW JERSEY

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1955 — OUR 74TH YEAR.

WHAT DOES THIS MEAN TO U.S. TOMATO INDUSTRY?

To quote General Electric's slogan, "Progress is our most important project."

A few years ago it was 5 tons per acre, now 10 tons is standard. We look forward to the next step, - from 10 to 20 tons per acre. (In 1953 our company averaged 14.3 tons per acre.) We are definitely aiming at a 15 tons per acre average in 1955 and 20 TPA by 1957.

Long years of concentrating on one crop, the tomato, has developed traditional attitudes which have carried with it habits of perfection. The priceless quality of a plant breeder—an eye for a plant—is one of the components. By constantly living tomatoes twelve months of the year, they have become an important part of our lives.

You may well ask what our 74 years have brought to us. For one thing, over a dozen Stokes varieties have played a part in the industry's economy. Here are some of them: Atlantic Prize, Earliana, Bonny Best, Stokesdale, Valiant and the five Stokes-cross strains. Each of these in turn has brought new wealth to the industry.

We would be ungrateful if we did not acknowledge priceless assistance from our associates in the craft. We refer to such men as Walter P. Stokes, W. W. Tracy, Fred Pritchard, Walter Huelsen, Lyman Schermerhorn, John Tracy, David Burpee, Paul Work, Troy Currence, Russell Larson, Emil Gutscher, Alfred Foster, Will Tapley, Will Moore, Howard Peto, Kenneth Relyea, Bernard Pollack, Oscar Pearson, Harry Gale. Fine men, - all of them. All men of integrity. All men with inquiring minds. Each has made his contribution. Each has shown a generous spirit, a tolerance for competition, and the warm hand of friendship. We have stood on common ground with them.

With humility, we believe our 74 years have justified the slogan, "Pioneers in Better Tomatoes." Concentration on a single specialty has brought rewards, and these we hope are being passed on to you, our friends, as a contribution to your success and satisfaction.

ARE YOUR PLANS COMPLETE FOR YOUR 1955 TOMATOES?

1. Know your land. By long experience. By complete soil tests.

Ideal pH 6.5

Organic test of 3.5% (the physical structure of the soil.)

Make continuous soil tests especially for nitrogen after rain, but withhold almost all nitrogen until after the fruit is set.

2. A Fall-fed cover crop 15 lbs./A. Crimson Clover; 15 lbs./A. Ryegrass. Plant in August, fertilize in September, plow under in April.

3. Fertilizer — 10 tons of tomatoes per acre is estimated to require the following amounts of N.P.K.: 100 lbs. Nitrogen. 35 lbs. Phosphorus. 175 lbs. Potash.

4. Know your varieties. What are you aiming for? The \$4.00 market? Size? Flavor? Total tonnage? Know your sources both seed and plants. Some are good and some are only fair. Take nothing for granted. Be sure to investigate the new introductions. Never depend on a single variety. Three will spread the risk and the weather hazards. (They are always with us.) Aim for at least two different maturity dates.

5. Spray — spray — spray — spray — spray — spray, at least 6 times, perhaps 8 times will be better. We recommend Mauzate or Dithane. See the Samson chart on page 3.

6. Dust? Forget it. It is only half as effective as spray.

Adequate spray controls disease and insects, it also has nutrient qualities.

7. Irrigation. The ideal moisture for a growing tomato plant is one inch per week. Keep in mind that a tomato is 94% water.

8. Harvest. 95% ripeness has better flavor than 105% ripeness. Use careful judgment on this. What is so rare as a freshly picked garden tomato?

9. Trellis? Yes if you have the \$\$ and the patience. Staking will give more handsome fruit and less rot loss on yields. Aim for 15 lbs. per plant, 20 tons/A.

10. Storage. Handle promptly. Never refrigerate. Never store at colder than 55 degrees. Never pick a totally green fruit and expect it to have flavor, regardless of how red you can make it by ethylene gas.

THE UNDOUBTED STRENGTH OF STOKESCROSS STRAINS

Our Stokescross tomatoes are the F_2 s, or 2nd generation of the hybrid. Innumerable tests have shown these to reflect a hybrid vigor that is very close to the F_1 s. The clear advantage is that they set early and more readily than the standards. Their harvest season is lengthened. Again we refer you to the charts on page 3. You will find two F_2 s listed. Each leads in a field of winners in the official 1954 Indiana trials. This experience has been duplicated in several states. One grower who has leaned heavily on Stokescross has grossed over \$1000. per acre.

OUR WINTER PROVING GROUNDS IN CUBA.

