



United States  
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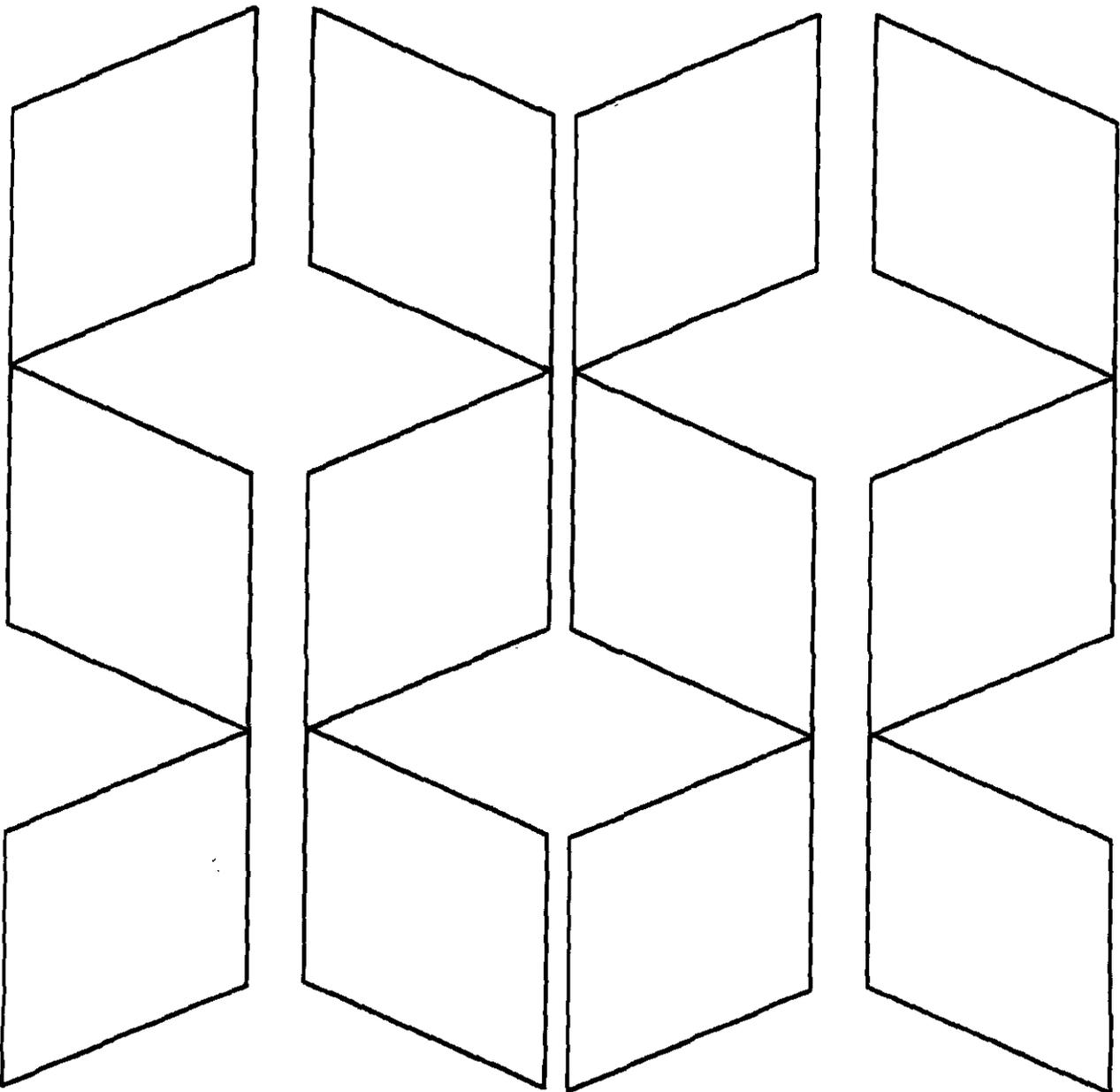
Agricultural  
Statistics  
Board

Washington, D.C.



