

Maximize winter wheat yield and nitrogen fertilizer efficiency

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Winter wheat seeding is underway across Montana and high wheat prices are encouraging producers to maximize their yields, says the Montana State University Extension soil fertility specialist.

Nitrogen is the nutrient that most often limits wheat yields and represents a grower's largest fertilizer cost input. "Optimizing nitrogen availability should maximize yield and use fertilizer nitrogen more efficiently," adds Clain Jones of MSU's Department of Land Resources and Environmental Sciences.

"Band applications of nitrogen are favored over surface broadcast applications due to increased root access, particularly in dry soil conditions," said Jones. Broadcast nitrogen applications can lower root zone nitrogen availability under dry soil conditions, reducing fertilizer nitrogen uptake and yield.

Spring nitrogen applications can result in greater yield than nitrogen applications at seeding, freeze-up, or on snow, due to more chance for nitrogen losses from fall and winter applications. However, fall and spring nitrogen banding have resulted in similar winter wheat yields. Early spring nitrogen applications generally result in higher winter wheat yields than late spring applications.

Split applications generally do not increase yield. Jones added, "Unless combined with other field operations, additional nitrogen applications increase overall application costs."

With near record fertilizer nitrogen prices and winter wheat prices, optimizing nitrogen fertilizer use is more important than ever for maximizing profit.

Summaries of winter wheat and nitrogen studies may be found at <http://landresources.montana.edu/fertilizerfacts> (#4, 26 and # 41). Contact your local MSU Extension agent (<http://extn.msu.montana.edu/localoffices.asp>) or crop adviser for help with specific fertilizer decisions.