





Variable Rate Seeding Based on Hybrid Population Ratings – Corn

Note: the information in this document is a build on the Tip Sheet “Using Population Ratings – Corn.” See that Tip Sheet for additional information on Rob-See-Co population ratings.

Rob-See-Co and Innotech Brand¹ corn hybrids are rated for their response to seeding rate. Ratings are based on a combination of how the hybrid performs relative to itself over a range of seeding rates in population density trials, and also on how it performs relative to other hybrids in yield trials planted at different seeding rates. Yield response to population rating symbols and their interpretation are shown in Table 1.

Table 1. Yield Response by Population Rating Symbols and Interpretation

Rating Symbol	Interpretation of Yield Response by Population
	Greatest opportunity to maximize performance relative to other hybrids in maturity group
	Performs very well compared to other hybrids in maturity group
	Performance is average relative to other hybrids in maturity group
	Performance is below desired levels relative to other hybrids in maturity group

To determine the optimal seeding rate for any given field, these ratings are then applied to five seeding rate categories: well below normal, below normal, normal, above normal, and well above normal, with normal being the seeding rate expected to be optimal in the field for which the hybrid is being selected. Table 2 shows the optimal seeding rate (seeding rate producing the greatest economic return) by yield environment at a constant seed cost and four commodity values for corn, ranging from \$3.00 to \$4.50/Bushel. These seeding rates are based on the long-term population response database Rob-See-Co uses to rate hybrids, and become the “normal” seeding rate for a field falling into each yield level at a given commodity value.

Table 2. Influence of Yield Environment and Commodity Value (\$/Bu) on Optimal Seeding Rate

Optimal Seeding Rate at Commodity Value (\$/Bu)	Yield Environment (Bu/A)				
	100	140	180	220	260
\$3.00/Bu	14,300	21,300	27,600	30,200	33,500
\$3.50/Bu	15,200	22,500	28,800	31,800	35,200
\$4.00/Bu	16,000	24,000	29,500	33,000	36,000
\$4.50/Bu	17,500	25,100	30,400	33,500	36,600

With the optimal, or “Normal,” seeding rate established, the above and below normal ratings can be used to understand how a hybrid will perform if population is varied up or down from that optimal seeding rate.

¹ Innotech is a Syngenta Brand distributed by Rob-See-Co

Using the Populations Ratings in Variable Rate Seeding Decisions

The population ratings are also a great way to identify how one might variable rate plant a field that has widely different yield zones. As an example, Figure 1 shows a hypothetical field composed of three, distinctly different yield zones. The optimal seeding rate based on yield history (from Table 2) is shown in each yield zone. See Table 3 for suggestions on how to apply the population ratings to the yield zones in this field.

Figure 1. Field with different yield zones

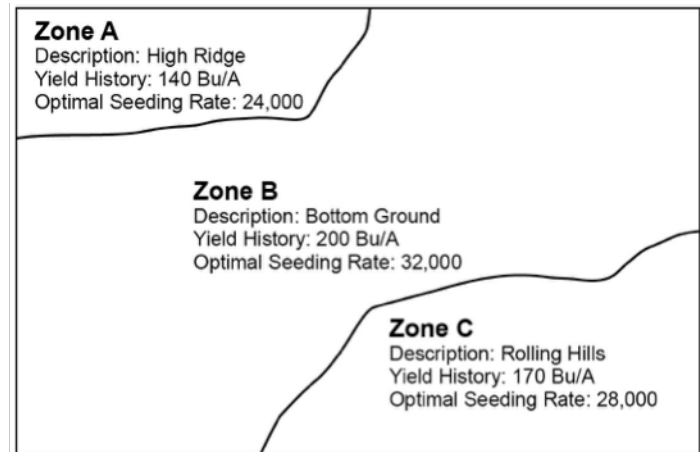

























Table 3. Interpretation of Yield Response by Population Ratings and Suggested Seeding Rates for Variable Rate Seeding based on the Yield Zones Shown in Figure 1

Yield Response by Population Rating*					Interpretation of Yield Response by Population Rating	Suggested Seeding Rate for Yield Zone		
Well Below Normal	Below Normal	Normal	Above Normal	Well Above Normal		A	B	C
-				-		Versatile in a range of +/- 2-3,000 seeds/acre around normal seeding rate; excels at higher densities	26,000	34,000
					Best performance at normal and higher seeding rates; avoid lower plant densities	24,000	34,000	30,000
					Versatile in a range of +/- 2-3,000 seeds/acre around normal seeding rate; prefers moderate to slightly lower densities	23,000	31,000	27,000
					Versatile in a range of +/- 2-3,000 seeds/acre around normal; avoid really low and really high plant densities	24,000	32,000	28,000
					Best performance at below normal and normal seeding rates; avoid higher plant densities	22,000	30,000	26,000

* Example Yield Response by Population Ratings. See Rob-See-Co Seed Guide or Hybrid Tech Sheet for Yield Response by Population Ratings for specific hybrids.