

SEEDING RATE CALCULATOR

Web-based tools are valuable aids that can be used to determine amounts of and associated costs for inputs used in soybean production.

An excellent web-based seed rate [calculator](#) devised by the University of Illinois Dept. of Crop Science Extension and Outreach is a handy tool for calculating the number of seed to plant to obtain a desired plant population, and the cost associated with that seeding rate.

Results from using this calculator based on the price of a 50-lb. bag of seed for two soybean varieties planted in 20-in.-wide rows to achieve a final stand of 135,000 plants/acre are shown below. Seed size for the two varieties was obtained from the 2012 Miss. Soybean Variety Test publication.

Seed Type: Soybean			
Input		Output	
Field Size (<i>acres</i>)	50	Seeding rate (<i>seeds per acre</i>)	150,000
Seed Variety	94Y61 (Pioneer)	Planter calibration number (<i>seeds dropped per foot of row</i>)	5.74
Cost of seed per unit—\$ per 50-lb. bag	60	Seed spacing (<i>inches</i>)	2.09
Technology fee per unit	0	Pounds per acre	44.35
Row spacing (<i>inches</i>)	20	Units per acre	0.89
Desired final plant pop. (<i>thousands/acre</i>)	135	Units of seed to plant this field	44.35 lb.
% of seeds expected to result in plants (<i>0-100</i>)	90	Seed cost per acre	53.22
Seed size (<i>seeds per pound</i>)	3382	Total cost per acre	53.22
Pounds of seed per unit	50	Total cost for this field	2661.15

Seed Type: Soybean			
Input		Output	
Field Size (<i>acres</i>)	50	Seeding rate (<i>seeds per acre</i>)	150,000
Seed Variety	DG4575R2Y (Delta Grow)	Planter calibration number (<i>seeds dropped per foot of row</i>)	5.74
Cost of seed per unit—\$ per 50-lb. bag	60	Seed spacing (<i>inches</i>)	2.09
Technology fee per unit	0	Pounds per acre	67.08
Row spacing (<i>inches</i>)	20	Units per acre	1.34
Desired final plant pop. (<i>thousands/acre</i>)	135	Units of seed to plant this field	67.08 lb.
% of seeds expected to result in plants (<i>0-100</i>)	90	Seed cost per acre	80.50
Seed size (<i>seeds per pound</i>)	2236	Total cost per acre	80.50
Pounds of seed per unit	50	Total cost for this field	4025.04

An interesting result from the above example calculation is the difference in cost per acre

associated with using the same seeding rate for varieties that have widely divergent seed sizes.

This calculator, with a modification, can also be used to calculate the cost of seed per acre when they are sold on a per 1000 seed basis.

To make this modification, divide 1000 by the number of seeds per pound of the variety and place the resulting number in the “pounds of seed per unit” cell. Results from this modification applied to the calculator using the same two varieties and criteria from above are shown in the below tables. Note that only the cost figures are different from those in the above tables where cost was based on that of a 50-lb. bag.

Seed Type: Soybean			
Input		Output	
Field Size (<i>acres</i>)	50	Seeding rate (<i>seeds per acre</i>)	150,000
Seed Variety	94Y61 (Pioneer)	Planter calibration number (<i>seeds dropped per foot of row</i>)	5.74
Cost of seed per unit—\$ per 1000 seed	.40	Seed spacing (<i>inches</i>)	2.09
Technology fee per unit	0	Pounds per acre	44.35
Row spacing (<i>inches</i>)	20	Units per acre (1000-seed units)	150
Desired final plant pop. (<i>thousands/acre</i>)	135	Units of seed to plant this field (units of 1000 seed)	7500
% of seeds expected to result in plants (0-100)	90	Seed cost per acre	60
Seed size (<i>seeds per pound</i>)	3382	Total cost per acre	60
Pounds of seed per unit	.295683	Total cost for this field	3000

Seed Type: Soybean			
Input		Output	
Field Size (<i>acres</i>)	50	Seeding rate (<i>seeds per acre</i>)	150,000
Seed Variety	DG4575R2Y (Delta Grow)	Planter calibration number (<i>seeds dropped per foot of row</i>)	5.74
Cost of seed per unit—\$ per 1000 seed	.40	Seed spacing (<i>inches</i>)	2.09
Technology fee per unit	0	Pounds per acre	67.08
Row spacing (<i>inches</i>)	20	Units per acre (1000-seed units)	150
Desired final plant pop. (<i>thousands/acre</i>)	135	Units of seed to plant this field (units of 1000 seed)	7500
% of seeds expected to result in plants (0-100)	90	Seed cost per acre	60
Seed size (<i>seeds per pound</i>)	2236	Total cost per acre	60
Pounds of seed per unit	.4472271	Total cost for this field	3000

If cost of a chosen seeding rate is of no interest, just leave the “Cost of seed per unit” and “Technology fee per unit” cells blank to obtain only seeding rate and amount data.