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# Capacity of Refrigerated Warehouses 1993 Summary



## General Refrigerated Warehouse Capacity Up 6 Percent

**General refrigerated storage capacity** in the United States totaled 2.34 billion gross cubic feet on October 1, 1993, an increase of 6 percent since the previous survey was conducted two years ago. This was the 37th biennial survey of refrigerated warehouses. The five States with the largest gross general warehouse capacity (million cubic feet) were: California with 318; Florida, 172; Washington, 161; Texas, 126; and Wisconsin with 110.

**Usable refrigerated space** in general storages was 1.79 billion cubic feet, or 77 percent of the gross space. Usable freezer space was 76 percent of the usable refrigerated space with the remaining 24 percent used as cooler space. Convertible refrigerated space was classified as usable freezer space.

**Public general warehouse capacity** totaled 1.68 billion gross cubic feet in 1993, accounting for 72 percent of the general storage. Public general storage capacity has increased 63 percent in the last ten years.

**Private and semiprivate general warehouse capacity** totaled 659 million gross cubic feet, or 28 percent of the general gross refrigerated space. Private and semiprivate general storage capacity has increased 15 percent since 10 years ago.

**Apple and pear storage** totaled 635 million gross cubic feet, up 4 percent since October 1, 1991. Controlled atmosphere (CA) capacity totaled 131.0 million bushels, up 6 percent from 1991. The State of Washington had 77 percent of the CA total capacity.

Number of Refrigerated Warehouses by Type, by State  
and United States, October 1, 1993

State	General Storages			Apple & Pear Storages			Total
	Public	Private & Semiprvt	Total	Regular	CA	All <u>1/</u>	
Number							
AL	14	8	22				22
AK	2	17	19				19
AZ	6	5	11	1	1	1	12
AR	15	3	18				18
CA	108	105	213	28	7	30	243
CO	11	5	16	10	1	10	26
CT	1	5	6	40	6	40	46
DE	3	6	9	3		3	12
FL	37	34	71				71
GA	28	43	71				71
HI	2	1	3				3
ID	4	13	17	6	7	7	24
IL	18	16	34	21	2	21	55
IN	15	6	21	42	3	42	63
IA	32	8	40				40
KS	12		12	2		2	14
KY	3	3	6	5		5	11
LA	12	12	24				24
ME	1	18	19	36	25	39	58
MD	9	5	14	9	3	9	23
MA	21	23	44	70	29	73	117
MI	27	25	52	205	124	242	294
MN	23	30	53	14	1	14	67
MS	2	2	4				4
MO	18	16	34	5		5	39
MT	2	2	4				4
NE	14	5	19	2		2	21
NV	4	1	5				5
NH		1	1	28	14	28	29
NJ	34	12	46	28	8	32	78
NM	1	4	5		2	2	7
NY	35	62	97	161	101	174	271
NC	19	9	28	21	6	26	54
ND	2	2	4				4
OH	20	6	26	68	10	68	94
OK	5	4	9	1		1	10
OR	16	31	47	45	16	49	96
PA	33	14	47	168	15	169	216
RI	1	3	4	4	3	7	11
SC	8	6	14	5	1	6	20
SD	2	4	6				6
TN	12	5	17				17
TX	41	30	71				71
UT	9	7	16	20	9	22	38
VT		4	4	15	8	16	20
VA	21	18	39	56	9	56	95
WA	35	30	65	250	200	283	348
WV	1	2	3	15	6	19	22
WI	41	78	119	4		4	123
WY	1		1				1
US	781	749	1,530	1,388	617	1,507	3,037

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

Number of Refrigerated Warehouses by Size Group,  
United States, October 1, 1993

Type of Storage	Size	Number		
		Public	Private	All
	1,000 cubic feet			
General	0 - 499,999	160	424	584
	500,000 - 999,999	164	136	300
	1,000,000 - 2,499,999	232	125	357
	2,500,000 - 4,999,999	161	45	206
	5,000,000+	64	19	83
	bushels			
Apple and Pear		Regular <u>1/</u>	CA <u>1/</u>	All
	0 - 49,999	988	246	909
	50,000 - 99,999	149	113	202
	100,000 - 499,999	212	188	275
	500,000 - 999,999	33	38	68
	1,000,000+	6	32	53