For the 5th consecutive year, we are holding winter trials in the Province of Santa Clara some 200 miles East of Havana. These trials afford two readings per year. They have advanced our hybrid program, and our selection of standards, and without question have strengthened our judgment and opinions.

This February 25th report is published too soon to give any detailed Cuban news. 79 strains are under test, some standards, some F_1 s, some F_2 s. Most of these will be on trial at our Vincentown Proving Ground. Our customers and friends are invited to see this work in August.

February temperatures in Cuba average in the 70s. The top soil with a depth of 24 inches has a pH. of 7.5. The rainfall of February averages about 4 inches. So far this year Late Blight has not been serious, but the Trade Winds blowing in from Caibarien are a constant threat and require a rigid spray schedule once a week. Unfortunately, the Cuban industry has lost heavily from Late Blight for lack of spraying equipment.

WHAT WILL THE NEW VARIETIES BRING?

As Harlan Hatfield, new chairman of the Indiana Fieldman's Committee said, "We need a lot of work on the new varieties." This work has been under way a long time. Every state is crying out for a new tomato. Many competent breeders are approaching the final work-out of their efforts. Locally, these hold great promise. Homestead No. 2 for Florida, Chesapeake for Maryland, Texto No. 3 for the Rio Grande Valley and the Winter Garden, Pollack's STEP 128 for the hybrid men, many others. But will these have the wide adaptability of Schermerhorn's amazing Rutgers? Will they stand up under the country wide tests? We will report later on some of the new stocks in our Cuban trials. In the meantime, please do not ask us for samples as they are still in the testing stage. As of now we would point out that resistance to cracking and resistance to Fusarium Wilt are factors that are being worked on the hardest. Each is costing the industry some \$25 million per year.

SECOND GENERATION OF THE HYBRID

WILL NOW BE CALLED F_2 .

Mr. W. A. Davidson, Chief, Seed Branch, U. S. D. A. has made it clear that the word hybrid must refer specifically to seed produced from fruit of the actual cross. Reference to 2nd generation hybrids is out. The term F_2 will, therefore, be used by our company. Will our customers please note this. Stokescross strains will hereafter be referred to as F_2 s and not as F_2 hybrids.

We, of course, will promptly comply with Mr. Davidson's request. Our Stokescross strains are F_2 s. On the contrary, Banjo, a true F_1 , will be referred to as Banjo Hybrid.

IS IRRIGATION HERE FOR TOMATOES?

"You bet it is" says Prof. Williams of Purdue.

Irrigation will produce better quality fruit. His chart showed Stokesdale without irrigation at 500 bu. per acre, but with 1-inch per week, 800 bu.

Michigan State reported irrigation increased yields 60%.

Delaware Experiment Station has very similar data.

Go to a reliable supplier who has a competent engineering staff. There are several manufacturers of sprinklers and pipes, be sure you get the best.

Send to Penn State for Bulletin 562 on irrigation (Jan. 1953).

Irrigation is not an emergency measure, plan for it. Be sure you have:

1. Adequate water supply.
2. Well designed system.
3. Adequate measurement of your soil moisture.

We recommend the Buoyucus soil moisture blocks, sold by Michigan Wood & Metal Products Co., Bloomfield Hill, Michigan. Place at least one block per acre at varying depths 4", 8", 12", or deeper. Tomato roots are over 4 feet deep. Aim for the equivalent of 1" per week but do not go overboard. 1½" per week is too much. The cost of your water pressure determines most of the cost.

Several Indiana Stations contributed to this data: Figuring a drought period as 2 weeks or longer without rain:

- 20 times in 10 years—2 weeks duration
- 10 times in 10 years—3 weeks duration
- 5 times in 10 years—4 weeks duration
- 2 or 3 times in 10 years—5 weeks duration
- 1 time in 10 years—70 days or longer.

DATA FROM THE WINTER TOMATO MEETINGS

Purdue—Dr. R. W. Samson. One of the best pathologists in the business. One of his charts showed comparative tomato yields and percentage of Anthracnose fruit rot with a number of different sprays. Note the striking difference between 6 seven day, and 3 fourteen day tests:

Yield—	7 days		14 days		Anthracnose	
	T/A	T/A	7 days	14 days	%	%
Manzate	21.8	13.8	3	9		
Dithane	21.3	11.3	10	21		
Captan	20.0	12.0	5	22		
No spray	6.2	6.2	37	37		

If Late Blight appears in serious strength spray at least once with Bordeaux mixture.

Dr. E. C. Stevenson—As reported in the 1955 "The Cannery Wail." "One Wail a year. Aint that enough?"

