

POPULATION OR SEED DROP PER ACRE

This table can be used for all crops to determine plant population or seed drop per acre. Simply follow these easy steps.

- (1) Find average row width, in inches (top line).
- (2) Either determine average spacing between seed (or plants), in inches, (left column)
OR determine average number of seeds (or plants) per 50-foot row length (right column).
- (3) Read seed drop (or plants) per acre from table (intersection of line and column).

Example (Seed Drop): You want to drop 29,000 corn kernels per acre and are using 36-inch rows. Find "36" in the top line, read down to "29", read across to "6" in the left column. Seeds should be spaced 6 inches apart.

Example (Seed Drop): In checking behind your drill with 15-inch row spacing, you determine that the seeds average 3 inches apart. Read down the left column to "3", read across in the "15" column, where the column and line intersect read "139". You are planting approximately 139,000 seeds per acre.

Example (Plant Population): You make several stand counts and calculate an average of 55 plants per 50 feet of row. The rows are 30 inches apart. Read down the right column to "55", read across to the "30" column, where the column and line intersect read "19". The plant population is approximately 19,000 per acre.

| AVG. PLANT OR SEED SPACING (INCHES) *** | ROW WIDTH (INCHES) | | | | | | | | | AVG. PLANTS OR SEEDS PER 50-FOOT ROW** |
|---|---|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | 7 | 10 | 15 | 20 | 28 | 30 | 36 | 38 | 40 | |
| | PLANTS OR SEEDS PER ACRE, IN THOUSANDS* | | | | | | | | | |
| 1 | 896 | 627 | 418 | 314 | 224 | 209 | 174 | 165 | 157 | 600 |
| 2 | 448 | 314 | 209 | 157 | 112 | 105 | 87 | 83 | 78 | 300 |
| 3 | 299 | 209 | 139 | 105 | 75 | 70 | 58 | 55 | 52 | 200 |
| 4 | 224 | 157 | 105 | 78 | 56 | 52 | 44 | 41 | 39 | 150 |
| 5 | 179 | 125 | 84 | 63 | 45 | 42 | 35 | 33 | 31 | 120 |
| 6 | 149 | 105 | 70 | 52 | 37 | 35 | 29 | 28 | 26 | 100 |
| 7 | 128 | 90 | 60 | 45 | 32 | 30 | 25 | 24 | 22 | 86 |
| 9 | 100 | 70 | 46 | 35 | 25 | 23 | 19 | 18 | 17 | 67 |
| 11 | 81 | 57 | 38 | 29 | 20 | 19 | 16 | 15 | 14 | 55 |
| 12 | 75 | 52 | 35 | 26 | 19 | 17 | 15 | 14 | 13 | 50 |
| 15 | 60 | 42 | 28 | 21 | 15 | 14 | 12 | 11 | 10 | 40 |

For other situations not shown, use these formulas:

*Plants or seed/acre (thousands) = (number seeds or plants/50-foot row x 10.45) ÷ row width (inches)

*Plants or seed/acre (thousands) = (6,273 ÷ row width [inches]) ÷ average kernel spacing (inches)

** Seed or plants/50-foot row = seeding rate/acre ÷ (10.45 ÷ row width [inches])

***Avg. kernel spacing (inches) = (6,273 ÷ row width [inches]) ÷ plants or seed/acre

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HYBRID CORN PLANT POPULATION PER ACRE

