

Capacity of Refrigerated Warehouses



National
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Service

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Department of
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General Refrigerated Warehouse Capacity Up 10 Percent

General refrigerated storage capacity in the United States totaled 2.20 billion gross cubic feet on October 1, 1991, an increase of 10 percent since the previous survey was conducted two years ago. This was the 36th biennial survey of refrigerated warehouses. The five States with the largest gross general warehouse capacity (million cubic feet) were: California with 289; Florida, 161; Washington, 144; Texas 119; and Wisconsin with 118.

Usable refrigerated space in general storages was 1.66 billion cubic feet, or 76 percent of the gross space. Usable freezer space was 77 percent of the usable refrigerated space with the remaining 23 percent used as cooler space. Convertible refrigerated space was classified as usable freezer space.

Public general warehouse capacity totaled 1.57 billion gross cubic feet in 1991, accounting for 72 percent of the general storage. Public general storage capacity has increased 65 percent in the last ten years.

Private and semiprivate general warehouse capacity totaled 624 million gross cubic feet, or 28 percent of the general gross refrigerated space. Private and semiprivate general storage capacity has increased 16 percent since 10 years ago.

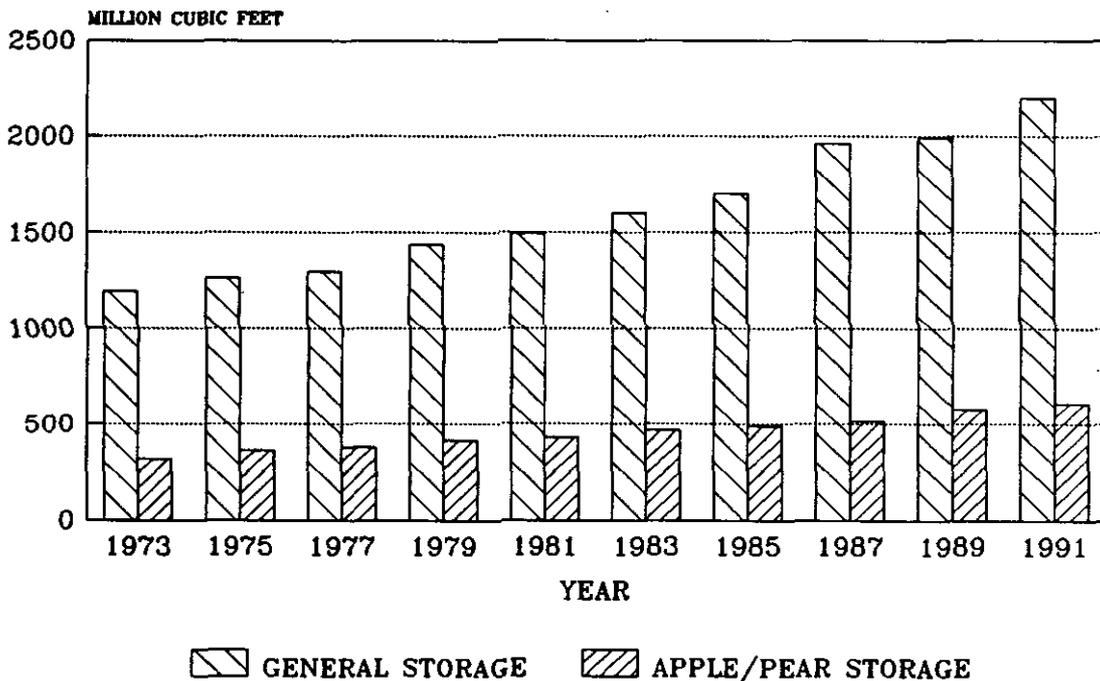
Apple and pear storage totaled 612 million gross cubic feet, up 6 percent since October 1, 1989. Controlled atmosphere (CA) capacity totaled 123.1 million bushels, up 12 percent from 1989. CA storage capacity was 54 percent of the total apple and pear bushel capacity. The State of Washington had 76 percent of the CA total capacity.

