

Tips for Calculating Your Seeding Rates

To help your pulse crop reach its full yield potential, it is important to have the appropriate plant density which starts with seeding rates. To do this effectively there are a number of factors that growers should be aware of, including:

1. Germination rate of the seed
2. Actual seed size (based on the thousand kernel weight, in grams)
3. Expected emergence rate

With these factors taken into consideration, you can use the following calculation to find the proper seeding rate for your pulse crops.

Actual seeding rate will fluctuate due to the range in seed size and seed weight of each crop and of individual seed lots within each crop class.

Table 1 gives you an understanding of what target plant populations to aim for with each pulse crop, to get the best yield and return. Knowing the thousand kernel weight (TKW) for your seed lot can help you accurately determine the seeding rate needed to achieve target plant populations. Without using the actual TKW of your seed lot you could be seeding too heavy, or too light, which can either cost extra in terms of seed cost or limit the full yield potential of the crop.

Emergence rate for pulses (survival rate) is typically 5-15% less than the germination rate and depends on many factors and stresses. Adverse environmental conditions, mechanical damage to the seed during seeding, as well as other potential stresses such as seed borne diseases, soil pests, seed placed fertilizer, seeding depth, and poor seedbed can negatively affect emergence. Many factors can impact seedling emergence and survival rates and should be considered when calculating seed rates.

For more specific information on seeding rates for each pulse crop, refer to the [Calculating Seeding Rates fact sheet](#).

$$\text{Seeding rate in kilograms per hectare (kg/ha)} = \frac{\text{Thousand kernel weight (grams)} \times \text{Target plant population (number per square metre)}}{\% \text{ expected emergence (ex. 85)}}$$

$$\text{To convert to seeding rate in pounds per acre (lb/ac)} = \text{Seeding rate (kg/ha)} \times 0.89$$

Table 1. Target Plant Populations for Pulse Crops in Saskatchewan

Crop	Target Plant Population (per square metre)	Target plant population (per square foot)	Average TKW (grams)
Chickpeas	40-45 (Kabuli) 35-40 (Desi)	4 3-4	220-425
Dry Beans	Narrow-row (dryland) 36 (black and navy) 21 (pinto) Wide-row (irrigated) 25-30	3.3 2 2.3-2.8	160-200 300-380
Lentils	130	12	25-80
Faba Beans	45	4	325-750
Peas	85	8	125-300
Soybeans	44-57	4-5	Not applicable