

PRODUCTION of VINE CUTTING for LATE PLANTINGS of SWEETPOTATOES in SOUTHERN ALABAMA

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Vine cuttings have definite possibilities and advantages over slips in producing the late crop of sweetpotatoes for market or for seed purposes. This is especially true in southern Alabama.

Potatoes produced from vine cuttings, as a rule, are longer and smoother, and have a smaller diameter. This type is preferred by the market. Also, they are less likely to be affected by disease than potatoes produced from slips. Yield of potatoes planted late in southern Alabama is also likely to be higher from vine cuttings than that from slips planted the same date.

While the foregoing facts have been generally known, there has been no definite information on yield of cuttings and the later effect of cuttings on yields of potatoes in the southern part of the State.

Reported here are 4 years' results from experiments by the Agricultural Experiment Station.

HOW EXPERIMENT WAS DONE

The experiment was carried on (1) to determine how many vine cuttings could be produced from an early planting of slips, and (2) how yields of potatoes from

the 'mother field' were effected by removal of different amounts of vines.

The 'mother field' at Atmore, where the experiment was carried on, was set April 26, which is the average date in the 4-year experiment. The rows were 3 feet apart, with plants 18 inches apart in the row. An application of 800 pounds per acre of 4-10-7 fertilizer was used at planting time. Triumph and Porto Rico varieties were used.

Three rates of vine removal were followed throughout the experiment. These were three fourths, one half, and one fourth of the over growth. The average date of cutting was June 29.

RESULTS of EXPERIMENTS

The treatments, yield of cuttings, and the yield of the 'mother field' after removal of different amounts of vines are given in Table 1. Losses in yield caused by removal of the different amounts of vines are given in Table 2.

Yield of Vines

In the 4-year period, average yield of vine cuttings from Porto Rico variety at the three re-

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moval rates ranged from 40,050 to 86,310 cuttings per acre, or enough to set 3 to 8 acres. The range for the Triumph was 35,887 to 68,715 cuttings per acre.

The Porto Rico variety, set April 26 and cut June 29, produced as follows: three-fourths removal, 86,310 cuttings; one-half removal, 68,220 cuttings; and one-fourth removal, 40,050 cuttings. Thus, enough vine cuttings were produced to plant 7 to 9 acres where three fourths of the vines were removed, 5 to 7 acres where one half of the vines were cut, and 3 to 4 acres where one fourth of the vines were taken.

Removal of three fourths of the vines of the Porto Rico variety on June 29 resulted in a loss in yield of 32 bushels per acre of No. 1 potatoes in the 'mother field;' removal of one half of the vines resulted in a loss of 11 bushels; and removal of one fourth of the vines reduced the yields 24 bushels per acre of No. 1 potatoes.

There was a loss of 70 bushels in the yield of all grades by removal of three fourths of the vines, a loss of 33 bushels by removal of one half of the vines, and a loss of 37 bushels by removal of one fourth of the vines. Similar losses were recorded for the Triumph variety.

APPLICATION of RESULTS

Experimental results reported here apply to the southern fourth of Alabama. It should be borne in mind that no section of the State has quite the possibilities of production of vine cuttings for planting the late crop as southern Alabama. Records at the Main Station, Auburn, indicate that a considerably smaller number of vine cuttings can be produced in central Alabama by June 20 than in the southern part of the State. Furthermore, larger

yields of late-planted potatoes may be made in southern Alabama than in central or northern Alabama.

Possible Returns from Vine Cuttings

Sale of vine cuttings. Three fourths of the vine cuttings removed June 29 from early-planted Porto Rico potatoes averaged 86,310 per acre per year in the 4-year period. Value of this same number of high quality certified slips at \$3 per thousand would amount to \$258.93. At \$1.50 per thousand, the value would be \$129.47 per acre. This range of possible values becomes real values when the grower sells cuttings to other growers or even when he uses the cuttings for his own late plantings.

Results from a preliminary test in 1948 indicate that cuttings might be made earlier for sale to central and northern Alabama growers for late plantings. In another test, removal of three fourths of the vines 3 weeks earlier reduced vine yield a little over one half - to 42,000 cuttings per acre as compared to the 4-year average of 86,310 when cut in late June.

The yield of 42,000 cuttings at a price of \$3 per thousand would give a gross return of \$126 per acre. At \$1.50 per thousand, the return would amount to \$63.

In removing three fourths of all vines, the grower should take into account the yield of potatoes had he not taken cuttings. As previously reported here, three-fourths removal reduced the yield an average of 32 bushels per acre of No. 1 potatoes, and 70 bushels of all grades. The yield loss at the field price usually received for the late crop should be balanced against the return from the sale of cuttings.

Saving in amount of seed required. Planting of limited acreage of early potatoes from slips to provide vine cuttings for the main crop offers a practical way for the farmer to plant his acreage without drawing too much on his stored potatoes.

Approximately 120 to 150 bushels of potatoes are required to plant 15 acres of potatoes established entirely by slips. This quantity of potatoes would require considerable storage space and would reduce the value of potatoes the farmer has for sale by \$250 to \$300. To treat, bed, and take care of the beds for this quantity of potatoes would require a considerable amount of time and labor. The same acreage of potatoes may be planted by bedding 15 to 20 bushels of potatoes, setting 2 acres of early potatoes, and taking vine cuttings from this acreage to set the other 13 acres.

Saving in cost of slips. For those buying plants, use of vine cuttings produced on a small acreage will reduce the cost of establishing a given acreage of late potatoes. High-quality certified slips early in the season will cost from \$3 to \$4 or late in the season \$1.50 to \$2.50 per 1,000. From 10,000 to 12,000 slips are required to plant one acre. Thus, the cost per acre for certified plants late in the season would range from \$15 to \$30. To buy plants for 15 acres, it would cost \$225 to \$450. With 2 acres set with slips, the cost of plants would be only about \$30 to \$48. The remaining acreage would be set from vine cuttings coming from the 2 acres. For the 13 additional acres, there would be only the cost of cutting, gathering, and setting the vines. This cost would be higher than pulling slips, but it would be only a fraction of the cost of buying all of the required slips.

Table 1.--Number Vine Cuttings Produced and the Yield of the Mother Field Where Different Amounts of Tops Were Removed

Variety	Approximate* amount vines removed	Vine cuttings produced per acre 4-year average	Yield potatoes per acre- 4-year average	
			No. 1's	Total
		Number	Bushe ls	Bushe ls
Porto Rico	0	-	209	368
	$\frac{1}{4}$	86,310	191	299
	$\frac{1}{2}$	68,220	212	336
	$\frac{3}{4}$	40,050	199	332
	0	-	237	370
Triumph	0	-	234	378
	$\frac{1}{4}$	68,715	181	312
	$\frac{1}{2}$	59,512	211	333
	$\frac{3}{4}$	35,887	207	354
	0	-	225	375

*Average planting date April 26; average date of vine removal June 29.

Table 2.--Losses in the Yield of the Mother Field from Different Amounts of Vines Removed for Cuttings

Variety	Amount of vines removed *	Reduction in yield per acre due to vine removal - 4-year average	
		No. 1's	Total
		<i>Bushels</i>	<i>Bushels</i>
Porto Rico	$\frac{3}{4}$	32	70
	$\frac{1}{2}$	11	33
	$\frac{1}{4}$	24	37
Triumph	$\frac{3}{4}$	49	64
	$\frac{1}{2}$	19	43
	$\frac{1}{4}$	23	22

*Average planting date April 26; average date of vine removal June 29.