

UTILIZING SPLIT FERTILIZER APPLICATION AS A NITROGEN MANAGEMENT TOOL



As input costs remain high and weather variability continues to challenge Prairie growers, more Saskatchewan cereal and oilseed producers are looking for ways to improve nutrient efficiency without sacrificing yield. Split application of nitrogen is a practice that involves applying a portion of total applied nitrogen (N) at seeding but also withholding a portion to apply in-season based on yield and/or quality goals while implement 4R nutrient stewardship strategies – Right Source, Right Rate, Right Time and Right Place.

Canola has a high demand for nitrogen, but its uptake isn't uniform throughout the season. In canola, the maximum rates of nitrogen uptake occur from the 5-leaf stage to full bloom. When top dressing, the ideal stage to apply the top up nitrogen is the 4-6- leaf stage. Applying all fertilizer upfront can result in losses through volatilization, leaching, or denitrification—especially in wet or variable soil conditions common across the province. For cereal crops such as wheat, split fertilizer applications balance producer goals for yield and protein targets. Early nitrogen applications usually yielded more while later applications usually resulted in higher grain protein.

The rates for a split application used will vary from farm to farm, depending on practices, yield and quality goals. Accurate and uniform application of in-crop nitrogen applications is the key to success. How the in-season nitrogen is applied will depend on what equipment is available and what form of nitrogen is being applied. Broadcasting urea or dribble banding UAN are the most

common and fastest application methods. Dribble banding aids in minimizing leaf burn and volatilization compared to a foliar application with a fan nozzle. Top dressing a granular product with a floater before a rain or irrigation water application is also a common practice in Saskatchewan.

Split application aligns nutrient availability more closely with crop demand. By applying a base rate at seeding and top-dressing later in the season, growers can improve nitrogen use efficiency and ensure nutrients are available when plants need them most. This can translate into stronger biomass development, improved pod set, and ultimately higher yields.

From a risk management perspective, split application offers flexibility. Growers can adjust in-season fertilizer rates based on rainfall, crop vigor, and yield potential, rather than committing all inputs early. While split fertilizer application may require additional planning or equipment, many Saskatchewan producers are finding that the yield stability, nutrient efficiency, and environmental benefits make it a worthwhile investment in today's production landscape.

The adoption of split fertilization application is eligible for support through SAW's SWEAP (Saskatchewan Watersheds Environmental Agriculture Program) Nitrogen Management Beneficial Management Practice program. Funding for SWEAP is provided by Agriculture and Agri-Food Canada through the Agriculture Climate Solutions – On-Farm Climate Action Fund (OFCAF).