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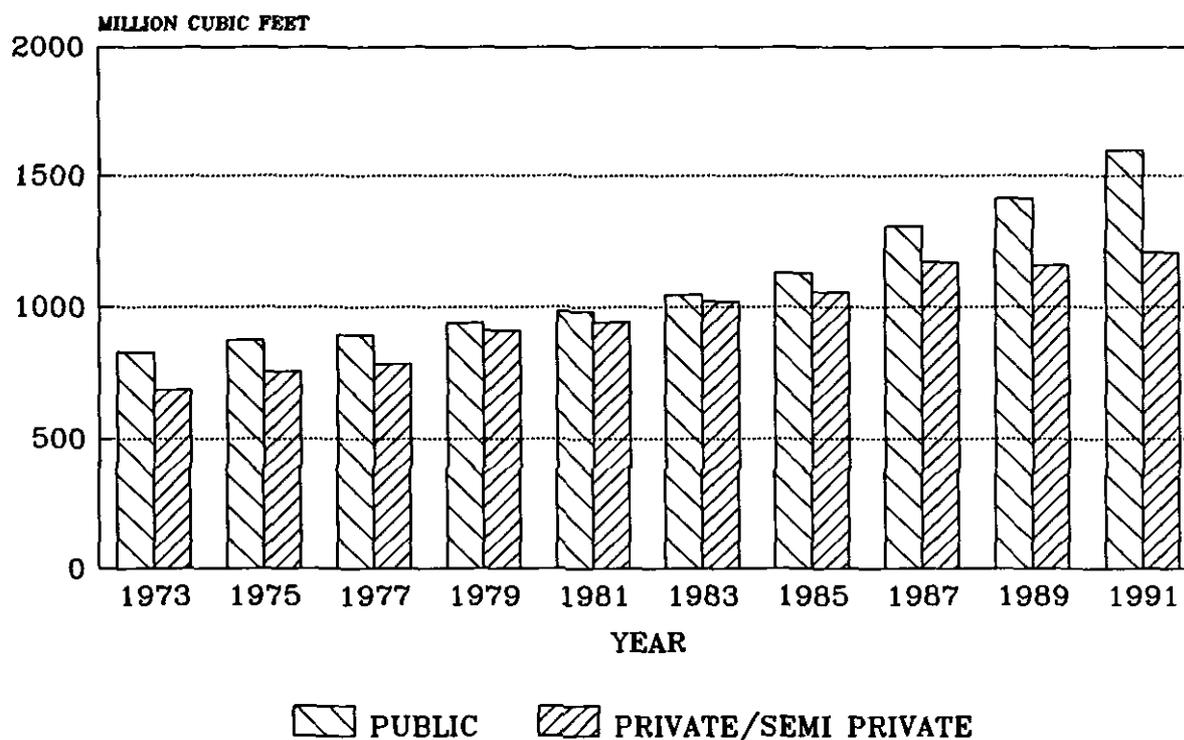
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GROSS REFRIGERATED STORAGE CAPACITY BY PRINCIPAL STORAGE ACTIVITY, U.S.



GROSS REFRIGERATED STORAGE CAPACITY BY TYPE OF WAREHOUSE, UNITED STATES



Gross Refrigerated Storage Capacity by Type of Warehouse,
United States, October 1, 1973-91

Year	Public	Private and Semi-private	Total ^{1/}
Million Cubic Feet			
1973	829	686	1,515
1975	876	755	1,630
1977	894	785	1,679
1979	940	912	1,852
1981	983	942	1,925
1983	1,047	1,019	2,067
1985	1,130	1,056	2,186
1987	1,306	1,171	2,476
1989	1,414	1,158	2,571
1991	1,600	1,208	2,808

^{1/} Totals may not add due to rounding.

Refrigerated Space by Type of Warehouse, United States, October 1, 1991 ^{1/}

Type	Number	Gross Space			Usable space		
		Cooler	Freezer	Total	Cooler	Freezer	Total
1,000 Cubic Feet							
General							
Public	773	279,497	1,293,382	1,572,879	209,685	977,903	1,187,588
Private & Semipvt	770	236,403	387,602	624,005	176,842	294,270	471,112
Total	1,543	515,900	1,680,984	2,196,884	386,527	1,272,174	1,658,701
Apple							
Public	30	25,708	1,519	27,227	19,905	1,044	20,949
Private & Semipvt	1,549	576,974	7,322	584,296	465,360	5,575	470,935
Total	1,579	602,682	8,841	611,523	485,265	6,619	491,884
Total	3,122	1,118,582	1,689,825	2,808,407	871,792	1,278,792	2,150,584

Gross Refrigerated Space by Type of Warehouse, United States, October 1, 1973-91 ^{1/}

