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UNIVERSITY OF MINNESOTA
Department of Agriculture
and the
UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Cooperating

FARM BUSINESS ANALYSIS SURVEY
OF 44 FARMS IN THE
CLEAR LAKE SOIL CONSERVATION DEMONSTRATION AREA
1941

Cooperator _____

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FARM BUSINESS ANALYSIS SURVEY
OF 44 FARMS IN THE
CLEAR LAKE SOIL CONSERVATION DEMONSTRATION AREA
SHERBURNE COUNTY, MINNESOTA¹

1941

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INTRODUCTION

Purpose of Study

During the fall of 1941 the **Federal Government** through the Soil Conservation Service established a soil conservation demonstration project in the Clear Lake Area of Sherburne County. Technical assistance was made available to farmers in establishing wind, water, and soil erosion control demonstrations on their farms.

Data contained in this report were obtained for the use of farm operators and for planning farms for soil conservation. Good planning for soil conservation considers both the physical and economic aspects of the problems involved.

Source of Data³

This report is based upon a survey made of 44 of the 68 farms operated in the demonstration area and covers the period April 1, 1941 to April 1, 1942. Included in the survey was a record of inventories, farm expenses and receipts, farm produce used in the house, unpaid family labor, crop acreages and production, and livestock numbers and production. Information was also obtained on the wind erosion problem and the effectiveness of control measures practiced by the farmers.

¹ The Department of Agricultural Economics, University of Minnesota and the Soil Conservation Service, United States Department of Agriculture, cooperated in this study.

² Project Supervisor, Economic Research, Soil Conservation Service. The author wishes to acknowledge with appreciation the help of George A. Pond in conducting this study.

³ Gardiner A. Graham of the Soil Conservation Service, and Frank Miller and G. E. Toben of the Division of Agricultural Economics, University of Minnesota assisted in taking the surveys.

Description of Area

The project area consists of approximately 23,000 acres located in parts of Clear Lake, Haven and Palmer townships in Sherburne County. The southern two-thirds of the area along the Mississippi River is a sand plain that extends back to the gently undulating area north of the Elk River. The soil is characterized by a very dark greyish loamy sand to sandy loam from 6 to 12 inches in thickness and underlain with sand or mixed sand and gravel. The depressions in the northern part of the area often have a peaty surface and are frequently underlain with marl. The level, open cropland provides little protection from the sweeping effects of the wind. Drifted sand along fence rows and other barriers are visible evidence of wind erosion.

The annual precipitation in the area is approximately 27 inches of which 65 per cent occurs between April 1 and September 1. Precipitation during the period April 1, 1941, to April 1, 1942 was $5\frac{1}{2}$ inches more than the 65-year average. Temperatures were also above normal. The last killing frost was May 10 and the first killing frost was September 28, giving a frost-free period of 141 days which is average for the area. The prevailing wind is from the northwest, although south winds are frequent during the summer and fall.

Table 1.--Monthly and Annual Precipitation and Temperature, St. Cloud
April 1, 1941 to April 1, 1942.

		Precipitation		Temperature	
		Monthly and total	Departure from normal	Monthly and annual means	Departure from normal
		Inches	Inches	Degrees	Degrees
1941	April	2.08	+0.20	49.8	+5.5
	May	5.23	+1.84	60.4	+4.1
	June	6.19	+1.81	66.4	+0.7
	July	1.23	-2.33	71.9	+0.7
	August	5.83	+2.47	68.4	+0.2
	September	5.02	+1.60	59.8	+0.4
	October	3.28	+1.08	47.2	-1.5
	November	0.01	-1.20	32.6	+2.4
	December	0.86	+0.32	21.4	+4.6
1942	January	0.02	-0.70	18.6	+8.8
	February	0.26	-0.40	16.8	+3.4
	March	1.94	+0.85	33.6	+6.2
	Annual	31.95	+5.54	45.6	+3.0

Numerous county aid and state aid roads provide easy access to all weather state highways over which farm produce are hauled to markets in St. Cloud, St. Paul, Minneapolis, and South St. Paul. The area is also served by the Northern Pacific Railroad.

Data contained in this report are on the whole farm basis without regard to tenure, i.e., the information is presented as if each farm were owned by its operator. Expenses of the landlord such as real estate taxes, building repair, insurance, etc., are estimates obtained from the tenant.

1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	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4 The total "bank notes" for each form is a measure of the number of forms received and accounts for both the amount of disbursements and the cost of paper. It is an accounting device of a firm which is a two-part unit in which the cost of paper and other expenses is allocated to the various departments.

[illegible][illegible]

"I am not a Communist," said the man who was sitting next to me. "I am not a Communist, I am not a Communist, I am not a Communist." He said this three times in a row.

