

MOST POPULAR WHEAT VARIETIES IN THE NORTH PEACE SOWN AT DIFFERENT RATES

Past studies in the Peace Region have demonstrated that higher seeding rates lead to significantly higher yield and test weights in CWRS wheat. However, crops grown at the highest seeding rates (37 seeds foot-2) also had significantly lower protein content. Thus, we wish to evaluate more commonly grown varieties grown in the Peace region such as AAC Viewfield and AAC Brandon. AAC Redberry is not prevalent in the North Peace and Mackenzie regions, however it is early maturing (three days earlier than the AAC Brandon variety) and thus would likely be a good fit. AAC Wheatland VB was selected as it is a new midge tolerant variety with a similar maturity to AAC Brandon, and a slightly higher yield advantage of up to 4 bushels acre-1 (AFSC Yield Alberta 2021).

Research involved data from Fairview, Ballater, Fort Vermilion and North Star. Data from height, test weight, yield, protein, and thousand kernel weight (TKW) were compiled for 2022, 2023 and 2024.

Key Points:

- **Optimal seeding rate for Wheatland is 30 plants/ft2, Redberry is 35 plants/ft2, Brandon and Viewfield yield proportionally to seeding rate**
- **Greater plant density and yield may result in lower grain protein content**

Alberta Grains

Task	Timeline	Details
Seeding	**May 27**	**97-175 lb/ac** **1" depth**
Maintenance	**May 20 - June 20**	**Urea 100 lb/ac** **S15 80 lb/ac** **Glyphosate (pre-seed) 1 L/ac** **Fluroxypur 240 mL/ac** **Clopyralid 84 mL/ac** **MCPA Ester 281 mL/ac**
Harvest	**Sept. 19**	**Straight-cut**

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Generally, plant counts increased with higher seeding rates for all varieties, indicating a positive correlation between seeding rate and plant density. Falher consistently exhibited the lowest coefficients of variation (CVs), suggesting more uniform data, while Manning and Fairview showed higher CVs, indicating greater variability. Fort Vermillion consistently had higher plant counts than the other sites, particularly at higher seeding rates. This was especially evident for AAC Brandon, Redberry, and AAC Viewfield, which achieved counts of 450 plants/m^2 or more at the 40 plants/square foot seeding rate.

In Manning, plant counts displayed greater variability and tended to be lower overall than in Fort Vermillion, with less noticeable differences among seeding rates and varieties. Moderate plant counts were observed at Falher across all varieties, with AAC Brandon and AAC Viewfield showing slightly higher values at increased seeding rates. Fairview generally yielded higher plant counts than Manning and Falher but still lower than Fort Vermillion's. The difference in plant counts among seeding rates was less consistent across varieties at this location. Plant counts increased significantly with higher seeding rates, averaged across all sites. AAC Brandon and AAC Viewfield generally achieved the highest plant densities, especially at 40 plants/foot. AAC Wheatland showed lower overall plant counts compared to other varieties, while AAC Redberry demonstrated intermediate performance.



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Yield exhibited the highest variability at Manning, with a coefficient of variation (CV) ranging from 20.9% to 39.4%, indicating considerable variation in yield at this location. In contrast, Fort Vermillion showed the lowest variability, with CV values of 9.0% to 14.2%, suggesting that yield was more consistent at this location.

Overall, yield was largely unaffected by the seeding rate, except for AAC Brandon at Fairview, where significant differences were observed. Regardless of the seeding rate, the yield was consistently highest at Manning and lowest at Fairview. When averaged across locations, the yield of AAC Reberry increased with seeding rates up to 35 plants per foot, beyond which it declined. In contrast, the grain yield of AAC Wheatland peaked at 30 plants per foot. There was no clear trend in yield response to increasing seeding rates for AAC Brandon and AAC Viewfield.

Protein content exhibited the highest variability at Manning, with a coefficient of variation (CV) ranging from 4.9% to 5.3%. In contrast, Fort Vermillion had the lowest variability (CV = 2.5%–3.1%), suggesting that protein content was most consistent at this location. The protein content was largely unaffected by the seeding rate, except for AAC Redberry at Fort Vermillion and AAC Wheatland at Manning, where differences among seeding rates were observed. Regardless of the seeding rate, protein content was consistently lowest at Manning compared to the other three locations across all four varieties. Across all varieties and seeding rates, the protein content followed the trend of Fort Vermillion > Fairview > Falher > Manning.