| AVG. PLANT SPACING | PLANTS PER ACRE BY ROW WIDTH (IN THOUSANDS) | | | | | AVG. PLANTS PER 50' ROW |
|--------------------|---|------|------|------|------|-------------------------|
| | 20" | 22" | 30" | 36" | 38" | |
| 5.5" | 57.0 | 51.9 | 37.6 | 31.4 | 29.7 | 108 |
| 5.7" | 55.0 | 50.1 | 36.2 | 30.2 | 28.6 | 104 |
| 6.0" | 52.3 | 47.6 | 34.8 | 29.0 | 27.5 | 100 |
| 6.2" | 50.6 | 46.0 | 33.4 | 27.9 | 26.4 | 96 |
| 6.5" | 48.3 | 43.9 | 32.1 | 26.7 | 25.3 | 92 |
| 6.8" | 46.1 | 42.0 | 30.7 | 25.6 | 24.2 | 88 |
| 7.0" | 44.8 | 40.8 | 29.9 | 24.9 | 23.6 | 85 |
| 7.3" | 43.0 | 39.1 | 28.6 | 23.8 | 22.6 | 82 |
| 7.5" | 41.8 | 38.1 | 27.9 | 23.2 | 22.0 | 80 |
| 7.8" | 40.2 | 36.6 | 26.5 | 22.1 | 20.9 | 76 |
| 8.0" | 39.2 | 35.7 | 26.1 | 21.8 | 20.6 | 75 |
| 8.3" | 37.8 | 34.4 | 25.1 | 20.9 | 19.8 | 72 |
| 8.5" | 36.9 | 33.6 | 24.4 | 20.3 | 19.3 | 70 |
| 8.8" | 35.6 | 32.4 | 23.6 | 19.7 | 18.7 | 68 |
| 9.0" | 34.8 | 31.7 | 23.0 | 19.2 | 18.2 | 66 |
| 9.3" | 33.7 | 30.7 | 22.3 | 18.6 | 17.6 | 64 |
| 9.5" | 33.0 | 30.0 | 22.0 | 18.0 | 17.4 | 62 |
| 10.0" | 31.4 | 28.6 | 20.9 | 17.4 | 16.5 | 60 |
| 10.3" | 30.4 | 27.7 | 20.2 | 16.8 | 16.0 | 58 |
| 10.5" | 29.9 | 27.2 | 19.9 | 16.6 | 15.7 | 57 |
| 10.7" | 29.3 | 26.7 | 19.5 | 16.3 | 15.4 | 56 |
| 11.0" | 28.5 | 26.2 | 19.0 | 16.0 | 15.0 | 55 |
| 11.5" | 27.3 | 24.8 | 18.1 | 15.1 | 14.3 | 52 |
| 12.0" | 26.1 | 23.8 | 17.4 | 14.5 | 13.8 | 50 |
| 12.5" | 25.1 | 22.8 | 16.7 | 13.9 | 13.2 | 48 |
| 13.0" | 24.1 | 22.0 | 16.0 | 13.4 | 12.7 | 46 |
| 13.5" | 23.2 | 21.1 | 15.5 | 12.8 | 12.2 | 44 |
| 14.0" | 22.4 | 20.4 | 14.9 | 12.2 | 11.8 | 42 |
| 15.0" | 20.9 | 19.0 | 13.9 | 11.6 | 11.0 | 40 |

ESTIMATING POPULATION ROW CROPS

| ROW WIDTH | LENGTH OF ROW FOR 1/1000 ACRE | HOW MANY PLANTS PER ACRE? Step 1: Measure 1/1000 of acre Count plants. Step 2: Multiply by 1000 Example: 40" rows-measure 13'1" Counted 18 plants. Multiply by 1000. 18,000 plants per acre. |
|-----------|-------------------------------|---|
| 7" | 75' 1" | |
| 10" | 53' 4" | |
| 12" | 43' 7" | |
| 14" | 37' 5" | |
| 18" | 29' 1" | |
| 20" | 26' 2" | |
| 22" | 23' 9" | |
| 24" | 21' 10" | |
| 30" | 17' 5" | |
| 36" | 14' 6" | |
| 38" | 13' 9" | |
| 40" | 13' 1" | |