Table 2.--Distribution of Farm Inventories (Beginning of Year), 1941

Items	Your farm	Average 44 farms	9 most profitable farms	9 least profitable farms
Size of farm (acres)	_____	364	708	190
Size of business (work units) ¹	_____	524	865	341
Horses	_____	\$288	\$441	\$187
Productive livestock (total)	_____	1620	2474	813
Dairy and dual purpose cows	_____	806	1238	465
Other dairy and dual purpose cattle	_____	318	550	168
Beef cattle (including feeders)	_____	181	222	0
Hogs	_____	189	342	111
Sheep	_____	46	52	0
Poultry (including turkeys)	_____	80	70	69
Crop, seeds, and feed	_____	446	962	145
Machinery and equipment (total)	_____	1638	3252	807
Power machinery (farm share)	_____	717	1271	403
Crop and general machinery	_____	842	1849	372
Livestock equipment and supplies	_____	79	132	32
Buildings, fences, etc.	_____	4036	6427	2514
Land	_____	3747	6062	2016
Total farm capital	_____	11775	19618	6482

¹ The total "work units" for any one farm is a measure of size of farm business and accounts for both the amount of livestock and the acres of crops. It is the accomplishment of a farm worker in a ten-hour day working on crops and productive livestock at average efficiency.

The number of work units for each animal and each acre of crops used in this report are listed as follows:

Item	Per	No. of work units	Item	Per	No. of work units
Dairy and dual purpose cows	cow	14.0	Small grain	acre	0.8
Other dairy & dual purpose cattle)		4.0	Soybeans for grain	"	1.0
Beef breeding herd)	animal	4.0	Sweet corn	"	2.5
Sheep - farm flock)	unit*	4.0	Corn, grain	"	1.8
Hens	100 hens	28.0	Corn, silage	"	2.1
Feeder cattle	head	2.5	Corn, fodder	"	1.5
Hogs) cwt.	.3	Alfalfa hay	"	1.0
Turkeys) produced	.7	Soybean hay	"	1.4
			Other hay crops	"	.6
			Canning peas	"	2.0

* Animal unit represents one cow, one bull, one feeder steer or heifer, two head of other cattle, seven head of sheep, fourteen lambs, five hogs, ten pigs, 100 hens, or 1,400 lbs. turkeys produced.

Table 2.--(continued) Distribution of Farm Inventories (End of Year), 1941

Item	Your farm	Average 44 farms	9 most profitable farms	9 least profitable farms
Horses		\$293	\$449	\$194
Productive livestock (total)		2436	4244	1072
Dairy and dual purpose cows		911	1541	445
Other dairy & dual purpose cattle		502	777	301
Beef cattle (including feeders)		300	569	0
Hogs		559	1125	239
Sheep		55	116	0
Poultry (including turkeys)		109	116	87
Crop, seeds, and feed		600	1266	178
Machinery and equipment (total)		1775	3394	778
Power machinery (farm share)		772	1302	352
Crop and general machinery		919	1918	397
Livestock equipment and supplies		84	174	29
Buildings, fences, etc.		3989	6219	2567
Land		3747	6062	2016
Total farm capital		12840	21634	6805
Increase in farm capital during year		1065	2016	323

Table 3.--Distribution of Acres in Farms, 1941

Crop	Number growing this crop	Your farm	Average of 44 farms	9 most profitable farms	9 least profitable farms
Wheat	25		4.9	7.9	2.2
Oats	41		30.5	54.7	18.9
Barley	3		.7	2.4	0
Rye	41		65.2	144.9	26.8
Canning peas	2		.5	0	0
Soybeans	4		1.9	6.9	0
Miscellaneous grains*	5		1.2	3.0	1.3
TOTAL SMALL GRAIN AND PEAS			104.9	219.8	49.2
Corn, grain	34		36.5	68.1	27.3
Corn, silage	33		10.0	13.5	4.9
Corn, fodder	26		21.6	25.5	17.7
Sweet corn	2		.2	1.1	0
Potatoes and truck crops	33		.9	1.4	1.1
TOTAL CULTIVATED CROPS			69.2	109.6	51.0
Alfalfa	35		17.9	33.2	4.8
Red clover	3		.6	1.8	0
Miscellaneous legumes	8		1.9	4.2	0
Timothy	17		6.2	14.2	.5
Annual hays	11		2.8	4.2	5.4
Wild hay - tillable	9		3.4	9.6	.7
TOTAL TILLABLE LAND IN HAY			32.8	67.2	11.4
Alfalfa & alfalfa brume pasture	3		1.0	.7	0
Miscellaneous legume pasture	2		.4	0	1.5
Other tillable pasture	21		11.6	31.3	3.7
TOTAL TILLABLE LAND IN PASTURE			13.0	32.0	5.2
Tillable land not cropped	31		21.8	55.1	11.7
TOTAL TILLABLE LAND			241.7	483.7	128.5
Phalaris hay (non-tillable)	2		.3	.9	0
Wild hay (non-tillable)	17		6.4	.5	10.6
Non-tillable pasture	44		91.5	186.1	41.3
Timber not pastured	5		1.7	1.2	0
Roads and waste			16.2	24.1	5.7
Farmstead			6.2	11.9	3.9
TOTAL ACRES IN FARM			364.0	708.4	190.0

* Includes flax, millet, oats and barley, and oats and wheat.

