

S
14.GS:
CIR 82
c. 3

Geol Survey

State of Illinois
Dwight H. Green, Governor
Department of Registration and Education
Frank G. Thompson, Director

Division of the
STATE GEOLOGICAL SURVEY
M. M. Leighton, Chief
Urbana, Illinois

No. 82

C I R C U L A R

May 1942

AGRICULTURAL LIMESTONE USED IN ILLINOIS IN 1941

Preliminary Report*

By

W. H. Voskuil, D. F. Stevens, and G. N. Oliver

The use of agricultural limestone to improve the farm lands of Illinois established a new record in 1941. More than two and one-half million tons were used throughout the State, every county participating. This is evidence of the growing recognition of the importance of preserving and increasing the fertility of the soils, and it is to be expected that this point of view will be emphasized even more by agriculturalists, especially during the present war when greater quantities of food-stuffs must be raised.

This use of limestone to build up the soils of Illinois to new capacities of productiveness has been aided by various State and Federal agencies and farm organizations. It has been especially promoted by the conservation program of the Agricultural Adjustment Administration of the U. S. Department of Agriculture.

* In cooperation with the Midwest Agricultural Limestone Institute.

+

[Faint, illegible text]

[Faint, illegible text]

[Faint, illegible text]

[Faint, illegible text]

[Faint, illegible text]

[Faint, illegible text]

[Faint, illegible text]

ILLINOIS STATE GEOLOGICAL SURVEY



3 3051 00004 3129

Through this program farmers are enabled to use part of the allowance they receive for participation in its cooperative planning to secure limestone and other soil-building material to improve their land. They are encouraged to do this not only in the spring but throughout the year, and are given expert advice in the scientific application of this material to secure the maximum benefits from its use.

The widespread use of agricultural limestone on the farms of Illinois is further aided by the high-quality deposits of limestone suitable for this use within the State and adjacent to the State. The agricultural limestone resources of Illinois have been studied over a period of years by the State Geological Survey and the information obtained has been utilized in developing additional quarries in areas where needed.

During 1941, agricultural limestone was produced in 50 of the 102 counties of the State. Of the total amount used during the year, more than 96 per cent was produced in Illinois.

Increase in the use of agricultural limestone during 1941 was especially pronounced in the southern counties of the State, where formerly its use has been less extensive. Increases in use in the central part of the State, where the proportion of tenant-operated farms is largest, have been due to provisions in the soil conservation program for division of benefits among owners and tenants.

Limestone in the soil conservation program.*

Among the fundamental purposes of the agricultural conservation program for 1942, the first is stated "to save the soil and its fertility, and to increase the production of the commodities needed for national defense." The program, according to the published instruction to which reference is made in the footnote, provides for payments to farmers to help them pay at least part of the cost of carrying out these purposes by diverting acreage from soil-depleting crops and by adopting soil-building practices.

The program provides that a soil-building allowance for carrying out approved soil-building practices will be paid at the rate of

- "(a) 70 cents per acre of cropland in the farm in excess of the special crop acreages for which payments are computed.

* 1942 Agricultural Conservation Program for the North Central Region, U. S. Dept. of Agr., Agricultural Adjustment Administration, NCR 601.

- (b) \$2.00 per acre of commercial orchards on the farm.
- (c) A county flat rate per acre of noncrop open pasture land in the farm, plus 90 cents for each animal unit of grazing capacity.
- (d) \$1.00 for each acre of commercial vegetables normally grown on the farm."

"Application of ground limestone and other approved fertilizer materials to old stands or to new seedings of biennial or perennial legumes, perennial grasses, etc., will qualify as soil-building practice.

"The ground limestone must contain calcium and magnesium carbonates equivalent to not less than 80 per cent of calcium carbonate. It must not be coarser than that obtained by grinding calcareous or dolomitic limestone, with all finer particles obtained in the grinding process included, so that (1) not less than 90 per cent will pass through an 8-mesh sieve; or (2) not less than 80 per cent will pass through an 8-mesh sieve and the multiplication of the percentage of calcium carbonate (equivalent) times the percentage of ground limestone that will pass through an 8-mesh sieve equals not less than 0.7200.

"The application of one ton of ground limestone in the following counties, \$2.00 per ton:

Knox	Macon	Clinton	Hamilton
Stark	Greene	Marion	White
Peoria	Macoupin	Clay	Jackson
Fulton	Montgomery	Richland	Williamson
Schuyler	Christian	Lawrence	Saline
Brown	Shelby	Washington	Gallatin
Cass	Moultrie	Jefferson	Union
Mason	Bond	Wayne	Johnson
Menard	Fayette	Edwards	Pope-Hardin
Sangamon	Effingham	Wabash	Alexander-
Scott	Jasper	Perry	Pulaski
Morgan	Crawford	Franklin	Massac

The application of one ton of ground limestone in all other counties, \$1.50 per ton."