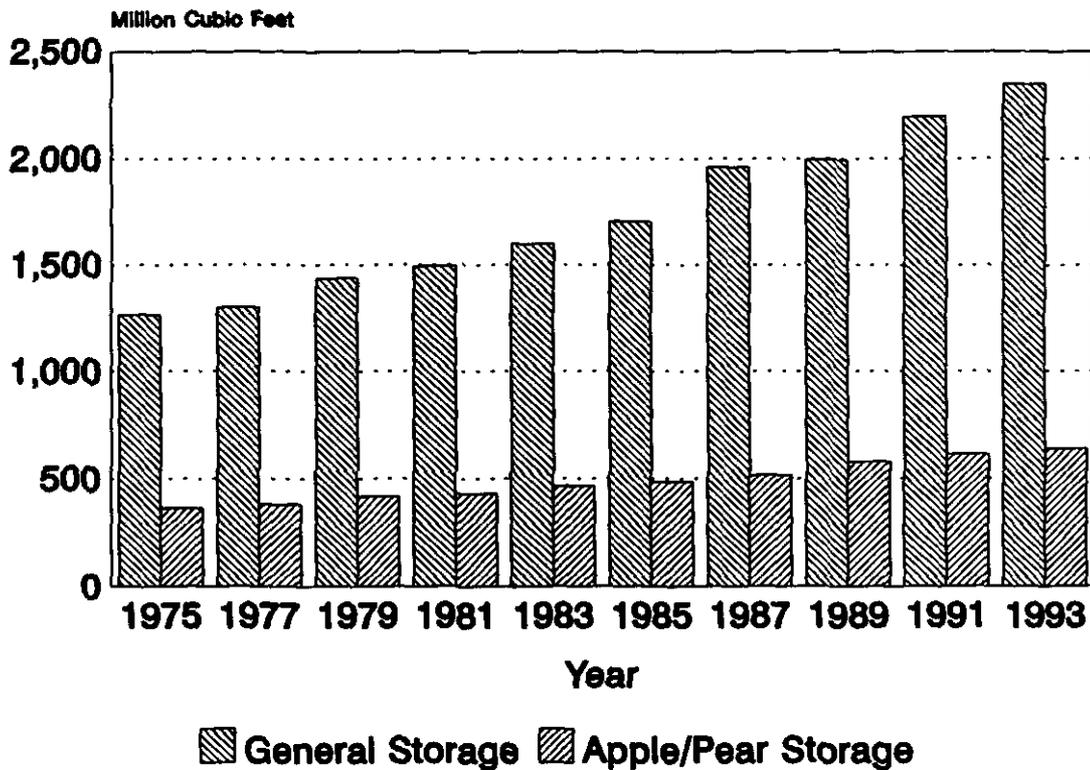
1/ Number of operations with regular or CA storage. Many operators have both types in the same building, thus the count of regular plus CA does not equal "All".

Gross Refrigerated Storage Capacity by Type of Warehouse,  
United States, October 1, 1975-93

Year	Public	Private and Semi-private	Total <u>1/</u>
Million Cubic Feet			
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
1993	1,700	1,272	2,972

1/ Totals may not add due to rounding.

## Gross Refrigerated Storage Capacity by Principal Storage Activity, U.S., 1975-93



Refrigerated Space by Type of Warehouse, United States, October 1, 1993 1/

Type	Number	Gross Space			Usable space		
		Cooler	Freezer	Total	Cooler	Freezer	Total
1,000 Cubic Feet							
General Public	781	306,456	1,372,005	1,678,461	232,557	1,054,283	1,286,840
Private & Semipvt	749	253,516	405,378	658,893	190,722	313,373	504,096
Total	1,530	559,971	1,777,383	2,337,354	423,280	1,367,657	1,790,936
Apple Public	27	21,645		21,645	16,709		16,709
Private & Semipvt	1,480	608,059	5,033	613,093	490,835	3,854	494,690
Total	1,507	629,704	5,033	634,737	507,544	3,854	511,399
Total	3,037	1,189,675	1,782,417	2,972,092	930,824	1,371,511	2,302,335