Table 4.--Crop Yields per Acre, 1941

	Your farm	Average 44 farms	9 most profitable farms	9 least profitable farms
Wheat	bu.	11.7	12.1	12.4
Oats	bu.	22.3	23.0	16.2
Rye	bu.	10.3	10.2	7.8
Corn, grain	bu.	26.5	26.6	22.2
Corn, silage	tons	6.0	6.1	6.1
Corn, fodder	tons	1.5	1.7	1.9
Potatoes	bu.	54.6	35.2	26.3
Alfalfa hay	tons	1.5	1.6	1.1
Soybean hay	ton	.9		
Millet hay	ton	1.1		
Wild hay (tillable)	ton	1.2		
Wild hay (non-tillable)	ton	1.1		.9
INDEX - CROP YIELDS		100.0	100.2	89.5

Table 5.--Percentage Distribution of Use of Land per Farm, 1941

Land Use	Your farm	Average 44 farms	9 most profitable farms	9 least profitable farms
Percentage of Farm				
Small grain and peas		28.8	31.0	25.9
Cultivated crops		19.0	15.5	26.8
Hay (tillable)		9.0	9.5	6.0
Pasture (tillable)		3.6	4.5	2.7
Tillable land not cropped		6.0	7.8	6.2
Total tillable land		66.4	68.3	67.6
Hay (non-tillable)		1.8	2.2	5.6
Pasture (non-tillable)		25.1	26.3	21.7
Timber not pastured		.5	.1	0
Buildings, roads and waste		6.2	5.1	5.1
TOTAL	100.0	100.0	100.0	100.0

Table 6.--Livestock Numbers, Production and Gross Returns,* 1941

	Your Farm	Average 44 farms	9 most profit- able farms	9 least profit- able farms
DAIRY CATTLE				
Number of farms reporting dairy cattle		25	4	8
Gross returns per dairy cow		\$101.53	\$144.85	\$63.97
Pounds of butterfat per dairy cow		191	180	144
Number of head of dairy cows		11.6	17.1	8.0
Gross returns per head other dairy cattle		\$ 31.07	\$ 29.98	\$24.06
Gross returns per animal unit all dairy cattle		\$ 86.67	\$120.50	\$58.67
Number of animal units all dairy cattle		16.9	24.5	12.0
DUAL PURPOSE CATTLE				
Number of farms reporting dual purpose cattle		17	5	1
Gross returns per dual purpose cow		\$ 80.40	\$100.67	\$43.25
Pounds of butterfat per dual purpose cow		153	187	101
Number of head of dual purpose cows		13.1	17.7	8.5
Gross returns per head other dual purpose cattle		\$ 29.77	\$ 38.83	\$10.00
Gross returns per A. U. all dual purpose cattle		\$ 71.66	\$ 93.37	\$35.98
Number animal units all dual purpose cattle		20.9	29.2	12.3
PRICE RECEIVED PER POUND OF BUTTERFAT SOLD AS				
Manufacturing cream (cents) 41 farms		37.8	37.9	37.8
Wholesale cream or milk (cents) 3 farms		40.4	39.7	-
BEEF BREEDING CATTLE				
Number of farms reporting beef breeding herds		3	1	0
Gross returns per A. U. of beef breeding cattle		\$ 70.91	\$ 98.18	-
Number of A. U. of beef cows and bulls per herd		18.8	28.5	-
FEEDER CATTLE				
Number of farms reporting feeder cattle		15	3	0
Gross returns per head feeder cattle		\$ 93.91	\$128.66	-
Number of head of feeder cattle		5.8	8.7	-
SHEEP.- FARM FLOCK				
Number of farms reporting sheep		8	3	0
Gross returns per head** of sheep		\$ 9.64	\$ 10.33	-
Number of head of sheep		29.9	23.8	-
HOGS				
Number of farms reporting hogs		43	9	9
Gross returns per cwt. of hog produced		\$ 11.46	\$ 11.87	\$11.54
Pounds of hog produced		11,328	21,684	5,486
Price received per cwt. of hogs sold		\$ 10.22	\$ 10.64	\$ 9.95
CHICKENS				
Number of farms reporting chickens		42	7	9
Gross returns per hen		\$ 2.56	\$ 2.92	\$ 2.57
Number of hens		134	165	116
Eggs laid per hen		96	94	110
Price received per dozen eggs sold (cents)		21.7	20.5	19.7

*Gross returns is the net increase or decrease in the value of animal plus returns from products sold if any.