Table 1 gives the use of agricultural limestone in Illinois by counties in 1941, showing also what portion of the tonnage used was produced in Illinois and in other states, the arable land in each county, and the average number of pounds of limestone used per acre of arable land. These data are from reports of producers, supplemented by information from farm advisers. Corresponding figures are given for 1940 for total amounts used and pounds per acre

Table 2 gives the total amount of agricultural limestone produced in other states which was used in Illinois, and its proportion to the total used in Illinois, for the past seven years.

Table 3 gives the total amount of agricultural limestone produced in Illinois which was marketed in other states for the past seven years.

The map shows the counties of Illinois and their average consumption of agricultural limestone per acre of arable land in 1941.

Table 1.--Use of Agricultural Limestone
in Illinois, by Counties, 1940 and 1941

County	Used in 1941			Used in 1940	Acres of Arable land (1939 census)	Pounds used per acre*	
	Produced in Illinois	Produced in other states	Total			1940	1941
Adams	31,841		31,841	30,335	252,446	236	252
Alexander	6,096	225	6,321	2,345	49,866	96	254
Bond	25,458		25,458	20,123	122,224	304	416
Boone	12,300		12,300	12,268	115,849	210	212
Brown	13,564		13,564	11,253	71,549	288	378
Bureau	25,827		25,827	25,744	352,777	142	147
Calhoun	17,500		17,500	13,473	62,607	390	560
Carroll	33,750		33,750	33,588	151,498	438	446
Cass	12,000		12,000	10,000	137,405	140	170
Champaign	35,124		35,124	33,312	487,052	130	144
Christian	44,184		44,184	35,986	317,469	212	278
Clark	39,629		39,629	37,390	147,721	492	536
Clay	26,563		26,563	26,749	147,932	350	360
Clinton	28,238	7	28,245	28,141	184,463	290	306
Coles	24,788		24,788	21,256	204,186	198	244
Cook	10,000		10,000	9,650	174,178	112	114
Crawford	35,980	2,913	38,893	19,057	129,019	306	604
Cumberland	24,334		24,334	24,013	111,117	400	436
DeKalb	25,700		25,700	26,402	300,180	172	172
DeWitt	18,449		18,449	13,606	178,758	148	206
Douglas	12,822	62	12,884	12,937	203,651	124	126
DuPage	21,486		21,486	7,668	98,841	144	434
Edgar	23,757	1,142	24,899	17,853	255,054	130	196
Edwards	28,614		28,614	16,210	79,811	380	716
Effingham	31,826	3,940	35,766	34,848	153,841	426	464
Fayette	22,366	106	22,472	21,679	207,106	196	216
Ford	23,589		23,589	21,774	235,032	176	200
Franklin	22,565	50	22,615	14,547	101,537	254	446
Fulton	20,087	2,259	22,346	18,802	267,772	130	166
Gallatin	12,000		12,000	6,236	102,638	118	234
Greene	46,432		46,432	25,000	164,814	278	562
Grundy	13,117		13,117	14,161	193,637	140	136
Hamilton	10,225		10,225	12,493	126,415	180	162
Hancock	34,778	249	35,027	31,296	265,043	220	264
Hardin	7,000		7,000	10,618	21,367	726	656

* Computed for 1940 from 1934 Census figures; for 1941 from 1939 Census figures.

Table 1.--(Continued)

