

ESTABLISHING NITROGEN AND SEEDING RATE RECOMMENDATIONS FOR COMPOSITE YELLOW MUSTARD PRODUCTION IN SASKATCHEWAN

Introduction

This Strategic Field Program project evaluated agronomic practices for AAC Yellow 80 and Andante mustard production, including seeding rate and nitrogen fertility recommendations. Trials were conducted across multiple Saskatchewan locations representing different soil zones and environmental conditions to generate regionally relevant recommendations.

Methods

Field trials were conducted using randomized complete block designs with replicated treatments at three sites including the Swift Current, Indian Head and Redvers. The study consisted of two separate trials including both mustard varieties. The nitrogen trial evaluated seven total nitrogen rates (soil residual plus applied urea): 0, 60, 80, 100, 120, 140, and 160 lb N/ac. The seeding rate trial evaluated five target seed rates (with balanced fertility): 108, 150, 194, 237, and 280 seeds/m². Data collection included plant density, plant height, lodging, days to maturity, and seed yield.

Results

Higher seeding rates generally improved mustard competitiveness against weeds and resulted in more uniform stands. However, very high seeding rates did not consistently increase yield and sometimes increased lodging risk. Moderate seeding rates provided the best balance of plant population and yield stability.

Mustard showed moderate nitrogen response depending on soil moisture and residual fertility. Yield increases were observed at low nitrogen levels, but responses plateaued once adequate fertility was reached. Excess nitrogen increased lodging risk without consistent yield benefit.

AAC Yellow 80 consistently demonstrated higher yield potential and nitrogen use efficiency than Andante and average yields of AAC Yellow 80 were consistently and statistically higher than Andante in both nitrogen and seed rate trials. Overall, results indicate that optimal seeding rates for composite yellow mustard may be lower than those currently recommended for the open-pollinated variety, Andante. However, producers should remain cautious and adjust seeding rates to account for expected seedling mortality, flea beetle pressure, and site-specific growing conditions. The final report can be found on wheatlandconservation.ca

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