**Two lambs under 6 months of age considered as one head.

Table 7.--Family Living Furnished by the Farm, 1941

		Your farm	Average of 44 farms	9 most profitable farms	9 least profitable farms
<u>Quantities</u>					
Whole milk	qts.	_____	629	527	718
Skimmilk	qts.	_____	33	0	0
Cream	pts.	_____	319	294	279
Butter	lbs.	_____	9	0	11
Eggs	doz.	_____	193	183	201
Poultry	head	_____	48	33	40
Cattle	lbs.	_____	126	133	44
Hogs	lbs.	_____	574	836	523
Sheep	lbs.	_____	6	0	0
Farm fuel	cds.	_____	8	10	1
<u>Values</u>					
Whole milk		_____	\$21.64	\$19.32	\$22.43
Skimmilk		_____	.13	0	0
Cream		_____	33.77	32.05	28.80
Butter		_____	3.75	0	4.45
Eggs		_____	42.16	38.53	42.30
Poultry		_____	33.42	20.34	52.36
Cattle		_____	13.18	18.89	6.11
Hogs		_____	61.97	82.50	46.71
Sheep		_____	.39	0	0
Vegetables and fruit		_____	35.07	28.33	35.00
Farm fuel		_____	37.50	48.33	7.22
Rental value of house*		_____	154.05	218.99	111.80
Total		_____	437.03	507.28	357.18

* Computed at 10 per cent of value of house.

Farm Earnings¹

Earnings of the 44 farms in 1941 ranged from a loss of \$425 on the least profitable farm to \$5807 on the most profitable farm (figure 1 on page 12). This was a difference of \$6232. Average earnings of all farms was \$1944 (table 8). Average earnings for the 9 most profitable farms was \$4258 and for the 9 least profitable farms was \$339. The difference between the averages of these two groups was \$3919.

¹ The measure of financial success used in this report is called "Operator's Labor Earnings." Operator's labor earnings represents the returns to the operator for his labor and management. It is the difference between the total farm receipts and total farm expenses. Total farm receipts include farm cash receipts, and credit for increases in farm inventory and farm produce used in the house. Total farm expenses include farm cash expenses, deductions for decreases in inventory, cost of board furnished hired help, interest on farm investment, and a charge for unpaid family labor used in the farm business.

Table 8.--Summary of Farm Earnings (Cash Statement), 1941

Items	Your farm	Average of 44 farms	9 most profitable farms	9 least profitable farms
FARM RECEIPTS				
Horses		\$ 11	\$ 33	\$ 3
Dairy and dual purpose cows		264	575	103
Dairy products		699	1142	349
Other dairy and dual purpose cattle		193	531	78
Feeder and beef cattle		208	422	0
Hogs		903	1889	463
Sheep and wool (including feeders)		44	61	0
Poultry (including turkeys)		129	436	34
Eggs		189	182	177
Crops sold - corn		92	55	86
Crops sold - small grain		278	810	53
Crops sold - other		59	95	11
Power machinery		59	58	0
Crop and general machinery		21	34	1
Miscellaneous		81	109	100
Income from work off farm		44	51	56
A. A. A. payment		193	402	88
(1) Total farm sales		3467	6885	1602
(2) Increase in farm capital		1065	2016	323
(3) Family living from the farm		437	507	357
(4) Total farm receipts (sum of (1)+(2)+(3))		4969	9408	2282
FARM EXPENSES				
Horses bought		1	0	3
Dairy and dual purpose cows bought		25	0	6
Other dairy & dual purpose cattle bought		54	87	83
Beef cattle bought (including feeders)		90	199	0
Hogs bought		47	162	11
Sheep bought		10	45	0
Poultry bought (including turkeys)		21	40	11
Miscellaneous livestock expense		12	12	14
Miscellaneous crop expense		80	112	44
Feed		300	484	253
Power machinery, farm share, new		200	212	6
Power machinery, farm share, upkeep		244	579	115
Custom work hired		94	62	95
Crop and general machinery, new		148	206	36
Crop and general machinery, upkeep		46	111	32
Livestock equipment, new		12	54	0
Livestock equipment, upkeep		3	7	2
Buildings and fencing, new		117	122	229
Buildings and fencing, upkeep		49	114	56
Hired labor		194	321	263
Taxes		225	477	118
Insurance		27	28	12
General farm		5	8	4
(5) Total farm purchases		2004	3442	1393
(6) Decrease in farm capital		0	0	0
(7) Board for hired labor		42	86	57
(8) Interest on farm capital*		615	1031	332
(9) Unpaid family labor		364	591	161
(10) Total farm expenses (sum of (5) to (9))		3025	5150	1943
(11) Operator's labor earnings (4) - (10)		1944	4258	339

* 5 per cent of farm investment (average of beginning and ending inventories).

