

## HORTICULTURE

### SWEET POTATOES

The work in progress with sweet potatoes in 1934 consisted of the following tests:

1. Variety Trials (Early Maturity)
2. Sources of Ammonia
3. Sources of Potash
4. Top Dressing Test
5. Ratios of Mineral and Organic Ammonia

All previous work that has been conducted with this crop is reported in Bulletin No. 17 entitled "Sweet Potato Culture in the Coastal Plain of Georgia." This bulletin will be mailed, without cost, to residents of the State.

A summary of the data contained in Bulletin No. 17 follows:

The sweet potato is the most important truck crop grown in Georgia, both from the standpoint of acreage planted and of monetary value, and is particularly adapted to the climatic conditions and soil types of the Coastal Plain area where it is most extensively planted.

It is highly important that a system of crop rotation be followed which will maintain soil fertility and prevent frequent planting of potatoes on the same land.

A variety study indicates that Porto Rico should be grown for local consumption, limited northern shipments and for southern markets, while Big Stem Jersey is best suited for early shipment to northern markets.

In order to keep varieties pure, fields should be rogued and seed stock hand-picked, thus eliminating all potatoes that are not true to type.

Draws and vines are the most economic source of plants from which sweet potatoes can be grown. Draws are essential in growing potatoes for the early market and for high production where early planting is

necessary. Vines should always be used as the source of plants for producing seed potatoes. Also, they may be used in late commercial plantings, although because of resulting low yields, it is doubtful if this practice is a profitable one to the grower.

The tip end and central part of sweet potato vines seem to be more desirable for use as plants than the more fibrous, woody part near the base.

Plants taken from the tip and stem ends of sweet potatoes seem to exert no varying influences on color and productivity of succeeding crops.

In growing sweet potatoes for the early market, hotbeds are indispensable in the production of early plants.

Approximately seven bushels will be required for each acre to be planted.

Twenty square feet of bed space should be allowed for each bushel of "field-run" potatoes.

Manure is the most practical source of heat for plant beds. Only unweathered stall manure produces satisfactory heat.

Plant beds should be constructed of tongue and grooved material and covered with glass or waterproofed sheeting.

Before planting, seed potatoes should be immersed for ten minutes in a one to 1000 strength solution of mercuric chloride.

It is very essential that plant beds be properly watered and ventilated and that plants be gradually hardened to outside conditions before being transplanted to the field.

Approximately 45 days are required to produce Porto Rico plants in a hotbed, while about 60 days are required for Big Stem Jersey.

Data obtained from a ten-year study of sweet potato fertilizer requirements indicate that the most desirable combination of plant food for this crop is a formula consisting of 8 per cent phosphoric acid, 4 per cent ammonia and 6 per cent potash. The potash may be increased to 8 or 10 per cent on light sandy soils.

Under soil and climatic conditions of South Georgia, profitable returns may be expected from rates of application of fertilizer ranging as high as 800 pounds per acre.

Fertilizers of medium concentration compare favorably with standard mixtures.

The highest yields are resulting from fertilizer in which half of the ammonia is derived from nitrate of soda and half from cotton seed meal, and in which the potash is derived from kainit.

Spacing tests with sweet potatoes indicate that the most profitable returns may be expected from plantings spaced 8 to 12 inches in the drill and 3 to 3½ feet in the row.

Both planting and harvesting dates indicate that the minimum growing period for profitable yields is 115 to 120 days, and that the maximum production of No. 1 potatoes is reached in 185 to 200 days.

High beds, or ridges, seem to be more conducive to heavy yields than do medium to low beds.

Pruning sweet potato vines reduces yields in direct proportion to the amount of vines that are cut, therefore, only a small portion of the vine from each hill should be taken in procuring vines for planting purposes.

Grading is essential in the successful marketing of sweet potatoes, therefore, it is considered desirable to adhere strictly to grade specifications as adopted by the U. S. Bureau of Agricultural Economics.

Storage is an important factor in orderly marketing of sweet potatoes. When large quantities are to be handled, storage houses are desirable. Tobacco barns may be used very satisfactorily for curing and storing this crop.

Sweet potatoes are highly susceptible to both field and storage diseases, therefore, it is important to follow a rigid program of disease control.

## TOMATOES

The work in progress with tomatoes includes:

1. Variety Test
2. Planting Dates
3. Spacing Test
4. Fertilizer Formula Test
5. Rates of Applying Fertilizer
6. Sources of Ammonia
7. Sources of Potash
8. Miscellaneous Plant Nutrients
9. Manure Supplemented with Commercial Fertilizer
10. Top Dressing Test
11. Ratios of Mineral and Organic Ammonia
12. Pruning Test
13. Seedling Disease Control

**TOMATO—VARIETY TEST:** The tomato variety test was continued as in previous years. From the standpoint of earliness and productivity Break O'Day should be important as an early commercial tomato for the Coastal Plain area. It is similar in appearance to Marglobe and Pritchard but is less desired commercially because it does not color uniformly at the stem. Pritchard is perhaps of first importance as a market tomato for South Georgia. Marglobe is an excellent variety but data obtained thus far indicate that it is a shy bearer. Other varieties of commercial importance are Clark's Early, Gulf States Market and Cooper's Special.

TABLE XLIII—TOMATO VARIETY TEST  
 Average Yield for Years 1928 to 1934 Inclusive  
 Fertilizer: 800 Pounds per Acre, 8% Phosphoric Acid,  
 4% Ammonia and 4% Potash  
 Average Date Planted: April 13

VARIETY	YIELD IN POUNDS PER ACRE			Days Required to Mature	Days Bearing Period
	Market- able	Culls	Total		
1. Spark's Earliana**	7468	2977	10445	51	45
2. Break O'Day***	7248	2290	9538	53	45
3. Bonnie Best	6300	1885	8185	58	36
4. Clark's Early	6265	1876	8141	58	38
5. John Baer*	6251	2157	8408	56	39
6. Pritchard	6122	1909	8031	55	39
7. Louisiana Pink	5859	2139	7998	59	36
8. Louisiana Red*	5790	2308	8098	54	40
9. New Extra Early Prolific***	5661	2719	8380	57	38
10. Gulf States Market*	5274	2163	7437	57	36
11. New Stone	5125	1898	7023	58	35
12. Cooper's Special	5075	2863	7938	60	36
13. Marglobe	4663	1583	6246	59	36
14. Norton*	4616	1586	6202	61	36
15. Greater Baltimore*	4525	1867	6392	58	36
16. Livingston Globe	4277	2014	6291	59	35
17. Winsall***	3873	1731	5604	56	39
18. Norduke**	3332	1569	4901	57	39

\*Six-year average.

\*\*Five-year average.

\*\*\*Four-year average.

**TOMATO—PLANTING DATES:** The heaviest yields invariably are obtained from early plantings. As the planting season advances the increase in insect and disease damage causes a gradual decrease in the yield of tomatoes so that commercial production has not resulted from plantings made later than May 15th. In this particular test, however, it is believed that the concentration of insects on the relatively small areas planted, has been largely responsible for the decreased production. On larger areas it is probable that there would be less concentration and a resulting decrease in insect injury so that profitable yields should be obtained from later plantings. In previous tests with planting dates at this station the yield from late plantings has been approximately  $\frac{1}{3}$  to  $\frac{1}{2}$  that of the early Spring crop.