The problem of evaluating tomato varieties accurately is a complex one. Yield records are of value, but there is more to the problem than that. Much of the information must necessarily be gotten by observation and personal impressions, because it is not practical to run controlled tests on all the factors needed to evaluate varieties properly. Nine varieties that make up most of the Indiana canning tomato acreage were grown in ten-plant plots with five replications at three locations.

A summary of the yield results is present in the following table:

Variety	Warren	Kokomo,	Mt. Summit,
	Ind. Yield	Ind. Yield	Ind. Yield
	T/A	T/A	T/A
Brookston	15.5	19.6	15.9
Rutgers x Pritchard F ₂	14.8	18.4	14.3
Kokomo	10.4	17.4	11.1
Purdue 1361	11.5	21.3	11.8
Rutgers	10.8	17.7	12.5
Urbana	10.9	17.6	12.1
Indark	9.8	19.0	10.3
Stokescross No. 5, F ₂	13.7	22.2	14.6
Improved			
Garden State	13.3	19.6	11.4

"I want some F₂'s. Diversity is favorable." "The most solid fruits were in F₂'s."

Dr. N. K. Ellis, Head, Dept. of Hort. "Inspection Problems." Grading is a more equitable basis for barter. It guarantees a certain quality to the purchaser. Everyone benefits by our grading system. Indiana has lost ground on tomatoes for processing—29,600 acres 1954 vs. 61,900 acres 10 year average 1943-52. 160 tomato inspectors at that time; 45 in 1954. Indiana had 200 companies packing tomatoes in the old days; 56 companies in 1954.

Roscoe Frazer and F. C. Gaylord are the life of the great Purdue Meeting. Each has a delightful sense of humor and each knows a lot about tomatoes. The ever present battle between them is, direct seeding vs. transplants.

Dr. Louis M. Sears, one of the great historians of our country, addressed the Survivors Dinner. For 17 years he has added wisdom and wit to this fine gathering. "This evening is my Swan Song. I have taken 50 years and I hope to graduate in June. In these 50 years I have not had a sabbatical year. I shall live in Washington. (Cosmos Club) This meeting is one of the bright spots here. Tomatoes are in the ascendant.

"Our destiny calls for leadership, but you cannot buy affection with money. From 1922-29 a constant flow of U. S. dollars to Europe. We were exhausting National resources, then came the crash.

"One hopeful sign is the change in our attitude toward the St. Lawrence Seaway. What would happen to Gary if the Messabi Range should give out? But the Seaway will bring Laborador ore to Gary. U.S. Steel does not mean to be eclipsed by Bethlehem."

Speaking of the atom—"The best hope of our survival lies in a stand-off. If a rocket with a hydrogen head can fly 5000 miles and land within 10 miles of a target then look out, for within a 40 mile circle all will be dead.

"This is good-bye. How patient you have been. How tolerant you have been. Thank you so very, very much."

Penn State Meeting: Excellent speakers. Nittany Lion Inn is delightful. Temperature—12 degrees. Penn State with 12,000 students is now one of the great universities. Dr. Milton Eisenhower a great leader.

Dr. Frank App, (honored at Syracuse as Vegetable Man of the Year.) A splendid citizen. One of the very smart men at Seabrook's. He made by all means the finest contribution to the meeting. His talk on soil management was a masterpiece. His ideas should be closely followed. Over the past ten years he has vastly increased their production and at the same time cut their fertilizer cost drastically.

App's great contribution has been the maintenance of the physical structure of the soil. Seabrook's laboratory makes from 19 to 20,000 soil tests per year. These tests show just what is needed. The combination of an August sown cover crop, (15 lbs. Crimson Clover, 15 lbs. Ryegrass), plus the fertilizing of the crop in the Fall according to the soil test, is the real secret of App's success. This combination serves as a fertilizer factory throughout the winter.

BANJO HYBRID TOMATO PLANTS

A New F₁ of Very Great Promise

Would you grow the finest tomatoes in your town? Plant Banjo Hybrid. Read the enclosed folder with great care. Use either this order sheet or order on the colored circular. Please do not use both forms. Be sure to indicate when you want delivery.

15 plants \$1.50

25 plants \$1.75

50 plants \$2.75

STOKES TOMATO SEEDS FOR 1955

VALIANT—Days to Maturity 68. A Stokes introduction of 1937. Important for the extra early market. The plant is sparse and open. The fruits will average 5 to 6 ounces. It is particularly adapted to the short season states and has found wide acceptance in many areas of the U. S. and Canada.