County	Used in 1941			Used in 1940	Acres of Arable land (1939 census)	Pounds used per acre	
	Produced in Illinois	Produced in other states	Total			1940	1941
Henderson	34,242		34,242	20,460	127,291	314	536
Henry	39,500	7,194	46,694	30,000	327,034	179	286
Iroquois	34,864	14,661	49,525	45,000	536,438	162	186
Jackson	17,553	2,832	20,385	22,501	147,931	282	276
Jasper	37,705	52	37,757	34,192	174,186	386	432
Jefferson	26,221	105	26,326	32,043	146,453	214	360
Jersey	30,142		30,142	20,520	104,793	354	572
Jo Daviess	24,495		24,495	26,420	144,530	360	338
Johnson	23,864		23,864	20,046	59,742	550	800
Kane	21,084		21,084	17,248	210,186	154	200
Kankakee	32,668		32,668	19,604	300,394	126	218
Kendall	18,018		18,018	15,000	150,326	192	240
Knox	22,607	12,044	34,651	26,520	253,753	208	272
Lake	8,080		8,080	8,400	108,847	144	148
LaSalle	58,120		58,120	55,226	506,546	212	228
Lawrence	10,747		10,747	10,300	122,007	174	176
Lee	53,850		53,850	39,779	317,176	248	338
Livingston	63,980		63,980	50,806	522,760	188	240
Logan	20,133		20,133	13,097	305,432	86	132
McDonough	28,626	2,897	31,523	32,831	225,530	280	278
McHenry	15,601		15,601	16,787	211,577	141	147
McLean	83,194		83,194	75,000	557,076	220	300
Macon	18,363		18,363	20,000	263,970	142	138
Macoupin	50,681		50,681	42,124	263,157	288	384
Madison	32,249		32,249	30,075	256,470	224	252
Marion	34,944	7,362	42,306	37,204	171,342	340	492
Marshall	21,782	12	21,794	12,669	158,028	154	274
Mason	14,544		14,544	20,000	225,535	174	128
Massac	17,000		17,000	19,440	56,261	600	604
Menard	12,163		12,163	8,515	128,395	126	188
Mercer	25,258	3,470	28,728	21,742	190,569	226	300
Monroe	23,604		23,604	14,164	144,902	190	324
Montgomery	41,022		41,022	38,000	248,528	280	330
Morgan	8,683	6,642	15,325	16,650	220,259	140	140
Moultrie	11,121	55	11,176	11,000	154,637	134	144

Table 1.--(Continued)

County	Used in 1941			Used in 1940	Acres of Arable land (1939 census)	Pounds used per acre	
	Produced in Illinois	Produced in other states	Total			1940	1941
Ogle	39,763		39,763	50,000	309,633	312	256
Peoria	37,508	172	37,680	29,727	203,084	270	370
Perry	17,721	139	17,860	18,496	126,300	266	280
Piatt	16,518	59	16,577	16,000	210,451	144	156
Pike	28,496	120	28,616	35,000	232,460	302	246
Pope	11,307		11,307	9,593	52,202	288	432
Pulaski	7,134		7,134	5,102	53,830	150	264
Putnam	18,293		18,293	10,882	56,148	366	650
Randolph	31,334	3,019	34,353	37,619	196,442	340	348
Richland	20,783		20,783	19,450	132,767	292	312
Rock Island	17,099	1,701	18,800	15,250	127,185	228	294
St. Clair	40,862		40,862	44,794	229,600	334	354
Saline	15,016		15,016	14,000	99,227	232	302
Sangamon	29,422	615	30,037	30,000	358,668	158	168
Schuyler	9,678		9,678	8,938	123,785	136	156
Scott	8,740		8,740	5,112	87,070	113	200
Shelby	24,944	55	24,999	24,297	283,990	162	176
Stark	23,613	10,602	34,215	16,000	121,264	260	564
Stephenson	18,000		18,000	45,000	212,702	426	170
Tazewell	24,901		24,901	15,000	265,832	104	188
Union	17,892	200	18,092	16,085	94,140	296	384
Vermilion	36,153	492	36,645	40,000	390,901	200	188
Wabash	5,174	2,940	8,114	9,000	80,345	196	202
Warren	33,131	1,133	34,264	33,554	210,953	310	324
Washington	40,815	3,550	44,365	37,338	211,504	320	420
Wayne	30,589	102	30,691	22,197	215,527	212	284
White	11,849	1,841	13,690	14,775	189,016	154	144
Whiteside	34,900	32	34,932	33,000	274,505	234	254
Will	20,477		20,477	20,000	345,147	120	118
Williamson	17,480	175	17,655	15,000	86,222	306	432
Winnebago	30,790		30,790	37,000	180,603	400	342
Woodford	20,436		20,436	18,471	222,776	158	182
Total	2,579,515	95,226	2,674,741	2,365,663	20,201,195	Aver. 224	Aver. 264

Table 2.--Agricultural Limestone Produced in Other States and Sold in Illinois, 1935-1941, in Tons