Table 9.--Summary of Farm Earnings (Enterprise Statement)*, 1941

	Your farm	Average of 44 farms	9 most profitable farms	9 least profitable farms
RETURNS AND NET INCREASES				
All productive livestock		3408	6687	1556
Dairy and dual purpose cows		1107	2076	483
Other dairy and dual purpose cattle		330	687	133
Beef breeding herd		105	311	0
Feeder cattle		134	257	0
Hogs		1287	2593	627
Sheep		44	81	0
Chickens		341	429	313
Turkeys		60	253	0
Crops, seed and feed		390	894	23
A. A. A. payment		193	402	88
Miscellaneous		157	218	156
Income from work off farm		44	51	56
(1) Total returns and net increase		4192	8252	1879
EXPENSES AND NET DECREASES				
Total power		432	814	267
Tractor		200	512	65
Truck		35	69	0
Auto (farm share)		88	102	97
Electric plant or current (farm sh.)		8	19	10
Horses		101	112	95
Crop and general machinery		96	214	42
Buildings and fencing		135	334	177
Livestock equipment		10	19	5
Misc. productive livestock expense		9	10	7
Custom work hired		94	61	95
Real estate taxes		210	454	110
Personal property tax		15	23	8
Insurance		27	28	12
General farm		5	8	4
Labor		600	998	481
Interest on farm capital 5%		615	1031	332
(2) Total expense and net decrease		2248	3994	1540
(3) Operator's labor earnings (1) minus (2)		1944	4258	339

*Cash receipts and expenses are adjusted for changes in inventory for each enterprise and for each item of expense in order to show total receipts and net increases, and total expenses and net decreases. The operator's labor earnings are the same as those on page 10.