Gross Refrigerated Space by Type of Warehouse, United States, October 1, 1975-93 1/

Type	1975	1977	1979	1981	1983
1,000 Cubic Feet					
General Public	844,946	860,542	908,394	956,153	1,028,300
Private and Semiprivate	419,828	438,110	529,483	539,992	573,463
Total	1,264,774	1,298,652	1,437,877	1,496,145	1,601,763
Apple Public	30,346	33,047	31,611	26,940	18,871
Private and Semiprivate	334,944	346,833	382,977	401,889	445,996
Total	365,290	379,880	414,588	428,829	464,867
Total, All	1,630,064	1,678,532	1,852,464	1,924,973	2,066,631
1,000 Cubic Feet					
General Public	1,110,394	1,285,860	1,391,901	1,572,879	1,678,461
Private and Semiprivate	589,132	676,369	603,402	624,005	658,893
Total	1,699,526	1,962,229	1,995,303	2,196,884	2,337,354
Apple Public	19,383	19,750	21,945	27,227	21,645
Private and Semiprivate	466,768	494,404	554,150	584,296	613,093
Total	486,151	514,154	576,095	611,523	634,737
Total, All	2,185,677	2,476,384	2,571,397	2,808,407	2,972,092

1/ Totals may not add due to rounding.

General Storages: Gross and Usable Refrigerated Space,  
by State and United States, October 1, 1993 1/ 2/

State	Gross Space			Usable Space		
	Public	Private & Semiprvt	Total	Public	Private & Semiprvt	Total
	1,000 Cubic Feet					
AL	19,272	775	20,047	16,115	596	16,711
AK	*	*	1,245	*	*	1,152
AZ	8,094	2,109	10,203	6,431	1,853	8,284
AR	39,247	1,434	40,682	32,925	1,149	34,074
CA	214,327	103,344	317,670	160,369	81,073	241,443
CO	11,753	1,597	13,350	8,216	1,044	9,260
CT	*	*	507	*	*	393
DE	9,699	11,314	21,012	6,022	7,952	13,974
FL	63,940	107,638	171,578	51,213	85,618	136,831
GA	72,684	16,527	89,211	56,441	13,681	70,123
HI	*	*	*	*	*	*
ID	22,411	21,528	43,939	18,396	17,965	36,361
IL	65,385	30,849	96,234	50,473	22,126	72,598
IN	36,794	5,045	41,839	29,155	3,907	33,062
IA	48,254	5,632	53,887	39,004	3,884	42,888
KS	77,700		77,700	61,774		61,774
KY	*	*	9,646	5,306	1,648	6,954
LA	7,820	1,721	9,540	6,207	1,421	7,628
ME	*	*	15,992	*	*	11,309
MD	21,104	3,848	24,953	16,039	2,548	18,587
MA	29,448	18,053	47,501	23,085	13,924	37,009
MI	50,773	14,495	65,268	37,625	12,148	49,773
MN	28,045	18,967	47,011	19,700	13,135	32,835
MS	*	*	*	*	*	*
MO	74,102	11,041	85,143	60,600	8,562	69,162
MT	*	*	*	*	*	*
NE	24,015	2,763	26,779	18,294	2,105	20,398
NV	*	*	2,815	*	*	2,551
NH			*		*	*
NJ	74,736	11,261	85,996	57,432	8,940	66,372
NM	*	*	594	*	*	454
NY	53,487	29,003	82,489	35,620	22,201	57,821
NC	36,573	8,551	45,123	28,930	6,145	35,075
ND	*	*	*	*	*	*
OH	41,995	4,665	46,660	33,881	3,465	37,347
OK	8,514	4,488	13,002	5,859	3,461	9,320
OR	64,820	38,242	103,062	54,955	29,592	84,546
PA	72,985	13,016	86,001	53,415	9,491	62,906
RI	*	*	*	*	*	*
SC	11,383	1,692	13,075	9,487	1,273	10,760
SD	*	*	5,383	*	*	4,034
TN	23,277	9,374	32,652	13,940	4,976	18,916
TX	100,033	25,714	125,747	60,991	20,988	81,979
UT	20,980	4,587	25,567	16,879	3,587	20,466
VT		*	*		*	*
VA	27,259	18,045	45,304	21,294	14,800	36,094
WA	117,215	43,347	160,563	96,173	33,480	129,653
WV	*	*	*	*	*	*
WI	75,298	34,525	109,822	59,834	23,854	83,688
WY	*	*	*	*	*	*
Oth Sts	25,039	33,703	22,562	14,760	21,504	16,371
US	1,678,461	658,893	2,337,354	1,286,840	504,096	1,790,936