Type	1973	1975	1977	1979	1981
1,000 Cubic Feet					
General					
Public	798,838	844,946	860,542	908,394	956,153
Private and Semiprivate	398,217	419,828	438,110	529,483	539,992
Total	1,197,055	1,264,774	1,298,652	1,437,877	1,496,145
Apple					
Public	29,853	30,346	33,047	31,611	26,940
Private and Semiprivate	288,260	334,944	346,833	382,977	401,889
Total	318,113	365,290	379,880	414,588	428,829
Total, All	1,515,168	1,630,064	1,678,532	1,852,464	1,924,973
1,000 Cubic Feet					
General					
Public	1,028,300	1,110,394	1,285,860	1,391,901	1,572,879
Private and Semiprivate	573,463	589,132	676,369	603,402	624,005
Total	1,601,763	1,699,526	1,962,229	1,995,303	2,196,884
Apple					
Public	18,871	19,383	19,750	21,945	27,227
Private and Semiprivate	445,996	466,768	494,404	554,150	584,296
Total	464,867	486,151	514,154	576,095	611,523
Total, All	2,066,631	2,185,677	2,476,384	2,571,397	2,808,407

^{1/} Totals may not add due to rounding.

Number of Refrigerated Warehouses by Type, by State and United States,
October 1, 1991

State	General Storages			Apple & Pear Storages			Total
	Public	Private & Semiprvt	Total	Regular	CA	All 1/	
	Number						
AL	14	8	22				22
AK	1	16	17				17
AZ	8	3	11	1	1	1	12
AR	11	3	14				14
CA	97	96	193	31	7	32	225
CO	11	4	15	8	1	8	23
CT	3	6	9	41	9	42	51
DE	3	6	9	2		2	11
FL	40	38	78				78
GA	27	47	74				74
HI	4	1	5				5
ID	3	16	19	6	7	7	26
IL	22	14	36	25	2	25	61
IN	13	6	19	95	1	95	114
IA	31	4	35		2	2	37
KS	10	3	13	2		2	15
KY	4	4	8	4		4	12
LA	9	13	22				22
ME	2	18	20	36	26	39	59
MD	7	4	11	8	1	8	19
MA	26	25	51	68	28	71	122
MI	28	26	54	215	122	245	299
MN	24	29	53	15		15	68
MS	3	3	6				6
MO	19	19	38	2		2	40
MT	1	1	2				2
NE	13	5	18	2		2	20
NV	3		3				3
NH	1	2	3	29	13	29	32
NJ	32	15	47	26	10	33	80
NM	1	4	5		3	3	8
NY	41	64	105	158	97	169	274
NC	18	8	26	20	7	27	53
ND	2	2	4				4
OH	21	8	29	72	8	72	101
OK	4	4	8	1		1	9
OR	18	26	44	48	16	51	95
PA	30	16	46	159	15	161	207
RI	1	3	4	8		8	12
SC	8	6	14	5	1	6	20
SD	2	4	6				6
TN	11	5	16				16
TX	45	29	74				74
UT	7	9	16	25	8	26	42
VT		5	5	15	7	16	21
VA	19	18	37	59	12	59	96
WA	35	29	64	247	201	288	352
WV	1	2	3	21	8	24	27
WI	39	92	131	4		4	135
WY		1	1				1
US	773	770	1,543	1458	613	1,579	3,122

1/ Firms with both regular and CA storage are counted once.

General Storages: Gross and Usable Refrigerated Space,
by State and United States, October 1, 1991 1/ 2/

