SILO CAPACITIES OF CORNAGE PER FOOT OF HEIGHT

Approximate bushels of dry grain (15.5%)

Kernel Moisture Content	Conver-sion Factor	Inside silo diameter (feet)										
		8	10	12	14	16	18	20	22	24	26	30
SHELLED CORN (1.25 cubic feet per bushel at 15.5 per cent moisture)												
15.5(*)	1.0	40	63	90	123	160	204	251	304	362	424	640
24	.93	37	58	84	114	148	188	233	281	334	392	592
28	.89	35	56	80	109	142	180	224	270	320	376	568
32	.85	34	53	77	105	136	173	214	258	307	360	543
GROUND EAR CORN (1.94 cubic per bushel at 15.5 percent kernel moisture)												
15.5	1.00	26	41	59	80	103	131	162	196	233	274	413
24	.90	23	37	53	72	94	119	148	176	213	250	375
28	.86	22	35	50	69	90	114	141	169	203	238	358
32	.83	21	34	48	66	86	109	134	162	193	227	342

* This first line is for dry grain and can be used to measure capacity of round bins for all small grains.
Conversion Factor – For any size not listed multiply the dry grain capacity of the storage by this factor at listed moisture content to determine equivalent in dry grain.
Density increases with depth but no allowance was made for compaction in this table. Silos 40 feet or higher may have 10 percent greater capacity then shown in table.

CAPACITIES OF BINS AND CRIBS IN DRY GRAIN

To find the capacities in bushels, first find the volume in cubic feet:
For a crib or cube multiply the length x width x height (all in feet).
For round bins, cribs, or silo multiply the radius (1/2 diameter) x radius x 3.1416 x height.
Then to convert cubic feet to bushels:
Multiply by .8 for small grain or shelled corn.
Multiply by .4 if ear corn.
Multiply by .515 if ground ear corn.

For round bins you may use the top line in Table and multiply by height in feet.

Crib capacities in bushels for ear corn per foot of length:

Width In feet	Height in Feet				
	8’	10’	12’	14’	16’
5	16.0	20.0	24.0	28.0	32.0
6	19.2	24.0	28.8	33.6	38.4

STANDARD WEIGHTS OF FARM PRODUCTS PER BUSHEL

	lbs.		lbs.		lbs.
Alfalfa……	60	Corn (shelled)…...	56	Ryegrass……	24
Apples(average)……..	42	Corn kernel meal..	50	Rye…….	56
Barley……	48	Corn (sweet)…….	50	Soybeans……....	60
Beans……	60	Cowpeas……	60	Spelt……	30-40
Bluegrass, (Kentucky)……	14-28	Flax…….	56	Sorghum……	56
Bromegrass, Orchard Grass..	14	Millet (grain)……..	50	Sudan Grass….	40
Buckwheat……	50	Oats……	32	Sunflower……....	24
Clover……	60	Onions……	52	Timothy……...	45
Corn (dry ear)……...	70	Peas……...	60	Wheat……	60
Corn and cob meal……...	45	Potatoes……	60	Milk, per gallon..	8.6

RULE OF THUMB ON SILO CAPACITIES:

20' x 60' = 500 T.
20' x 50' = 390 T.
20' x 40' = 280 T.
20' x 70' = 575 T.

For any other size silo the radius squared expressed as a decimal (divided by 100) times the tonnage of a 20 ft. silo will give the capacity in tons.

Examples:

30' x 60' -– 15 x 15 = 2.25 x 500 or 1145 Tons
16' x 50' –– 8 x 8 = .64 x 390 or 250 Tons
30' x 60' –– 6 x 6 = .36 x 280 or 101 Tons

TO CONVERT HIGH MOISTURE FORAGE TO DRY HAY EQUIVALENT

Method A – Read the tonnage from the Silo Capacity Table. Then divide this figure by 3 to convert to dry hay equivalent. This will be a close estimate regardless of the moisture content of the grass or haylage.

Method B – Multiply the tonnage of green or wet material by the dry hay per ton equivalent in the following table:

Hay or Forage	Percent Moisture	Dry Hay Per Ton
Green chop	88	.25 tons
Grass silage	70	.34
Grass silage	65	.40
Haylage	60	.45
Haylage	50	.57
Haylage	40	.68

MEASUREMENT STANDARDS, HAY AND STRAW

	Average Cu.ft./ ton	Range Cu. Ft./ ton
Hay, baled	275	250-300
Hay, chopped – field cured	425	400-450
Hay, chopped – mow cured	325	300-350
Hay, long	500	475-525
Straw, baled	450	400-500
Straw, chopped	600	575-625
Hay, loose	480	370-390
Straw, loose	800	750-850

SILO CAPACITY: TONS OF CORN OR GRASS SILAGE (68% MOISTURE) IN SETTLED UNOPENED SILOS

Depth of silage (in feet)	Inside diameter of silo in feet							
	12'	14'	16'	18'	20'	24'	26'	30'
8	11	15	20	25	31	45	52	70
12	19	25	33	42	52	75	88	117
16	28	38	49	62	77	111	130	173
20	38	51	67	85	105	151	177	236
24	49	66	87	110	135	194	228	304
28	61	83	108	137	169	243	286	380
32	74	100	131	166	205	295	346	461
36	87	118	155	196	242	348	409	545
40	101	138	180	229	280	403	473	630
44	117	159	207	261	320	461	541	720
50	137	186	248	310	389	560	673	875
55	---	212	383	365	444	639	750	999
60	---	---	319	415	500	720	845	1125
70	---	---	---	---	574	827	970	1290
80	---	---	---	---	650	1100	1330	1880
90	---	---	---	---	---	---	---	2470

NOTE: When a silo is partially unloaded from the top, the remaining silage is more tightly packed and heavier than the same volume in an unopened silo. Therefore, compute the weight remaining as follows:

	Example
1. Use the table to find the original contents before the silo was opened.	50' of settled silage in a 20' silo weight 389 T.
2. Estimate depth of silage removed and determine in weight from table.	Weight removed in 32'=205 Tons
3. Subtract tonnage removed from original contents to find tonnage remaining.	389 T. (original contents) –205 T. (removed in 32') 184 T. (remaining in 18')

BUNKER SILO – Capacity for Corn Silage, 70 Percent Moisture

Formula:

$$\frac{\text{Average length x width x settled depth (all in feet) x 40 lbs}}{\text{2000 lbs.}} = \text{Tons}$$

Weight per cu. Ft. will vary by amount of packing, fineness of cut, Moisture content, and depth of material. Use the following table to Estimate pounds per cu. ft. according to depth of pile.

Depth of silage	Pounds per cu. ft.
6 ft.	32 lbs.
8	36
12	40
20	45