\* 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, 1993 1/ 2/

State	Gross Space			Usable Space		
	Public	Private & Semiprvt	Total	Public	Private & Semiprvt	Total
	1,000 Cubic Feet					
AL	*	*	6,068	*	*	5,182
AK	*	*	184	*	*	179
AZ	*	*	*	*	*	*
AR	*	*	2,340	*	*	1,851
CA	49,304	61,085	110,389	36,702	47,368	84,070
CO	763	553	1,316	617	398	1,016
CT	*	*	*	*	*	*
DE	*	*	*	*	*	*
FL	9,652	36,196	45,848	7,599	27,493	35,092
GA	24,024	6,691	30,715	18,361	5,573	23,934
HI	*	*	*	*	*	*
ID	*	*	449	*	*	369
IL	14,628	14,106	28,735	11,537	9,883	21,420
IN	*	*	3,061	*	*	2,441
IA	4,688	1,968	6,656	3,929	1,074	5,003
KS	19,387	*	19,387	14,019	*	14,019
KY	*	*	*	*	*	*
LA	1,504	799	2,304	1,274	697	1,971
ME	*	*	339	*	*	262
MD	*	*	1,365	*	*	1,058
MA	2,900	2,614	5,514	2,432	1,874	4,306
MI	5,587	5,673	11,260	4,288	4,979	9,266
MN	4,489	7,753	12,243	3,163	4,911	8,073
MS	*	*	*	*	*	*
MO	22,695	2,835	25,529	18,882	2,254	21,135
MT	*	*	*	*	*	*
NE	*	*	8,813	*	*	6,971
NV	*	*	663	*	*	659
NH	*	*	*	*	*	*
NJ	29,033	6,005	35,038	22,678	4,572	27,250
NM	*	*	*	*	*	*
NY	10,999	16,313	27,313	7,545	13,049	20,594
NC	4,417	4,662	9,079	3,491	3,336	6,827
ND	*	*	*	*	*	*
OH	8,063	1,169	9,232	6,270	975	7,245
OK	*	*	3,722	*	*	2,994
OR	1,701	2,169	3,870	1,357	1,722	3,079
PA	9,620	4,884	14,504	6,781	3,268	10,048
RI	*	*	*	*	*	*
SC	*	*	972	*	*	758
SD	*	*	*	*	*	*
TN	*	*	3,515	*	*	1,821
TX	20,265	16,722	36,987	12,297	14,043	26,340
UT	*	*	3,561	*	*	2,457
VT	*	*	*	*	*	*
VA	10,282	11,355	21,638	8,574	9,241	17,815
WA	3,710	5,664	9,374	2,913	4,029	6,943
WV	*	*	*	*	*	*
WI	19,957	27,481	47,438	14,719	18,747	33,467
WY	*	*	*	*	*	*
Oth Sts	28,788	16,819	10,550	23,129	11,236	7,365
US	306,456	253,516	559,971	232,557	190,722	423,280