State	Gross Space			Usable Space		
	Public	Private & Semiprvt	Total	Public	Private & Semiprvt	Total
	1,000 Cubic Feet					
AL	*	*	19,266	*	*	15,606
AK	*	*	1,147	*	*	1,066
AZ	8,930	1,483	10,413	7,172	1,312	8,484
AR	24,829	1,439	26,268	20,505	1,164	21,669
CA	185,723	103,703	289,426	135,573	80,105	215,678
CO	12,120	1,486	13,606	8,516	959	9,475
CT	4,650	392	5,042	4,085	325	4,410
DE	*	*	19,812	*	*	13,408
FL	68,505	92,489	160,995	54,189	73,939	128,128
GA	72,835	17,228	90,063	56,053	14,017	70,070
HI	*	*	*	*	*	*
ID	13,530	29,900	43,430	*	*	33,043
IL	78,791	12,190	90,980	53,391	8,072	61,463
IN	31,676	5,045	36,721	25,060	3,907	28,967
IA	46,017	2,687	48,704	37,370	1,514	38,884
KS	*	*	56,626	*	*	45,992
KY	*	*	9,939	5,201	1,657	6,858
LA	7,386	987	8,373	5,609	884	6,493
ME	*	*	15,975	*	*	11,344
MD	17,740	3,815	21,555	13,349	2,517	15,866
MA	41,172	15,460	56,632	32,640	11,442	44,081
MI	45,776	16,595	62,371	34,105	13,605	47,710
MN	27,437	17,125	44,562	19,981	12,325	32,306
MS	*	*	*	*	*	*
MO	78,263	11,482	89,745	60,175	8,379	68,554
MT	*	*	*	*	*	*
NE	22,360	2,763	25,123	16,919	2,105	19,024
NV	1,754	*	1,754	1,459	*	1,459
NH	*	*	2,406	*	*	2,074
NJ	60,605	13,245	73,851	43,711	10,613	54,324
NM	*	*	584	*	*	495
NY	61,128	31,169	92,297	40,109	22,686	62,795
NC	28,821	6,231	35,052	20,984	4,209	25,193
ND	*	*	*	*	*	*
OH	44,379	10,659	55,038	35,995	7,751	43,746
OK	*	*	8,441	*	*	6,442
OR	65,798	29,096	94,893	55,616	21,445	77,061
PA	61,359	14,035	75,394	42,796	10,295	53,091
RI	*	*	*	*	*	*
SC	9,908	1,692	11,600	8,001	1,273	9,274
SD	*	*	3,707	*	*	2,769
TN	20,372	9,497	29,870	13,879	5,077	18,956
TX	101,578	17,728	119,305	65,825	15,774	81,599
UT	17,357	7,376	24,732	14,311	5,714	20,025
VT	*	*	*	*	1,882	1,882
VA	20,980	15,003	35,983	16,549	12,366	28,915
WA	107,061	36,552	143,613	88,275	27,741	116,016
WV	*	*	*	*	*	1,219
WI	77,171	40,900	118,071	60,978	28,452	89,430
WY	*	*	*	*	*	*
Oth Sts	106,868	54,554	23,520	89,206	57,607	13,356
US	1,572,879	624,005	2,196,884	1,187,588	471,112	1,658,701

* Not published to avoid disclosure of individual operations. Included in "Other States" and U.S. totals. 1/ Totals may not add due to rounding.
2/ Includes frozen juice tank storage capacity.

General Storages: Gross and Usable Cooler Space,
by State and United States, October 1, 1991 1/ 2/

State	Gross Space			Usable Space		
	Public	Private & Semiprvt	Total	Public	Private & Semiprvt	Total
	1,000 Cubic Feet					
AL	*	*	5,907	*	*	5,050
AK	*	*	181	*	*	176
AZ	*	*	*	*	*	*
AR	*	*	2,136	*	*	1,778
CA	45,050	57,014	102,064	34,412	44,082	78,494
CO	870	543	1,413	693	377	1,070
CT	*	*	1,173	*	*	1,009
DE	*	*	*	*	*	*
FL	10,651	26,209	36,859	8,502	19,900	28,402
GA	22,894	7,816	30,710	17,540	6,391	23,931
HI	*	*	*	*	*	*
ID	*	*	8,422	*	*	6,225
IL	20,491	6,089	26,580	15,467	3,932	19,399
IN	*	*	3,061	*	*	2,441
IA	5,313	1,968	7,281	4,460	1,074	5,534
KS	*	*	15,228	*	*	11,133
KY	*	*	3,149	*	*	2,169
LA	1,010	471	1,481	753	439	1,192
ME	*	*	432	*	*	327
MD	*	*	864	*	*	656
MA	3,877	860	4,736	3,066	662	3,729
MI	5,048	5,874	10,922	3,946	4,941	8,886
MN	4,773	6,655	11,428	3,302	4,559	7,861
MS	*	*	*	*	*	*
MO	22,859	4,126	26,985	18,227	2,747	20,974
MT	*	*	*	*	*	*
NE	*	*	2,429	*	*	1,927
NV	*	*	*	*	*	*
NH	*	*	348	*	*	271
NJ	14,222	5,374	19,596	10,243	4,148	14,391
NM	*	*	*	*	*	*
NY	11,767	16,669	28,436	8,145	12,877	21,023
NC	3,873	2,523	6,396	2,814	1,576	4,390
ND	*	*	*	*	*	*
OH	*	*	10,318	*	*	8,047
OK	*	*	2,634	*	*	2,077
OR	1,786	1,845	3,631	1,420	1,425	2,845
PA	*	*	12,447	*	*	8,167
RI	*	*	*	*	*	*
SC	*	*	972	*	*	758
SD	*	1,016	1,016	*	757	757
TN	*	*	3,744	*	*	2,158
TX	21,264	11,900	33,164	13,164	10,677	23,841
UT	940	2,204	3,144	711	1,439	2,150
VT	*	*	*	*	*	*
VA	5,744	9,743	15,487	4,994	7,884	12,878
WA	2,612	5,444	8,056	2,017	3,897	5,914
WV	*	*	*	*	*	*
WI	21,576	32,675	54,251	15,688	22,424	38,112
WY	*	*	*	*	*	*
Oth Sts	52,878	29,384	8,820	40,122	20,635	6,386
US	279,497	236,403	515,900	209,685	176,842	386,527

