THE GROWING RED RIVER VALLEY EDIBLE BEAN INDUSTRY

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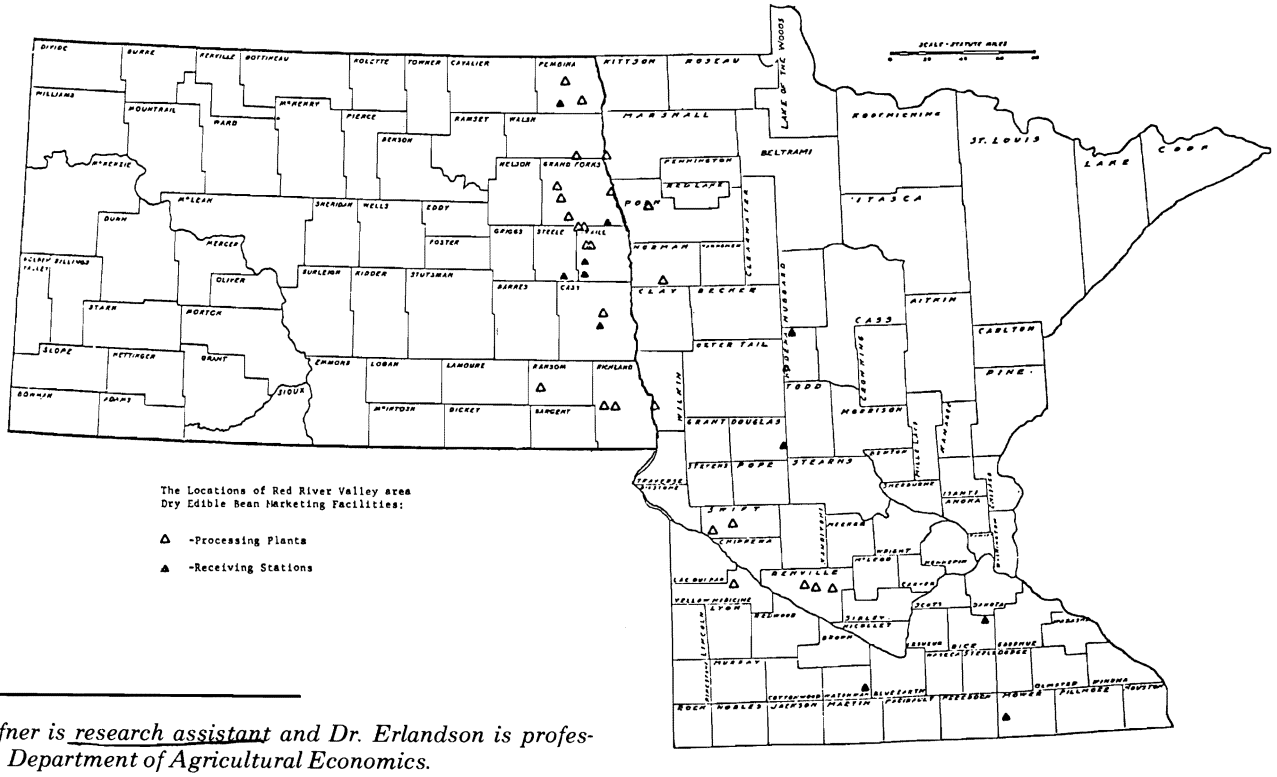
ABSTRACT

The large-scale production and processing of dry edible beans in the Red River Valley began in 1960 and now accounts for nearly 12 percent of the nation's total acreage of beans. There are about 2000 growers in Minnesota and North Dakota producing pinto and navy beans. Beans are processed in 25 local plants and shipped in bulk form to canners and wholesale distributors in the United States and elsewhere. Red River Valley growers compete favorably with growers in other regions in the production of beans. The sale of beans in North Dakota amounts to over $17 million and accounts for one percent of the state's annual agricultural income. Edible beans are the cheapest source of protein available to American consumers.

The beginnings of large-scale, commercial production of dry edible beans in the Red River Valley can be traced to the year 1960 when a farmer from Oslo, Minnesota, Max Campbell, planted and harvested thirty acres of pinto beans after having grown and tested the bean in a garden test plot for numerous years. Campbell's first shipment of pinto beans went to a marketing firm in Fairview, Montana where the beans could be processed (i.e., cleaned and graded for human consumption) and sold, since there were not yet facilities for this purpose in the Red River Valley.

