

HORTICULTURE

SWEET POTATOES

The work with sweet potatoes consists of:

1. Variety Test (Early Maturity)
2. Sources of Phosphoric Acid
3. Sources of Ammonia
4. Sources of Potash
5. Top Dressing Tests with Nitrogen and Potash
6. Ratios of Mineral and Organic Ammonia

Sweet Potato—Variety Test (Early Maturity): The test with sweet potato varieties has been revised so that it includes several new varieties and additional selections or strains of Porto Rico. Definite results of the test will be given as the work progresses.

Sweet Potato—Sources of Phosphoric Acid: This test was begun in 1935, consequently further study will be necessary before conclusions can be drawn as to the most desirable source of phosphoric acid to be used in commercial fertilizer for sweet potatoes. However, this work will be continued and its progress reported through the annual reports.

Sweet Potato—Sources of Ammonia: The test with sources of ammonia was revised in 1933 and all carriers eliminated that were not commercially available. Data resulting from this test over a three-year period are shown in Table XLII.

TABLE XLII
SWEET POTATO—SOURCES OF AMMONIA

Average Yield for Years 1933 to 1935, Inclusive

Fertilizer: 800 Pounds per Acre, 8% Phosphoric Acid, 4% Ammonia from Sources Indicated, and 6% Potash

Variety: Porto Rico

Average Date Planted: April 28

SOURCE OF AMMONIA	YIELD IN BUSHELS PER ACRE						Days Required to Mature
	No. 1's	No. 2's	Strings	Jumbos	Rot	Total	
Cottonseed Meal.....	245.66	41.17	19.85	8.28	.45	315.41	190
Dried Blood.....	245.38	37.09	19.10	4.47	.11	306.15	190
Calcium Nitrate.....	228.23	38.46	17.12	7.21	291.02	190
Nitrate of Soda.....	224.95	53.76	19.10	12.27	.07	310.15	190
Calnitro	224.11	40.04	17.01	8.02	.14	289.32	190
Sulphate of Ammonia	216.91	40.57	17.46	7.22	.25	282.41	190
Cyanamid	203.22	39.38	18.82	4.01	265.43	190

Sweet Potato—Sources of Potash: Work with sources of potash has extended over a five-year period. Data resulting from this test show only a negligible variation in the yield of No. 1 potatoes re-

sulting from the different carriers when used in a complete fertilizer. Consequently muriate seems to be the most economical source from which to obtain potash for commercial production, although where total production is of major importance, high grade kainit or manure salt seems to be preferable as will be noted in the accompanying table.

TABLE XLIII
SWEET POTATO—SOURCES OF POTASH

Average Yields Over a Five-Year Period

Fertilizer: 800 Pounds per Acre, 8% Phosphoric Acid, 4% Ammonia and 6% Potash from Sources Indicated

Variety: Porto Rico

Average Date Planted: April 25

SOURCE OF POTASH	YIELD IN BUSHELS PER ACRE						Days Required to Mature
	No. 1's	No. 2's	Strings	Jumbos	Rot	Total	
Muriate of Potash.....	193.92	32.91	19.27	11.04	1.09	257.33	190
Kainit	193.33	36.70	18.04	24.54	.47	273.08	190
Sulphate of Potash.....	192.81	31.59	18.51	8.22	.57	251.70	190
Manure Salt.....	188.97	46.50	19.75	17.61	.50	273.33	190
Sulphate of Potash Magnesia	187.68	31.73	19.02	6.31	.12	244.86	190

TABLE XLIV

SWEET POTATO—TOP DRESSING TEST—NITROGEN AND POTASH

Average Yield for Years 1933 to 1935, Inclusive

Fertilizer: 800 Pounds per Acre, 8% Phosphoric Acid, 4% Ammonia and 6% Potash (Applied before Planting)

Variety: Porto Rico

Average Date Planted: April 29

TOP DRESSING	YIELD IN BUSHELS PER ACRE						Days Required to Mature
	No. 1's	No. 2's	Strings	Jumbos	Rot	Total	
50 pounds Muriate of Potash.....	198.16	41.71	16.34	28.35	1.10	285.66	187
100 pounds Muriate of Potash.....	230.09	47.48	16.29	39.31	2.00	335.17	187
200 pounds Muriate of Potash.....	235.78	44.56	15.78	50.73	1.07	347.92	187
100 pounds Nitrate of Soda.....	198.20	48.63	12.98	38.35	.61	298.77	187
200 pounds Nitrate of Soda.....	195.00	65.80	13.54	41.24	.13	315.71	187
300 pounds Nitrate of Soda.....	188.55	51.57	13.73	52.11	.64	306.60	187
Check (No Top Dressing)	194.05	45.29	14.45	32.31	.64	286.74	187

Sweet Potato—Top Dressing Tests With Nitrogen and Potash: These tests have been in progress only three years and the resulting

data cannot be considered conclusive. However, there are indications that a very decided increase in yield of marketable potatoes may be expected from a top dressing of 100 pounds of muriate of potash per acre. In this test the top dressing is made at the first cultivation. Top dressings are made also with nitrate of soda, although no beneficial results as yet have been obtained from this practice. Table XLIV shows the results of top dressings with varying quantities of potash and nitrogen following the use of a complete fertilizer (8-4-6) previous to planting.

Sweet Potato—Ratios of Mineral and Organic Ammonia: In a three-year study of the effects of combinations of mineral and organic sources of ammonia on sweet potato yields, a fertilizer in which one-third of the ammonia is derived from nitrate of soda and two-thirds from cottonseed meal has produced the highest yield of marketable potatoes. This project is being continued for further study.

TABLE XLV

SWEET POTATO—RATIOS OF MINERAL AND ORGANIC AMMONIA

Average Yield for Years 1933 to 1935, Inclusive

Fertilizer: 800 Pounds per Acre, 8% Phosphoric Acid, 4% Ammonia and 6% Potash

Variety: Porto Rico

Average Date Planted: April 18

RATIO OF AMMONIA	YIELD IN BUSHELS PER ACRE						Days Required to Mature
	No. 1's	No. 2's	Strings	Jumbos	Rot	Total	
$\frac{1}{3}$ Nitrate of Soda and $\frac{2}{3}$ Cottonseed Meal	264.71	49.99	19.14	25.31	.41	359.56	198
Cottonseed Meal.....	254.51	50.67	19.08	17.07	.40	341.73	198
$\frac{2}{3}$ Nitrate of Soda and $\frac{1}{3}$ Cottonseed Meal	247.61	48.79	18.14	28.97	1.03	344.54	198
$\frac{1}{4}$ Nitrate of Soda $\frac{1}{4}$ Sulphate of Am- monia, $\frac{1}{4}$ Dried Blood and $\frac{1}{4}$ Cot- tonseed Meal.....	245.30	58.21	16.77	32.86	.02	353.16	198
Nitrate of Soda.....	228.52	55.45	17.27	39.18	.70	341.12	198

Sweet Potato—Summary of Previous Results: The results of a previous study of sweet potato culture, extending over a ten-year period, are reported in Bulletin No. 17, entitled "Sweet Potato Culture in the Coastal Plain of Georgia." The supply of this bulletin has been exhausted, therefore a brief report of its contents is being given in this report as 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.