SEED PLANTING GUIDE

| KIND OF SEED | LBS/ BUSHEL | LBS/ ACRE | SEEDING DEPTH | PLANTING DATE |
|-------------------------------------|-------------|-----------|---------------|-----------------------------|
| Alfalfa (drilled) | 60 | 10-15 | 1/2" | April-Sept. 1 |
| (Broadcast) | 60 | 12-20 | 1/2" | April-Sept. 1 |
| Barley | 48 | 90-110 | 1 1/2"-2" | April-May |
| Birdsfoot Trefoil | 60 | 4-6 | 1/2" | April - May 1 |
| Bluegrass (lawns) (1000 sq. ft.) | 14 | 4 lbs. | 1/4" | April - July Sept.- Oct. |
| (Pastures) | 14 | 25-30 | 1/4" | April - July Sept. |
| Bluestem Big & Little | 14 | 6-10 | 1/2" | June-August |
| Bromegrass | 50 | 15-20 | 1/2" | April, August-Sept. |
| Buckwheat | 60 | 45-55 | 1 1/2" | April-June |
| Clover Alsike | 60 | 6-8 | 1/2" | April-May 15 |
| Clover Red Med. | 60 | 8-12 | 1/2" | April-May |
| Mammoth | 60 | 8-12 | 1/2" | April -May |
| Clover Sweet | 60 | 8-12 | 1/2" | April -May |
| Clover White | 60 | 3-5 | 1/2" | April -June |
| Fescue Kg-31 | 24 | 20-25 | 1/2" | April or August |
| Flax | 56 | 42-56 | 1 1/2" | April-May |
| Garrison Creeping Foxtail | - | 3-5 | 1/2" | Spring |
| Millet, Foxtail (Hay) | 50 | 25-40 | 1" | May 15-July 15 |
| Millet, Proso (Grain) | 50 | 15-25 | 1" | May 15-July 15 |
| Oats | 32 | 64-96 | 1 1/2" | March-April |
| Orchard Grass | 14 | 20-25 | 1/2" | Spring & Fall |
| Popcorn | 60 | 3-6 | 2" | May & June |
| Rape | 50 | 4-8 | 1" | April-August |
| Reeds Canary Grass | 32 | 5-6 | 1/2" | Spring & Fall |
| Soybeans (Drilled) | 60 | 60-90 | 2" | May |
| Soybeans (Rows) | 60 | 50-70 | 2" | May |
| Sudangrass | 40 | 20-30 | 1" | May 15-July 1 |
| Switchgrass | 60 | 4-8 | 1/2" | Spring & Fall |
| Timothy | 45 | 8-12 | 1/2" | April & Sept. |
| Turnips | 55 | 2-8 | 1/2" | May & June |
| Wheat Spring | 60 | 60-90 | 1 1/2" | April |
| Wheat Winter | 60 | 60-75 | 1 1/2" | Sept. |
| Wheatgrass Int. | 22 | 15-20 | 1/2" | Spring & Fall |
| Wheatgrass Crested | 22 | 8-12 | 1/2" | Spring & Fall |
| White Dutch Clover | 60 | 2-6 | 1/2" | Spring & Fall |
| Rye Grain | 56 | 56-84 | 1 1/2" | Sept. |
| Sorghum Sudan (Rows) | 56 | 10-12 | 1" | May & June |
| Sorghum Sudan (Broadcast) | 56 | 20-30 | 1" | May & June |
| Sunflowers | 24 | 3-5 | 1" | May & June |

CALCULATIONS

Use your calculator and these formulas to quickly figure exact acreage, yields and storage capacity.

ACREAGE

Corn, Soybeans & Sorghum (row length, ft.) x (row width, in.) x (no. of rows) ÷ 522,720 = acres
 Wheat (row length, ft.) x (width of harvest strip, ft.) ÷ 43,560 = acres

YIELD

Corn-Grain (100 - harvest moisture) x (lbs. grain harvested) x (110.465) ÷ (row length, ft.)
 ÷ (row width, in.) ÷ (no. rows harvested) = bu./A. of corn at 15.5% moisture
 Corn-Silage (100 - actual %p silage moisture) x (green wt. silage, lbs./A.) ÷ (30) = lbs./A. of silage adjusted to 70% moisture
 Soybeans (100 - harvest moisture) x (lbs. grain harvested) x (100.138) ÷ (row length, ft.)
 ÷ (row width, in.) ÷ (no. rows harvested) = bu./A. of soybeans at 13% moisture
 Sorghum (100 - harvest moisture) x (lbs. grain harvested) x (6078.14) ÷ (row length, ft.)
 ÷ (row width, in.) ÷ (no. rows harvested) = lbs./A. of sorghum at 14% moisture