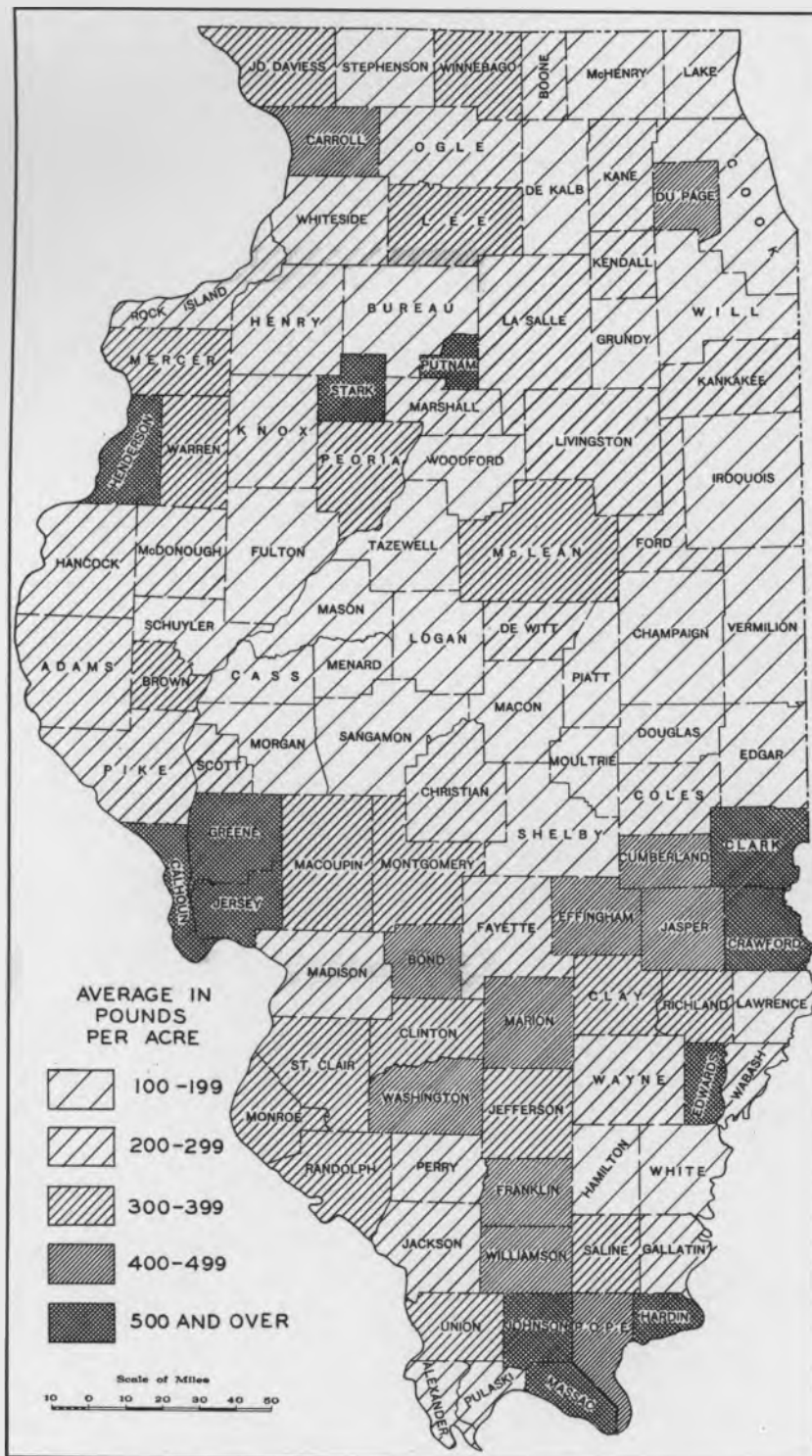
Year	Amount sold in Illinois	Per cent of total Illinois consumption
1935	54,803	10.5
1936	77,264	7.5
1937	87,479	7.9
1938	118,740	10.2
1939	71,775	5.1
1940	106,912	5.9
1941	95,226	3.2

Table 3.--Agricultural Limestone Produced in Illinois and Marketed in Other States, 1935-1941, in Tons

Year	Indiana	Kentucky	Missouri	Michigan	Tennessee	Total
1935	10,102	32	130	4,135	1,095	15,562
1936	28,976	4,129	587	4,950	6,020	44,398
1937	53,375	12	845	7,522	2,703	64,746
1938	36,356	4	675	1,288	4,100	42,463
1939	3,527	4,735	441	500	18,950	28,169
1940	3,800	5,450	353	325	14,900	25,778*
1941	1,800	940	867	65	1,060	4,832 ^o

* Includes 950 tons to Wisconsin.

^o Includes 100 tons to Iowa.



AGRICULTURAL LIMESTONE USED IN 1941
COUNTY AVERAGES IN POUNDS PER ACRE OF ARABLE LAND