

10 years of reduced versus enhanced rates of N and P fertilizer

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Abstract: An on-farm-test trial was initiated in spring 2013 to evaluate the long term impact of normal fertilization rates of nitrogen (N) and phosphorus (P) (Medium) , versus a 30% reduced rate (Low) and a 30% increased rate (High). These rates have been applied in a randomized complete block design with 4 replicates running the full length of the field, with the individual treatments applied to the same strips each year. All fertilizer was side-banded with a zero till Seed Hawk air drill on 12" spacing. Strips were combine harvested and weighted with a grain cart. Since initiation 4 wheat crops, 4 canola crops and one soybean crop were grown.

For the first 3 crops harvested, the fertilizer rates had little yield impact and economics favoured the Low rate system. However in 5 of the last 6 years, fertilizer rate has impacted yields with Low rate < Medium rate < High rate. The exception being a year of soybean when there was no yield response to fertilizer. The Low and Medium rates have not met the nutrient removals in grain. Crop economics and nutrient additions and removals will be presented, in addition to soil test results after 10 years.