Operator's
Labor
Earnings
\$6000

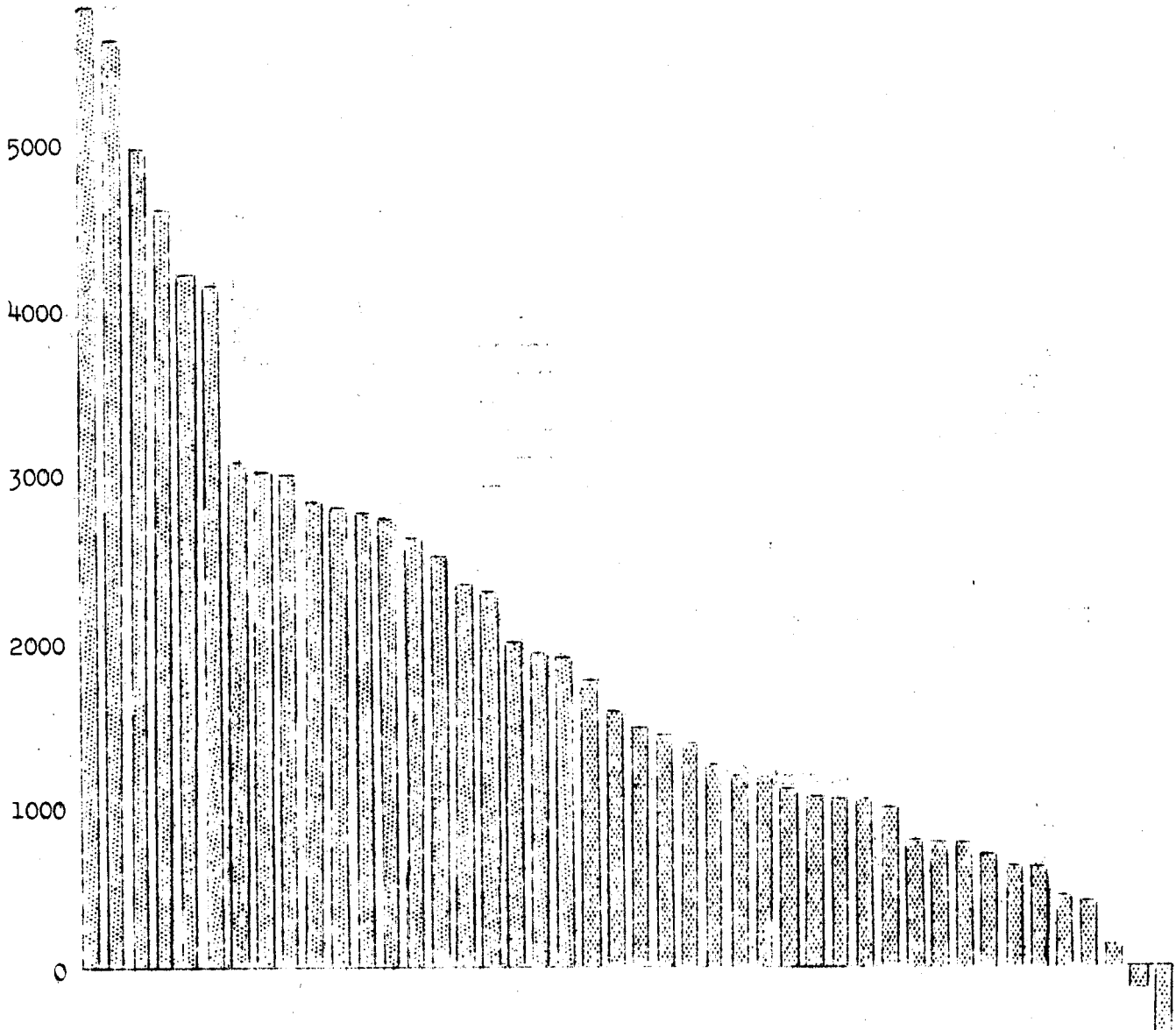


Figure 1 ,--Graphic Distribution of Operator's Labor Earnings - 1941 .

FACTORS AFFECTING FARM EARNINGS

Why was one man able to earn \$6000 more than another man (figure 1)? How were the more profitable farms organized and how did they differ from the less profitable farms? Some of the causes for these differences in earnings may be beyond the control of the farmer. However, from the one year's data obtained in this report, there are several factors that show a definite relationship with operator's labor earnings and suggest opportunities for increased earnings. These factors are pointed out in table 10 and the following sections of the report.

Table 10.--Measures of Farm Organization and Management Efficiency, 1941

Measures	Your farm	Average of 44 farms	9 most profitable farms	9 least profitable farms
Operator's Labor Earnings		\$1944	\$4258	\$ 339
(1) Size of business - work units		524	865	341
(2) Size of farm - acres		364	708	190
(3) Work units per worker		269	329	215
(4) Index of gross returns from productive livestock		100.0	129.3	75.2
(5) Amount of productive livestock per 100 acres.*		9.1	7.1	9.2
(6) Index of crop yields		100.0	100.2	89.5

Items and measures related to some of the above measures:

(1) Work units on crops		243	438	149
Work units on productive livestock		270	414	178
Other work units		11	13	14
(3) Total number of workers		2.0	2.7	1.7
Number of family workers		1.6	1.8	1.2
Number of hired workers		.4	.9	.5
(4) Index of gross returns from:				
Dairy cattle		100	139	65
Dual purpose cattle		100	130	50
Beef cattle - breeding herds		100	139	-
Beef cattle - feeder cattle		100	137	-
Sheep		100	107	-
Hogs		100	104	101
Chickens		100	114	101

* Acres in timber not pastured, roads, waste, and farmstead were not included.

Size of business¹ In 1941 size of business exerted a marked influence upon farm earnings. Farms with big businesses had larger earnings than farms with small businesses (table 11). Earnings were greater because the bigger farm businesses permitted a larger volume of business. When farms are making money it pays to increase size² of business as long as there is no material decrease in efficiency of operation.

¹ Size of business is measured in terms of work units. A work unit is the accomplishment in a standard day of a farm worker at average efficiency. It includes work on crops, productive livestock and work off of farm. See page 4.

² Farm management studies made by the Division of Agricultural Economics, Minnesota Agricultural Experiment Station over a period of years show that during good years size of farm business is an advantage in increasing farm earnings and during poor years farms with large businesses are likely to be less profitable.

Larger earnings on farms with bigger businesses were made possible, in part, by the fact that each worker was able to accomplish more than on farms with smaller businesses. A large farm business enables labor saving equipment to be used to its fullest extent thus permitting more work to be accomplished per worker. Earnings on the farms with big businesses could no doubt be increased still further if crop yields could be increased without raising materially the costs involved in getting higher yields.

Table 11.--Relationship of Size of Business (Work Units) to Farm Earnings.

Number of Work Units		Number of farms	Average operator's labor earnings
Group	Average		
Below 340	283	10	\$ 903
340 to 659	438	22	1565
660 or more	883	12	3528

Size of farm. The preceding relationship was between size of farm business, as measured by work units, and farm earnings. Another measure of size more familiar to most farmers is acres in farm. This measure does not take into account directly the livestock phase of the farm business.

Data in table 12 show that large farms, when measured in terms of acreage, excel small farms in earnings.

