Corn Population Management Guide

Syngenta is committed to sharing agronomic knowledge with our customers to help them grow more corn. Syngenta Agronomy Research provides ratings on the relative hybrid response to population. This study aids understanding of how yield environment, grain price, seed cost and hybrid population response influence seeding rate recommendations. Information from this study is useful in estimating the optimum planting population for each NK® hybrid and field.

Population Response Factors

- **Yield environment**
  Optimum seeding rate increases as the overall field yield potential increases. Higher yield environments demonstrate more yield response from adjusting seeding rates (see Chart 1).

- **Hybrid response**
  Yield response to varying seeding rates above or below the optimum differs considerably among hybrids. Syngenta Agronomy Research provides seeding rate response scores for most key hybrids (see Chart 3, Hybrid Seeding Rate Adjustment Chart on reverse).

- **Economic factors**
  The optimum seeding rate for maximizing return is always lower than the optimum seeding rate for highest yield. The optimum economic seeding rate increases as commodity price increases; seed cost influences seeding rate much less. Table 2 compares several seeding rates and commodity prices in various yield environments.

Estimating Optimum Seeding Rates for Your Farm

- **Use Table 2 to estimate the optimum seeding rate for your field’s yield potential and projected grain pricing. Example: A 200 Bu/A yield environment and $4.00/Bu grain price = 32,300 seeds/A optimum seeding rate.**

- **When estimating yield environment, consider the proven historical yield of the field across multiple years. Seeding rates based on anticipated disasters will result in revenue loss for all normal years. Utilize the chart on the reverse to fine-tune this optimum seeding rate to match the performance of individual hybrids.**
Estimating the Optimum Rate for a Hybrid

1) Use Table 2 to estimate the optimum seeding rate based on yield environment and commodity price.
2) Adjust seeding rate up or down from optimum for the specific hybrid based on ratings in Hybrid Seeding Rate Adjustment Chart below.
3) Root and stalk strength scores listed next to seeding rate suggestions can be used to help determine if the hybrid will have suitable agronomic characteristics for increasing seeding rates (lower scores indicate more suitable).

Hybrid Example

If NK0624 was selected for planting in a field with a proven yield history of 200 Bu/A, and $4 per bushel is the anticipated marketing price, the seeding rate adjustment would be calculated as follows:
1) The seeding rate yielding the highest return per acre for 200 Bu/A environments and $4/bushel commodity price = 32,300 seeds/A (from Table 2)
2) NK0624 performs best at a range from optimum to 10% above the optimum seeding rate for the environment (Chart 3)
3) 32,300 seeds/A x 10% = potential to increase by up to 3,230 seeds/A; 32,300 seeds/A + 3,230 seeds/A = 35,530 seeds/A
4) The ideal seeding rate range for NK0624 in this environment is 32,300 seeds/A to 35,530 seeds/A
5) An average root strength score should be taken into consideration prior to increasing seeding rates, although a good stalk strength score lessens concerns with late season stalk lodging due to high seeding rates

Other ways to utilize ratings:
- Create variable rate planting maps based on historical yield maps and hybrid ratings.
- Evaluate yield potential of certain hybrids with reduced stands when considering replanting a field. For example, it may be more profitable to retain a stand that is reduced by 20% when considering the hybrid rating and the yield potential at the calendar date.