During the years that followed, the production of this crop spread to various farms of the Valley. Although production and harvesting methods were



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RED RIVER VALLEY AREA PRODUCTION STATISTICS[a]

	Area Planted (1,000 acres)			Area Harvested (1,000 acres)			Yield Per Harvested Acre in Pounds (cleaned basis)		Production (1,000 cwt.) (cleaned basis)		
	North Dakota	Minnesota	Total	North Dakota	Minnesota	Total	North Dakota	Minnesota	North Dakota	Minnesota	Total
1964	34	15	49	25	9	34	660	610	165	55	220
1965	27	9	36	25	4	29	900	700	225	28	258
1966	21	7	28	20	7	27	1,470	840	294	59	353
1967	23	6	29	22	6	28	970	700	213	42	255
1968	25	6	31	24	5	29	1,000	875	240	44	288
1969	25	9	34	22	7	29	1,050	1,000	231	70	301
1971	33	19	52	31	18	49	1,300	1,300	403	204	607
1971	35	15	50	33	14	47	1,300	1,450	429	203	632
1972	84	41	125	78	38	116	1,200	1,100	936	418	1,354
1973	102	38	140	100	37	137	1,050	1,600	1,050	592	1,642
1974	134	98	232	94	87	181	650	800	611	616	1,307
1975[b]	127	53	180	122	48	170	970	800	1,183	384	1,567
1976[c]	144	45	189	139	42	181	750	867	1,043	364	1,407
1977[cb]	—	—	—	110	31	141	1,050	1,300	1,155	403	1,558

a United States Department of Agriculture, **Agricultural Statistics,** *section "Dry Edible Beans".*

b Preliminary estimates

c 1976 and 1977 data taken from United States Department of Agriculture, Agricultural Marketing Service, **Bean Market News,** *Denver, Colorado, September 21, 1977; citing the Crop Reporting Board, SRS, USDA.*

crude and yields were low, edible bean production offered a lucrative and attractive production alternative in the face of sagging grain prices. Farmers found that not only were edible beans well adapted to the area and profitable to raise, but that they also were desirable in a crop rotation system with small grains. Since beans are leguminous, they increase soil fertility, leaving the land in excellent condition for the following year's planting. Being a row crop, they serve as an effective means of weed control, especially in those areas too cool for the production of soybeans. Gradually, over the years, farmers became quite adept in the production and harvest of this crop, and yield averages nearly doubled.

In 1961, Campbell built a processing plant at Oslo to handle local production. In 1963, he constructed two more plants and sold one of them to the Gormley Brothers from Wyoming, who in 1964 built a fourth plant. From this point the industry developed very quickly throughout the Red River Valley area, and spread as far as south-central Minnesota.[1]

Complementary services developed as bean farming spread. North Dakota State University hired and assigned specialized personnel to work in the area of edible bean research and pathology, and extension personnel to advise farmers about growing the crop. A private consulting firm at Northwood, North Dakota established operations to aid edible bean farmers in production problems. A machine shop at Minto, North Dakota began manufacturing the Schanilec bean cutter which was designed by a farmer of the area, and a network of edible bean production and harvesting equipment dealers sprang up throughout the area.

Today, most Red River Valley edible bean farmers have established relatively sound production practices and have included edible beans in a permanent crop rotation system. Some of the edible bean producers were already producing soybeans and corn when edible beans were introduced, so they had the planting and cultivation equipment necessary for edible bean production. They have, however, invested in specialized edible bean harvesting equipment, such as bean cutters and windrowers, and many of the more intensive producers have also purchased special bean combines and conveyor-elevators. Today there are about 2,000 producers of edible beans in Red River Valley two-state area.[2]

[1] *For the purposes of this paper, the Red River Valley area shall include all dry edible bean production zones in North Dakota and Minnesota. Please see the accompanying table.*

[2] *Timothy Courneya, Executive Secretary of the Red River Valley Edible Bean Growers' Association, contributed this statistic in an interview on September 23, 1977. The number of growers was estimated, based on reports contributed to the Edible Bean Grower's Association by the area's edible bean processing firms.*

Not only farmers and local businessmen became involved with the new crop. Numerous edible bean processing firms, noting the potential of the Red River Valley for bean production, built processing and storage facilities in the area. Firms from the Colorado-Wyoming-Montana-Idaho region, where pinto beans are grown intensively under irrigation, found that the fledging North Dakota-Minnesota industry was very competitive and was able to undercut them in price, simply because pinto beans could be raised in the Red River Valley under dry-land conditions more cheaply than in their region. Faced with this situation, and given the proven acceptability of Red River Valley grown beans, firms with national and world-wide marketing interests began to establish processing facilities in the Red River Valley.

