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Prepared by the Farm Management Group at University Farm, St. Paul, Minn.

OUTLOOK FOR POTATO PRODUCTION IN MINNESOTA IN 1928

Potato Production in the United States. Potato production is characterized by years when crops are large and bring low prices, irregularly alternating with years when crops are small and bring high prices. One condition seems to stimulate forces which tend to cause the opposite condition. In general, a low price results in a decrease in production. The decreased production stimulates higher prices, which in turn again stimulates larger production and increased production depresses prices. The potato industry has passed through these stages a number of times, (Table I). In 1916, 1919 and 1925 the production in the United States was relatively low and prices relatively high. Production was relatively

TABLE I
Statistics of Potato Production

Year	United States				Minnesota			
	Acreage (1000 A.)	Yield per acre (bu.)	Total production (1000 bu.)	Dec. 1 price (cents)	Acreage (1000 A.)	Yield per acre (bu.)	Total produc- tion (1000 bu.)	Dec. 1 price
1908	3503	86.2	302,000	69.7	145	76	11,020	56¢
1909	3669	107.5	394,553	54.2	224	120	26,880	35
1910	3720	93.8	349,032	55.7	220	61	13,420	64
1911	3619	80.9	292,737	79.9	225	115	25,875	58
1912	3711	113.4	420,647	50.5	245	135	33,075	28
1913	3668	90.4	331,525	68.7	275	110	30,250	52
1914	3711	110.5	409,921	48.7	270	114	30,780	32
1915	3734	96.3	359,721	61.7	285	106	30,210	39
1916	3565	80.5	286,953	146.1	280	60	16,800	130
1917	4384	100.8	442,108	122.8	300	112	33,600	91
1918	4295	95.9	411,860	119.3	312	105	32,760	75
1919	3542	91.2	322,867	159.5	332	87	28,884	153
1920	3657	110.3	403,296	114.5	319	99	31,881	80
1921	3941	91.8	361,659	110.1	430	75	32,250	90
1922	4307	105.3	453,396	58.1	486	90	43,740	35
1923	3816	109.0	416,105	78.1	399	102	40,698	39
1924	3327	126.7	421,585	62.5	340	132	44,880	27
1925	3092	104.6	323,465	186.8	276	97	26,772	154
1926	3122	113.5	354,328	141.4	298	100	29,800	115
1927	3505	114.7	402,149	96.4	328	101	33,128	60

U.S.D.A. Yearbooks, Crops and Markets, Minnesota Annual Crop and Livestock Statistics 1922-23, 1925-26.

high and prices relatively low in 1912, 1917 and 1922. Since the high prices of 1925 both the acreage and the production have been increasing. In 1925 the United States produced 323,465,000 bushels of potatoes, in 1926 the amount increased to 354,328,000 bushels, while in 1927 a total of 402,149,000 bushels was produced.

Future Production. The 35 late crop states, according to the United States Department of Agriculture reports, are expecting to increase the potato acreage next year by 10 per cent. These intentions seem general and more than $2\frac{1}{2}$ times as many growers intended to increase the acreage as intended to decrease it. Growers in the ten early potato states plan to increase their acreage by 5 per cent. If they carry out their intentions it will be the heaviest planting of early potatoes in five years. If the late crop producers also carry out their intentions the total acreage in potatoes next year will be the greatest in any year since 1922. While the yield per acre is much more important than the acreage in determining the total production, it is possible to determine something of the intended acreage whereas nobody can tell with any degree of accuracy what the yields will be. If the acreage in 1928 is increased as intended and yields are only average it will mean the largest production since 1922. This would probably mean a lower average price for the United States.

Planning the 1928 Potato Acreage for Minnesota. In the last seven years Minnesota has grown more acres of potatoes than any other state in the union. In three of the seven years she has produced more bushels of potatoes than any other state and in none of these years has she been lower than third in the total production. Minnesota is one of the leading potato producing states and potatoes play an important part in her agriculture. The producers in this state have had their ups and downs as have producers in the rest of the United States. A comparison of the statistics for Minnesota with those for the United States will show that the trend in production and price in Minnesota has tended to follow the trend for the United States as a whole. However, while in 1922 the price was the lowest since 1914 for the United States as a whole, Minnesota producers had low yields per acre that year which cut the local production and consequently the Minnesota price did not go as low as it did in 1924. In 1924 production in both the United States and Minnesota was high and the Minnesota price dropped to 27 cents. If production next year is high in both the United States and Minnesota, as present conditions indicate it may be, the Minnesota price may be expected to be quite low.

In view of these indications, Minnesota growers would do well to reconsider any plans for an increased acreage in potatoes in 1928. They should think over other possible alternatives before definitely deciding their program. Those who have better alternatives than to grow potatoes should make every effort to keep their costs per bushel as low as possible.

George A. Sallee.

WHAT MAKES POTATO PRODUCTION PROFITABLE?

Economic Advantage. Potato production is becoming concentrated in the best producing sections. Most of the potatoes come from districts where growers are using modern methods and have an acreage large enough to use labor saving machinery. Because potatoes are a bulky, cheap crop they can not economically be transported considerable distances. Because of the proximity to the consuming centers, and because potatoes are a cool climate crop, the northern tier of the states are the most important in potato production in the United States.

Physical Requirements. This vegetable is a cool weather crop. However, by adapting the time of seeding to weather conditions, potatoes can be produced quite generally over the entire country. Potatoes are not sensitive to soil conditions but do best on sandy loams well supplied with organic matter. They do well on well drained, medium heavy clay soils or light soils with a good moisture supply. Because 400 to 600 pounds of water are required to produce one pound of dry matter the moisture supply must be ample, particularly during the season when the tubers develop.

Cultural Adaptation. Potatoes are an intensive crop. The bulk of the production comes from areas where the growers have a large enough acreage to permit the investment in suitable machinery. Potatoes are a valuable crop in cut-over sections and on small farms where a small acreage will provide a market for considerable hand labor. They can be planted advantageously in rotations to aid in combating weeds.

Importance of Yield. Only those growers who can produce higher than average yields can expect to find the crop consistently profitable. The yield is a very important factor in determining profits. Large yields are usually correlated with low costs per unit.

TABLE II
Effect of Yield of Potatoes on Cost per Acre and per Bushel
Pine County Farm Accounting Route 1925

Yield Group	Average yield	Cost per acre	Cost per bushel
Under 100 bu.	82	\$41	50¢
100 - 180 "	150	44½	30
Over 180 "	208	44½	21

In Table II note that there was little variation in cost per acre between the three yield groups. As the yield increased from 82 bushels in one group to 150 in another and to 208 in the high yield group, the cost decreased from 50 cents to 30 cents and to 21 cents respectively.

Marketing Plan. Producers must determine annually whether they should market from the field or store their potatoes. Table III indicates that when prices were low in the fall the increase in price during the winter did not pay for storage. However, when potatoes were high in the fall the price advanced considerably during the winter and storage was profitable. Growers in Minnesota would do well to study the price predictions in the Minnesota Potato Market Letter distributed by the Agricultural Extension Division of the University of Minnesota.

TABLE III
Average Advance in Wholesale Price of State (New York) Potatoes
per bushel at New York City as Related to Purchasing Power
for Potato Prices 1870-1915

Purchasing power of October prices	Number of years	Advance in Price		
		December over October	February over October	April over October
Very low	12	4¢	6¢	8¢
Low	11	7	6	3
High	11	8	16	24
Very high	12	11	15	23
Average	46	7	11	15

From "Farm Economics" Dec. 1927, Cornell University, Ithaca, N.Y.