



# Variable Rate Seeding

by Dale Cowan, CCA

Everybody is varying the population of seed corn. You just may not realize that you are, and not likely appreciating the random nature of the practice. The summary of 1700 plant population checks last season in selected fields at VT (tassel) stage of growth, revealed 32,000 plants per acre average with a coefficient of variation (CV) 15 percent. That variation resulted in a range of population of 4,800 plants per acre or 27,200 to 36,800 plants per acre variance in final stands in field.

If we assume a current seed cost of \$3.00 per 1,000 seeds, that results in a range of seed cost per acre of \$81.60 to \$110.40 or \$28.80 an acre spread. The question is, how do your final stands compare? What if anything can we do about the range and narrow the seed cost variability?

The enabling technology of high resolution GPS, such as RTK, combined with the process controls on corn planters that can measure seed drop parameters, spacing, singulation and automatic row shut off are offering the opportunity for real time feedback. Planting is the most critical aspect of crop production. Having immediate feedback on performance is essential. One of the features of this technology is the ability to read a prescription map to apply seed at variable rates to match predetermined criteria in a management zone.

## Before we proceed with this technology on variable seeding, some critical thinking and set up needs to be undertaken:

- 1) What is the present experience in my fields;
- 2) What is the final stand;
- 3) How variable is it;
- 4) Why is that occurring;
- 5) Is it occurring randomly or associated with a feature in the field;
- 6) What is the optimum population in my fields;
- 7) Can I use my yield monitor, to record and find captured data;
- 8) How variable is my yield is it related to plant population;
- 9) Have I optimized my present system;
- 10) Am I willing to set up learning opportunities;

## Before you embark on deliberate variable rate seeding, do you know the extent and range of the present condition?

Can you improve on that? Implementing a predetermined variable rate population on top of a randomly distributed situation without first optimizing what you have, will likely lead to more confusion. Choosing management zones without fully understanding the attributes that cause fluctuating population will again confound the final results. Taking the time to implement side by side fixed rate populations for direct comparison serves to uncover the optimum rates. Remember, if you are not changing seeding rates by more than your CV (i.e. 4,800 seeds) you are not improving anything.

Paying attention to secondary tillage and seedbed preparation and how that impacts on plant stand throughout the field may be one of many considerations needed for interpretation.

There is no doubt about the impact on the final stand with the "real time" process control technology. The impact of automatic row shut offs on fields with a great deal of gore is offering immediate seed savings of \$8 to \$10 per acre just by eliminating double planting on headlands.

Implementing variable population requires careful thought. The temptation to cut back on poor producing areas, although intuitive, may actually be the wrong thing to do.

## Take the time to set up and learn the optimum seeding rates first then use the precision ag technologies with the added benefit of your knowledge on your fields.



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This industry driven program helps ensure that Ontario crop producers are well served by those providing their crop production advice. This article was written by one of those CCA's.