\* 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, 1993 1/ 2/

State	Gross Space			Usable Space		
	Public	Private & Semiprvt	Total	Public	Private & Semiprvt	Total
	1,000 Cubic Feet					
AL	*	*	13,979	*	*	11,530
AK	*	*	1,061	*	*	972
AZ	*	*	*	*	*	*
AR	*	*	38,342	*	*	32,223
CA	165,022	42,259	207,282	123,668	33,705	157,373
CO	10,990	1,044	12,034	7,599	646	8,245
CT	*	*	*	*	*	*
DE	*	*	*	*	*	*
FL	54,288	71,442	125,730	43,615	58,125	101,739
GA	48,661	9,836	58,497	38,080	8,109	46,189
HI	*	*	*	*	*	*
ID	*	*	43,490	*	*	35,992
IL	50,756	16,743	67,499	38,936	12,243	51,178
IN	*	*	38,778	*	*	30,620
IA	43,567	3,665	47,231	35,076	2,810	37,885
KS	58,313	*	58,313	47,755	*	47,755
KY	*	*	*	*	*	*
LA	6,315	921	7,236	4,933	724	5,657
ME	*	*	15,653	*	*	11,047
MD	*	*	23,587	*	*	17,529
MA	26,548	15,439	41,987	20,653	12,050	32,703
MI	45,186	8,822	54,008	33,337	7,170	40,507
MN	23,555	11,213	34,769	16,537	8,224	24,762
MS	*	*	*	*	*	*
MO	51,407	8,207	59,614	41,718	6,309	48,027
MT	*	*	*	*	*	*
NE	*	*	17,965	*	*	13,427
NV	*	*	2,152	*	*	1,891
NH	*	*	*	*	*	*
NJ	45,702	5,256	50,958	34,754	4,368	39,122
NM	*	*	*	*	*	*
NY	42,487	12,690	55,177	28,075	9,152	37,227
NC	32,155	3,889	36,044	25,439	2,810	28,249
ND	*	*	*	*	*	*
OH	33,931	3,496	37,428	27,611	2,490	30,101
OK	*	*	9,279	*	*	6,326
OR	63,119	36,073	99,192	53,597	27,870	81,467
PA	63,365	8,132	71,497	46,634	6,224	52,858
RI	*	*	*	*	*	*
SC	*	*	12,103	*	*	10,002
SD	*	*	*	*	*	*
TN	*	*	29,137	*	*	17,095
TX	79,768	8,992	88,760	48,694	6,945	55,639
UT	*	*	22,005	*	*	18,009
VT	*	*	*	*	*	*
VA	16,977	6,689	23,666	12,720	5,559	18,278
WA	113,505	37,684	151,189	93,260	29,451	122,711
WV	*	*	*	*	*	*
WI	55,341	7,043	62,384	45,115	5,107	50,221
WY	*	*	*	*	*	*
Oth Sts:	241,047	85,843	59,357	186,477	63,282	43,101
US	1,372,005	405,378	1,777,383	1,054,283	313,373	1,367,657

\* 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, 1993 1/ 2/

State	Refrigerated Space		Apple Storage Capacity		
	Gross	Usable	Regular	Controlled Atmosphere	Total
	1,000 Cubic Feet		1,000 Bushels		
CA	27,159	19,666	5,697	2,738	8,434
CO	2,038	1,618	*	*	548
CT	1,720	1,368	461	107	568
ID	4,728	4,268	793	946	1,739
IL	1,588	1,296	*	*	547
IN	2,714	2,140	677	235	912
ME	4,219	3,578	834	827	1,661
MD	2,162	1,720	*	*	789
MA	5,975	4,826	1,484	596	2,079
MI	36,019	31,366	5,451	8,288	13,740
MN	822	693	*	*	289
NH	2,243	1,899	412	500	912
NJ	3,193	2,709	796	141	937
NY	31,285	26,193	5,312	6,170	11,482
NC	4,607	3,958	1,212	510	1,722
OH	3,861	3,163	1,015	258	1,273
OR	45,036	35,708	7,538	2,467	10,005
PA	26,773	21,244	4,973	1,869	6,843
RI	175	160	*	*	57
SC	858	690	*	*	294
UT	2,880	2,571	527	575	1,102
VT	2,518	2,150	365	645	1,010
VA	16,572	13,742	4,065	1,550	5,615
WA	394,352	315,434	56,391	101,326	157,717
WV	7,711	6,312	2,107	484	2,591
Oth Sts:	3,529	2,927	2,755	817	1,048
US	634,737	511,399	102,865	131,049	233,914

\* 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 and 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 that did not respond 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 set 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.

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