* Not published to avoid disclosure of individual operations. Included in "Other States" and U.S. totals. 1/ Totals may not add due to rounding.
2/ Includes frozen juice tank storage capacity.

General Storages: Gross and Usable Freezer Space,
by State and United States, October 1, 1991 1/ 2/

State	Gross Space			Usable Space		
	Public	Private & Semiprvt	Total	Public	Private & Semiprvt	Total
	1,000 Cubic Feet					
AL	12,374	985	13,359	9,781	775	10,556
AK	*	*	965	*	*	890
AZ	*	*	*	*	*	*
AR	*	*	24,132	*	*	19,892
CA	140,673	46,689	187,362	101,161	36,023	137,184
CO	11,250	943	12,192	7,823	582	8,405
CT	*	*	3,869	*	*	3,401
DE	*	*	*	*	*	*
FL	57,854	66,281	124,135	45,687	54,039	99,726
GA	49,941	9,412	59,352	38,513	7,626	46,139
HI	*	*	3,353	*	*	1,834
ID	*	*	35,008	*	*	26,818
IL	58,300	6,101	64,401	37,924	4,140	42,064
IN	*	*	33,660	*	*	26,526
IA	40,704	720	41,424	32,910	440	33,350
KS	*	*	41,399	*	*	34,859
KY	*	*	6,791	*	*	4,689
LA	6,376	516	6,891	4,856	445	5,301
ME	*	*	15,542	*	*	11,017
MD	*	*	20,691	*	*	15,210
MA	37,296	14,600	51,896	29,573	10,779	40,352
MI	40,727	10,722	51,449	30,159	8,665	38,824
MN	22,664	10,469	33,134	16,679	7,765	24,445
MS	*	*	*	*	*	*
MO	55,404	7,356	62,760	41,948	5,631	47,580
MT	*	*	*	*	*	*
NE	*	*	22,694	*	*	17,097
NV	*	*	*	*	*	*
NH	*	*	2,058	*	*	1,803
NJ	46,384	7,871	54,255	33,467	6,465	39,932
NM	*	*	*	*	*	*
NY	49,361	14,500	63,861	31,964	9,809	41,772
NC	24,948	3,709	28,656	18,170	2,633	20,803
ND	*	*	*	*	*	*
OH	*	*	44,720	*	*	35,699
OK	*	*	5,806	1,856	2,510	4,366
OR	64,012	27,251	91,263	54,196	20,021	74,217
PA	*	*	62,947	*	*	44,924
RI	*	*	*	*	*	*
SC	*	*	10,628	*	*	8,516
SD	*	*	2,691	*	*	2,012
TN	*	*	26,125	*	*	16,798
TX	80,314	5,828	86,142	52,661	5,097	57,758
UT	16,417	5,172	21,588	13,600	4,276	17,876
VT	*	*	*	*	*	*
VA	15,237	5,260	20,497	11,555	4,482	16,037
WA	104,449	31,108	135,558	86,258	23,844	110,102
WV	*	*	*	*	*	*
WI	55,595	8,225	63,820	45,290	6,028	51,318
WY	*	*	*	*	*	*
Oth Sts	303,102	103,885	43,911	231,871	72,196	32,083
US	1,293,382	387,602	1,680,984	977,903	294,270	1,272,174

* Not published to avoid disclosure of individual operations. Included in "Other States" and U.S. totals. 1/ Totals may not add due to rounding.
2/ Includes frozen juice tank storage capacity.