Table 12.--Relationship of Size of Farm to Farm Earnings

Acres in farm		Number of farms	Average operator's labor earnings
Group	Average		
179 or less	137	9	\$1022
180 - 379	270	23	1464
380 or more	715	12	3660

Work Units Per Worker. Farm earnings were largest on farms where the most productive work was accomplished per worker (table 13). Full utilization of all available workers on productive work lowers the labor costs per unit of business and helps to increase farm earnings. Partial employment of available labor means high labor costs per unit of business and indicates that the farm is not being operated to fullest capacity of labor. Increasing the size of the farm business by farming additional land or keeping more livestock provides more work for the available laborers. A farm business with labor requirements well distributed helps to keep the family labor busy throughout the year and reduces to a minimum the amount of extra labor to be hired.

Table 13.--Relationship of Amount of Work Accomplished per Worker to Farm Earnings.

Number of Work Units per Worker		Number of farms	Average operator's labor earnings
Group	Average		
225 or less	178	13	\$1081
226-335	271	20	1799
336 or more	372	11	3251

Gross Returns from Livestock. Livestock is a major source of income on these farms as indicated by the fact that 76 per cent of the cash receipts came from that source. A large proportion of the crops raised is fed to livestock as only 12 per cent of the cash receipts are from the sale of crops. In addition to the crops raised and fed, 15 per cent of the cash expenses were for additional purchased feed. Feed is a major cost in livestock production. Feeding unproductive livestock may mean lower farm earnings than if the crops had been sold directly for cash. Therefore, it is essential that it be fed to productive livestock if the greatest returns are to be realized.

The data in table 14 show how high gross returns from productive livestock are accompanied by high operator's labor earnings. The 11 farms with gross returns poorer than 80 per cent of the average of all farms had operator's labor earnings of only \$1224. Farms with higher gross returns had larger earnings.

Table 14.--Relation of Index of Gross Returns from Productive Livestock to Farm Earnings.

Index of Gross Returns from Productive Livestock		Number of farms	Average operator's labor earnings
Group	Average		
Below 80	66.2	11	\$1224
80 - 119	94.2	21	1814
120 or more	141.2	12	2854

Amount of livestock. Data in table 15 show the relationship of amount of livestock per 100 acres to farm earnings. When size of business was held constant it was found that farms with greater amounts of livestock per 100 acres had larger farm earnings. It usually pays to increase livestock numbers to what buildings and available labor can handle when livestock return a net profit. However on many farms in the Clear Lake area numbers of livestock are now limited by the amount of available labor, barn room, pasture, and feed produced. Therefore, the easiest way to increase size of business and add to the farm earnings with little increase in labor is to rent additional land and put it into small grain, principally rye. As a result, these farms have fewer livestock per 100 acres consequently have less manure to use in keeping up the fertility of the land. This is reflected in lower crop yields.

Table 15.--Relationship of Amount of Livestock per 100 Acres* to Farm Earnings

Productive Livestock Units per 100 Acres		Number of farms	Average operator's labor earnings
Group	Average		
11.4 or more	14.0	11	\$1406
7.0 - 11.3	9.1	19	1998
Below 7.0	5.3	14	2312

* Acres in timber not pastured, roads, waste and farmstead were not included

Crop Yields. As indicated in table 16 farms with poor crop yields have low earnings and farms with good crop yields have high earnings. High crop yields mean more feed for livestock or sale. Additional feed means better feeding of the present livestock to increase production and the purchasing of more livestock to consume the extra feed. All help to increase farm earnings.

Low crop yields as a result of decreased fertility and damage by wind erosion curtail the total crop production, thus reducing the quantity available to feed or sell. Smaller sales of livestock, livestock products, and crops mean lower cash receipts. Reseeding of crops damaged by wind represents added expense. All help to lower farm earnings.

Table 16.--Relationship of Crop Yields to Farm Earnings

Index - Crop Yields		Number of farms	Average operator's labor earnings
Group	Average		
Below 85	73.1	11	\$ 1776
85 - 112	98.2	22	1905
113 or more	130.5	11	2191

Number of Factors in Which Farmer Excels. From table 17 it can be seen that a good showing in a large number of the factors is associated with high farm earnings. Five farmers were above average in five of the six factors and had the highest earnings of any group. Six farmers were below average in all six factors and had the lowest earnings of any group. No one farmer was above average in all six of the factors associated with farm earnings. Too frequently the advantages gained by a good showing in one phase of the farm business are offset by poor results in other parts of the farm business. Physical limitations on some farms, such as poor land, buildings or machinery, may make it impossible to excel in all factors. Yet it is desirable that the farm business be developed to the point where it will return maximum earnings. This can be done by continual study of the farm business.