Garden pkt.	Trade pkt.	1 oz.	1 lb.
15c	45c	80c	\$6.00

STOKESDALE—Days to Maturity 70. A Stokes introduction of 1936. It is a half-brother of Valiant with slightly heavier foliage. Size of fruit 5 ounces. The quality is excellent. Stokesdale has found its widest acceptance in the northern tier states. In its class it is a tomato of great merit.

Garden pkt.	Trade pkt.	1 oz.	1 lb.
15c	45c	80c	\$6.00

QUEENS—Days to Maturity 70. Queens is a selection from a cross made by Prof. L. G. Schermerhorn, between Rutgers and Valiant. It is the same season as Stokesdale. It is slightly larger and develops a heavier plant. Queens is recommended as an early market variety of importance.

Garden pkt.	Trade pkt.	1 oz.	1 lb.
15c	45c	80c	\$6.00

RUTGERS—Days to Maturity 85. This all-purpose tomato was developed by Prof. L. G. Schermerhorn of Rutgers University. Our stock is produced from his Mother Strain which has been well maintained since its introduction in 1936. Rutgers is one of the great American introductions.

Garden pkt.	Trade pkt.	1 oz.	1 lb.
15c	40c	70c	\$4.50

CHESAPEAKE—Days to Maturity 95. This variety is the result of many years' effort on the part of Dr. Francis C. Stark at the University of Maryland. Chesapeake has a heavy vine and is late in maturity. It is considered to be highly resistant against cracking and against Fusarium Wilt.

Garden pkt.	Trade pkt.	1 oz.	1 lb.
15c	45c	80c	\$6.00

MASTER MARGLOBE—Days to Maturity 77. This Master strain has been maintained by Stokes for 30 years. It is one of the most perfectly formed tomatoes, and is held in high esteem by the shipping trade. Our company has taken a leading part in maintaining the strength and trueness of this famous Fred Pritchard introduction of 1924.

Garden pkt.	Trade pkt.	1 oz.	1 lb.
15c	45c	80c	\$6.00

STOKESCROSS No. 1—Days to Maturity 70. This is a Stokes introduction of great importance. It is early maturing, heavy bearing and it will develop 5 to 6 ounce tomatoes of delightful flavor. Stokes No. 1 is one of our most important varieties. We recommend spacing 3 x 5 ft.

Garden pkt.	Trade pkt.	1 oz.	1 lb.
25c	\$1.00	\$5.00	\$15.00

STOKESCROSS No. 4—Days to Maturity 75. An important tomato for the greenwrap trade or for the processor. The seed offered herewith is an F₂. It will set readily, it will develop full color right to the stem. Its interior structure will allow long distance shipping.

Garden pkt.	Trade pkt.	1 oz.	1 lb.
25c	\$1.00	\$5.00	\$15.00

STOKESCROSS No. 5—Days to Maturity 77. This is perhaps the strongest in our entire list of varieties. The vine is strong, the blossoms set readily, yields exceeding 30 tons per acre have been recorded several times. No. 5 is one of our strongest tomatoes.

Garden pkt.	Trade pkt.	1 oz.	1 lb.
25c	\$1.00	\$5.00	\$15.00

STOKES FOUNDATION STOCKS: This seed is produced on Stokes Proving Grounds. It is one generation nearer to the original single plant selection. This stock is the deluxe tomato seed of the industry. Many successful growers have proven that the higher price for this seed is justified in the results obtained.