Apple and Pear Storages: Gross and Usable Refrigerated Space, Regular and CA Capacity, by State and United States, October 1, 1991 1/ 2/

State	Refrigerated Space		Apple & Pear Storage Capacity		
	Gross	Usable	Regular	Controlled Atmosphere	Total
	1,000 Cubic Feet		1,000 Bushels		
CA	31,476	23,051	7,801	3,270	11,071
CO	1,910	1,579	*	*	531
CT	1,965	1,549	517	183	700
ID	4,849	4,238	1,024	658	1,682
IL	2,414	1,913	*	*	671
IN	3,026	2,378	*	*	1,045
ME	4,402	3,737	748	962	1,710
MD	628	491	*	*	211
MA	4,301	3,536	865	674	1,539
MI	34,710	30,480	5,525	7,533	13,059
MN	686	552	243		243
NH	2,257	1,967	415	496	911
NJ	2,992	2,527	688	166	854
NY	29,489	24,727	5,277	5,750	11,028
NC	7,117	5,896	755	695	1,450
OH	3,719	3,048	1,061	196	1,257
OR	42,198	33,483	9,060	2,845	11,905
PA	26,760	21,230	5,542	1,904	7,445
RI	174	163	58		58
SC	853	687	*	*	297
UT	3,370	2,877	760	425	1,185
VT	2,459	2,104	480	505	985
VA	24,502	19,846	5,580	1,976	7,556
WA	364,203	290,828	51,579	93,765	145,344
WV	9,229	7,550	2,572	579	3,151
Oth Sts	1,834	1,447	2,731	538	513
US	611,523	491,884	103,281	123,120	226,401

* Not published to avoid disclosure of individual operations. Included in "Other States" and U.S. totals.

1/ Totals may not add due to rounding.

2/ Firms in this table store only apples or pears. Nearly all the storages are private and nearly all the space is cooler, thus public use and freezer space breakouts are not presented at the State level. See page 4 for U.S. totals.

Definitions

General storages: Includes refrigerated facilities classified as general storages, plus facilities classified as storing only cheese, meat, or citrus concentrates.

Public general storages: Refrigerated facilities maintained for storing food for others at specified rates per unit.

Private and semiprivate general storages: Refrigerated facilities maintained by an operator to facilitate his principal function as a producer, processor, or manufacturer of food products. The space is used to store the owner's products, although some space may be used by others at specified rates per unit stored. Working space, chill rooms, and curing rooms in meat storages are not included in the storage statistics.

Apple and pear storages: Refrigerated facilities maintained exclusively for storing apples or pears. Storages operated by cooperatives for use by members are included as private storages.

Cooler Space: Space that maintains temperatures between 0 and 50 degrees Fahrenheit.

Freezer space: Space that maintains temperatures at 0 degrees Fahrenheit or lower.

Controlled atmosphere (CA) Space: Sealed cooler space in which the oxygen and carbon dioxide content is controlled to extend the storage life of apples or pears.

Gross space: Total area under refrigeration, measured from wall to wall and from floor to ceiling.

Usable space: Actual area used for storing commodities. Gross space less an allowance for aisles, posts, coils, blowers, etc.

Number of storages: Storages at different locations are counted separately even though operated by the same management.

Survey Procedures and Reliability

Survey procedures: Questionnaires were mailed about the 20th of October to operators of over 3,000 public and private cold storage warehouses that are artificially cooled to a temperature of 50 degrees Fahrenheit or lower, and whose food products are normally stored for 30 days or more. The list included specialized storage facilities meeting the 30 day requirement, such as fruit houses, dairy manufacturing plants, frozen fruit, fruit juice, and vegetable processors, and poultry and meat packing plants. Wholesalers, jobbers, distributors, chain stores, locker plants containing individual lockers, meat packer branch houses, and frozen food processors whose entire inventories are turned over more than once a month were excluded. Firms not responding to the initial mailing were mailed a second request and/or phoned or visited.

Estimating procedures: Data for reporting firms were added to estimates for non-reporting firms to obtain State and National totals. Estimates for non-reporting firms were obtained based on previous reports or administrative data.

Revision policy: These data are considered to be final and will not be revised.

Reliability: Reports were received from about 2,000 firms which represent about 90 percent of the total capacity. The numbers published should be considered to be minimum figures as there are cold storage firms that are not known to NASS. Special care in identifying individual plants should minimize duplication. Survey data are also subject to non-sampling errors such as omissions and mistakes in reporting and in processing the data. While these errors cannot be measured directly, they are minimized by carefully reviewing all reported data for consistency and reasonableness.

The next "Capacity of Refrigerated Warehouses" will be released in 1994.

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