Table 17.--Relationship of Number of Factors in Which the Farmer is Above Average to Operator's Labor Earnings

Number of Factors in Which Farmer Excels	Number of Farms	Average Operator's Labor Earnings
0	6	\$ 406
1	9	1141
2	8	1330
3	8	2048
4	8	3052
5	5	4332

EROSION PROBLEM

Wind erosion has existed in the Clear Lake area for many years according to reports obtained from the older farmers. It became more of a problem as additional land was plowed and fields were made larger. During the 1930's the problem was intensified many fold because of the drought. Thirty-five of the 44 farmers interviewed said that wind erosion existed on their farms. Of those reporting the presence of wind erosion 23 per cent said it was not an important problem, 61 per cent said that erosion was a moderately serious problem, and 16 per cent stated that wind erosion was a very serious problem on their farms. It was generally felt that the seriousness of wind erosion had increased during the last 30 years, although some farmers reported no decided change during this period. Damages to crops caused by wind erosion were the blowing out of seed and the cutting off of small grain, corn, and grass seedings by shifting sands. Fence rows were drifted with soil blown from adjacent fields.

Farmers' Control Methods

Many methods for controlling wind erosion have been tried by the farmers in this area. Variations in methods and in results were noted among farms. These control measures are grouped and discussed under the following headings:

(1) Less fall plowing.

On many farms the amount of land fall plowed has been reduced to that acreage planted to winter wheat or rye. On other farms fall plowing has been discontinued so that the land would not be bare during the winter and early spring months. Farmers were generally agreed that fall plowing tends to increase the possibility of wind erosion unless the land is sown to winter rye or wheat soon after plowing. Eighty-eight per cent of the farmers said that land plowed in the fall and put into corn or small grain in the spring was more subject to wind erosion than if spring plowed. In comparison, only 25 per cent of the farmers reported more wind erosion on spring plowed land. This proportion was slightly larger when spring plowed land was put into corn and less when seeded to small grain. Small grain is usually seeded immediately after spring plowing when the land is moist from the spring rains. Corn land is plowed later in the spring when the ground is drier and soon blows very readily.

(2) Rough tillage.

Farmers indicated that smooth fields blow more readily than rough fields. Consequently several of the farmers practice blind cultivation of corn land. Others do not drag fields, especially sand hills with a smoothing harrow. Eighty-five per cent of the farmers said that they increased the wind erosion on their farms when they used the harrow, especially if the weather was dry and windy. Ten per cent could see no difference in the amount of wind erosion and five per cent thought wind erosion was reduced by using the harrow.

The springtooth with its ridging effect of the soil helps to control wind erosion in the opinion of 71 per cent of the farmers. The remaining 29 per cent reported no noticeable difference. None reported an increase in wind erosion by using the springtooth.

Nearly one-fourth of the farmers using the disk felt that it increased wind erosion. The remaining 75 per cent reported a decrease or no noticeable difference. The general comments were to the effect that erosion would be decreased if the ground was left ridged after using the disk and that wind erosion would increase if the land was disked too much.

(3) Cover crops.

Winter wheat or rye were grown on all farms and helped to protect the soil from blowing. Alfalfa was grown on over three-fourths of the farms although only one-third of the farmers reported it being grown to control wind erosion. Most farmers preferred to seed alfalfa in June without a nurse crop on land that had been spring plowed, harrowed, and packed or rolled. Alfalfa was usually left down 3, 4, or 5 years before being plowed under. More severely eroded areas were kept in alfalfa as long as possible.

(4) Crop residue.

This involved plowing down rye or sweet clover and leaving corn stalks and straw on the field to be incorporated with the surface soil. One farmer had recently purchased a one-way disc plow which he uses for this purpose. Those farmers who had isolated spots subject to blowing found that it paid to cover them with straw or manure to prevent soil particles from breaking up readily for soil blowing. The more desirable permanent protection was to seed these places to alfalfa.

(5) Strip cropping.

Eight farmers used field strips on parts of their farms to control wind erosion. The strips varied in width from 10 to 20 rods. Four other farmers indicated that they would be putting a sizeable acreage in strips in the spring of 1942 and others said they would try strips when they seeded winter grain this fall.

Some objections to strip cropping were voiced by farmers who had not tried it. They felt that it would be difficult to raise corn on fields 15 to 20 rods in width as more time would be required for cross cultivation.

1. The first part of the paper discusses the importance of the study of the history of the United States. It is argued that the study of the history of the United States is essential for a full understanding of the country and its people. The paper then discusses the importance of the study of the history of the United States in the context of the current political and social climate.

2. The second part of the paper discusses the importance of the study of the history of the United States in the context of the current political and social climate. It is argued that the study of the history of the United States is essential for a full understanding of the country and its people. The paper then discusses the importance of the study of the history of the United States in the context of the current political and social climate.

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