

**For those farmers that are using Air Drills and 1000 kernel weights.
Seeding Rates – What should you recommend to your customers?
Use this information only if the 1000 kernel weight topic arises.**

There are many factors that determine what an optimum seeding rate should be. I believe that things like seed size, desired plant populations and survivability rates are important and I will cover these. However, I also believe that other factors like seeding conditions, soil temperature, moisture conditions, time of seeding and seed placement are much more important and are issues that must be managed properly first. For example if you are seeding 3 inches deep into dry cold soil and traveling 7 mph do you think that it matters what you estimated for a survivability rate?

The seeding rate, seed size, survivability rate and germination percentage determine the number of viable plants per square foot. When you ask a customer what their seeding rate is they usually can give you an answer. My question to a customer is, what is your seeding rate in ideal conditions and how does your seeding rate change in less than ideal conditions? I suggest to you that these questions are much more important factors to manage first and then you can move on to using a formula to calculate a seeding rate using a 1000K weight.

Another important point with seeding rates in canola is what producers should target for plants per square foot and what are good estimates for seedling survivability. Most experts suggest that a range of 7 to 12 plants per square foot is likely the best. This range of targeting plant populations is an indication that canola yields are not highly correlated with established plant stands. Canola is a very elastic plant, unlike cereals. The survivability rate varies greatly from year to year and site to site. It is hard to predict how many plants will emerge or how many you should even target. A range is still very useful and my suggestion is to use the range in a way that takes into account seed bed conditions and seed placement. An example that makes this point clear was a farmer that had a seeding problem and only managed to get 2 lbs per acre seeded, his yield was 45 bushels per acre. Good growing conditions and excellent seed placement allowed this grower to get away with the seeding rate mistake. As canola is an elastic plant the crop overcame the low plants per square foot and still yielded well. The point to take from this is the fact that proper seed placement and other factors that are in control of the producer are much more important than using a 1000K weight to calculate the seeding rate. However in this particular case the maturity was significantly delayed because the canola plants had lots of room to do extra branching and thankfully the harvest weather was adequate to allow this delayed maturity.

Having said all of this we must have a way in which we can calculate a seeding rate that takes into account seed size, plant density and survivability rate. Our canola seed 1000 kernel weight is taken after the seed is coated, which does make the seed a little larger. If you use the formula: $\text{lbs/acre} = 9.6 \times \text{plants/ft}^2 \times 1000 \text{ kernel weight in grams} \div \% \text{ survival}$ and using a survivability rate of 40% and a kernel weight of 3.4541 grams you will have to seed at 5.8lbs per acre to achieve 7 plants per square foot. In this example we have used a survivability rate of 40%. Canola Council of Canada says that under average conditions 40 to 60% of the seed will produce viable plants, under above average conditions 60 to 80% will produce viable plants. What we

want to say to our customers is that because of the RED COAT ADVANTAGE you will have better emergence therefore the mortality rate will be lower and the survival rate will be higher. BOTTOM LINE FOR OUR CUSTOMERS IS THAT WHEN MAKING THIS CALCULATION THE RED COAT ADVANTAGE CAN GIVE YOUR CUSTOMERS A 10% INCREASE IN SURVIVABILITY. IF YOUR CUSTOMER WOULD NORMALLY USE A 50% SURVIVABILITY IN THEIR CALCULATION THEY CAN USE 60% IF THEY ARE USING REDCOAT.

Why will Redcoat give our customers this advantage?

As you know Redcoat is a micronutrient package that is applied over the top of the seed treatment. From extensive research this extra phosphorus strategically placed on the seed, was seen to almost always increase emergence and on average the yield increased by 8%. Canola, like most crops we grow in western Canada, takes up most of the phosphate it requires for the entire year in the first few weeks of growth. Good phosphate nutrition is critical in the early life of every seedling, for root development and getting that seedling out of the ground as quickly as possible.

Calculating a Seeding Rate

The following table represents the changes in the recommended seeding rate using a target of 9 plants per square foot using a 1000K weight of 3.4541 grams. 9 plants per square foot is in the middle of the recommended range.

Seeding Rate lbs/acre	Survivability Rate %
8.5	35
7.5	40
6.0	50
5.0	60
4.6	65

When we change the 1000K weight to 4.6 grams we see the numbers change accordingly:

11.3	35
9.9	40
7.9	50
6.6	60
6.1	65

Both kernel weights used in these examples are actual kernel weights used from existing inventory that will be sold this spring. From the examples you can see that there are some major assumptions that must be made that can drastically change the seeding rate. The survivability rate and the target of plants per square foot are 2 parts of this calculation that are basically guesses and they can both change the seeding rate substantially.

THESE DECISIONS MUST BE MADE BY YOUR CUSTOMER. Our job is to give the best information available to our customers so they can make informed decisions. If we start to make recommendations we are making these assumptions for our customers and for obvious reasons we do not want to go there.

And once again – Only use 1000 kernel weight calculations when the customer asks specifically about 1000K weights.