Garden pkt.	Trade pkt.	1 oz.
25c	\$1.00	\$5.00

From

R.F.D. or Street

Post Office *State*

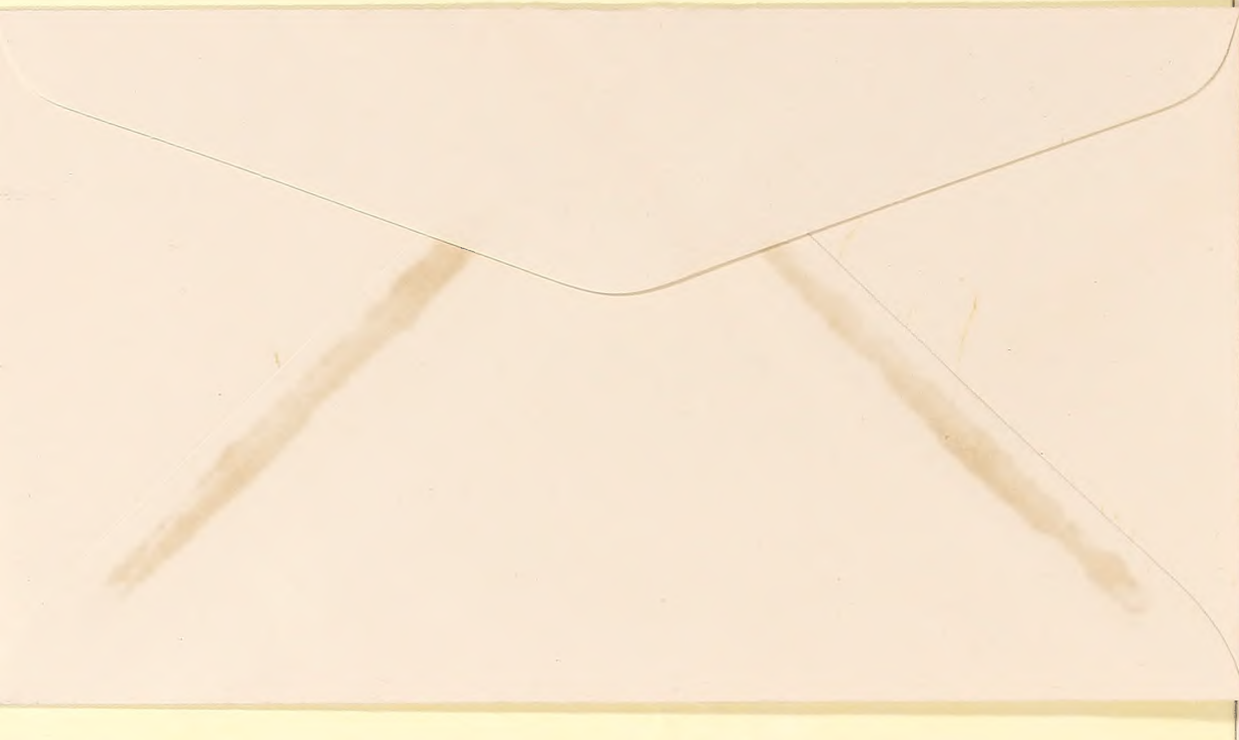
PLACE
STAMP
HERE

Francis C. Stokes Company

Pioneers in Better Tomatoes

Vincentown,

New Jersey



ORDER SHEET

FRANCIS C. STOKES COMPANY

Breeder and Grower
of Fine Tomato Seed

Vincentown, New Jersey

Date

NAME

R.D. or Street

Post Office

State

QUANTITY	BANJO HYBRID TOMATO PLANTS	15 PLANTS	25 PLANTS	50 PLANTS	\$	CTS.
	A New F ₁ of Very Great Promise	\$1.50	\$1.75	\$2.75		

We believe that Banjo Hybrid will develop the finest tomatoes in your town. Carefully read the enclosed colored leaflet. Banjo is sold in the form of plants only. These deluxe Southern Grown plants are guaranteed to arrive in good condition—all charges prepaid.

Deliver my Banjo Plants between:
() Apr. 15 & 30, () May 1 & 14, () May 15 & 30

STOKES TOMATO SEED FOR 1955

QUANTITY	Standard Stocks —	GARDEN PACKET	TRADE PACKET	ONE OUNCE	ONE POUND	\$	CTS.
	VALIANT	.15	.45	.80	\$ 6.00		
	STOKESDALE	.15	.45	.80	6.00		
	MASTER MARGLOBE	.15	.45	.80	6.00		
	RUTGERS	.15	.40	.70	4.50		
	QUEENS	.15	.45	.80	6.00		
	CHESAPEAKE	.15	.45	.80	6.00		

Stokescross F₂—

	STOKESCROSS No. 1 Extra Early	70 days	.25	\$1.00	\$5.00	\$15.00		
	STOKESCROSS No. 4 Early—Main	75 days	.25	1.00	5.00	15.00		
	STOKESCROSS No. 5 Early—Main	77 days	.25	1.00	5.00	15.00		

Stokes Foundation Stocks— As Developed and/or Maintained on Stokes Proving Ground.

	VALIANT—Extra Early -65 days - 5 oz.	.25	1.00	\$5.00			
	STOKESDALE—Profuse Bearer - 70 days - 5 oz.	.25	1.00	5.00			
	MASTER MARGLOBE—Excellent type - 80 days - 5½ oz.	.25	1.00	5.00			
	RUTGERS—Strong, Rugged Plant - 85 days - 6½ oz.	.25	1.00	5.00			
	QUEENS—Very handsome - 70 days - 5½ oz.	.25	1.00	5.00			

TOTAL AMOUNT \$