Today, there are no less than 16 different edible bean marketing firms in the Red River Valley area, employing about 100 full-time workers, plus part-time and seasonal labor. Thirteen of these firms have established edible bean processing plants with permanent storage facilities at 25 different locations (see the accompanying map). The average storage capacity per plant is estimated to be 100,000 cwt., and the average value of these plants is approximately a half million dollars each.[3]

In addition to the 25 plants with permanent processing and storage facilities, certain firms have established satellite receiving stations through which localized production is handled. There are at least 12 receiving stations in the Red River Valley area. Some have large, semi-permanent storage facilities. Other consist simply of a portable bean conveyor-elevator and portable grain tanks or a truck-trailer. The average investment in bean handling equipment, storage facilities, etc. per receiving station may be around $150,000, for a combined total investment in receiving stations among all firms of $1,800,000. This figure is relatively low, since scales and storage facilities for the receiving stations can often be rented from local grain elevators. Thus, the estimated combined investment in processing plants, storage faciltities, and receiving stations among all firms in the Red River Valley totals nearly 15 million dollars.

One might also point to the annual volume and value of the Red River Valley's bean production. The Statistical Reporting Service reported that North Dakota and Minnesota produced a combined total of slightly over 1.5 million cwt. of edible beans from 170,000 harvested acres in 1975. Edible bean acreage ranks just slightly lower than the sugarbeet and potato acreage of the two-state area, and accounts for 11.7 percent of all U.S. harvested edible bean acreage, and about 8.5 percent of the total U.S. annual bean production.[4]

Considering 1.5 million cwt. as an average annual edible bean production figure for the Red River Valley, and an average price per cwt. of $16.00,[5] the annual income from edible bean production is $24 million. If the secondary or indirect economic effects revolving around the industry are included, using an income-generator multiplier of three, the estimated total income generated by the edible bean industry in the two-state area, is approximately $72 million annually[6]. Furthermore, this impact is concentrated in certain areas. According to the 1974 Census of Agriculture, 75 percent of the farms producing edible beans in North Dakota lie in five counties of the Red River Valley, and 80 percent of the total North Dakota edible bean production derives from these five counties[7]. Annual edible bean income in North Dakota, assuming a production of 1.1 million cwt. and a price of $16.00 per cwt., amounts to $17.6 million. This constitutes about 1 percent of the state's total income derived through the sale of agricultural products.[8]

Given that current production and yield conditions can be held constant or improved and barring uncontrollable disease problems or other unforeseen calamities, it is likely that the edible bean industry in the two-state area will increase in importance. Edible beans (especially pinto beans) can be raised more cheaply in the Red River Valley than in other production regions where the bulk of bean production is presently occuring. This fact, together with the increased world-wide demand for cheap sources of protein food, makes the future of this industry bright. Edible beans have a high protein content and are easily transportable. They are consumed around the world, and have been recognized by the United States Department of Agriculture as the least expensive source of protein available to the American consumer today. It is probable that the export market for this inexpensive protein source will expand at an increasing rate in the years ahead. In this respect, export sales also contribute to our nation's balance of payments position.

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[3] *This figure was arrived at on the basis of interviews with bean processors and after consultation with a local construction firm which builds bean elevators.*

[4] *United States Department of Agriculture,* **Agricultural Statistics 1976.**

[5] *We assume here that the bean processor received $16.00 per cwt. as an average price for all grades of processed beans which he markets.*

[6] *Dr. Thor Hertsgaard, professor of agricultural economics at North Dakota State University, was consulted on September 21, 1977. Dr. Hertsgaard and other economists estimate, on the basis of research work concerning the state's economy, that each dollar of income derived from the sale of agricultural crops in North Dakota generates a total increase in business volume within the states of about three dollars.*

[7] *United States Department of Commerce, Bureau of Census,* **1974 Census of Agriculture-North Dakota State and County Data,** *Volume I, Part 34, p. III-9.*

[8] *United States Department of Agriculture. Economic Research Service.* **Farm Income Statistics,** *ERS Bulletin 576. July 1977, p. 22.*