STORAGE CAPACITY

Corn, Soybeans & Sorghum
 Round bin: (bin diameter, ft.) x (bin diameter, ft.) x (depth, ft.) x (.6283) = bu. stored
 Rectangular storage: (width, ft.) x (length, ft.) x (depth, ft.) x (.8) = bu. stored

TAKING STAND COUNTS IN SOLID-SEEDED SOYBEANS

Roll a hula hoop, let it fall, and count the number of plants inside the hoop. Repeat at least eight times at random locations in the field. Multiply the average of all counts taken by the factor below to determine the approximate population per acre.

| Hoop Diameter | 30" | 32" | 34" | 36" | 38" |
|---------------|-------|-------|-------|-------|-------|
| Multiply by | 8,900 | 7,800 | 6,900 | 6,200 | 5,500 |

| ROW WIDTH | DESIRED SEEDS PER ACRE (X1000) | | | | | |
|-----------|--------------------------------|-----|------|------|------|------|
| | 100 | 125 | 150 | 175 | 200 | 225 |
| | SEEDS PER FOOT OF ROW | | | | | |
| 40" | 7.7 | 9.6 | 11.5 | 13.4 | 15.3 | 17.2 |
| 38" | 7.3 | 9.1 | 10.9 | 12.7 | 14.5 | 16.4 |
| 36" | 6.9 | 8.6 | 10.3 | 12.1 | 13.8 | 15.5 |
| 30" | 5.7 | 7.2 | 8.6 | 10.0 | 11.5 | 12.9 |
| 22" | 4.2 | 5.3 | 6.3 | 7.4 | 8.4 | 9.5 |
| 20" | 3.8 | 4.8 | 5.7 | 6.7 | 7.7 | 8.6 |
| 15" | 2.9 | 3.6 | 4.3 | 5.0 | 5.7 | 6.5 |
| 12" | 2.3 | 2.9 | 3.4 | 4.0 | 4.6 | 5.2 |
| 10" | 1.9 | 2.4 | 2.9 | 3.3 | 3.8 | 4.3 |
| 7.5" | 1.4 | 1.8 | 2.2 | 2.5 | 2.9 | 3.2 |
| 6" | 1.2 | 1.4 | 1.7 | 2.0 | 2.3 | 2.6 |

WEIGHTS & MEASURES

WEIGHT

1 metric ton = 2305 pounds
 1 short ton = 2300 pounds
 1 pound = 16 ounces
 1 gram = .035 ounce
 1 kilogram = 2.2046 pounds

LINEAR MEASURE (LENGTH)

1 mile = 5280 feet or 320 rods
 1 rod = 16.5 feet, 1.5 yards
 1 inch = 2.54 centimeters
 1 meter = 39.37 inches
 1 kilometer = 0.62 miles

SQUARE MEASURE (AREA)

1 acre = 160 sq/ rods or
 43,560 square feet
 1 hectare = 2.47 acres
 1 sq. rod = 30.25 square yards
 1 sq. yard = 9 sq. feet
 1 sq. foot = 144 sq. inches

CUBIC MEASURES (VOLUME)

1 cubic yard = 27 cubic feet
 1 cubic foot = 1728 cubic inches
 1 acre inch = 3630 cubic feet
 or 27,154 gallons
 1 cubic pint = 7.48 gallons or
 62.4 pounds of water
 1 gallon = 8.345 pounds of water
 27 cubic ft = 1 cubic yard

DRY MEASURE

1 bushel = 4 pecks
 1 peck = 8 quarts
 1 quart = 2 pints

LIQUID MEASURE

1 gallon = 4 quarts
 1 quart = 2 pints
 1 pint = 16 fluid ounces
 or 2 cups
 1 liter = 1.06 quarts