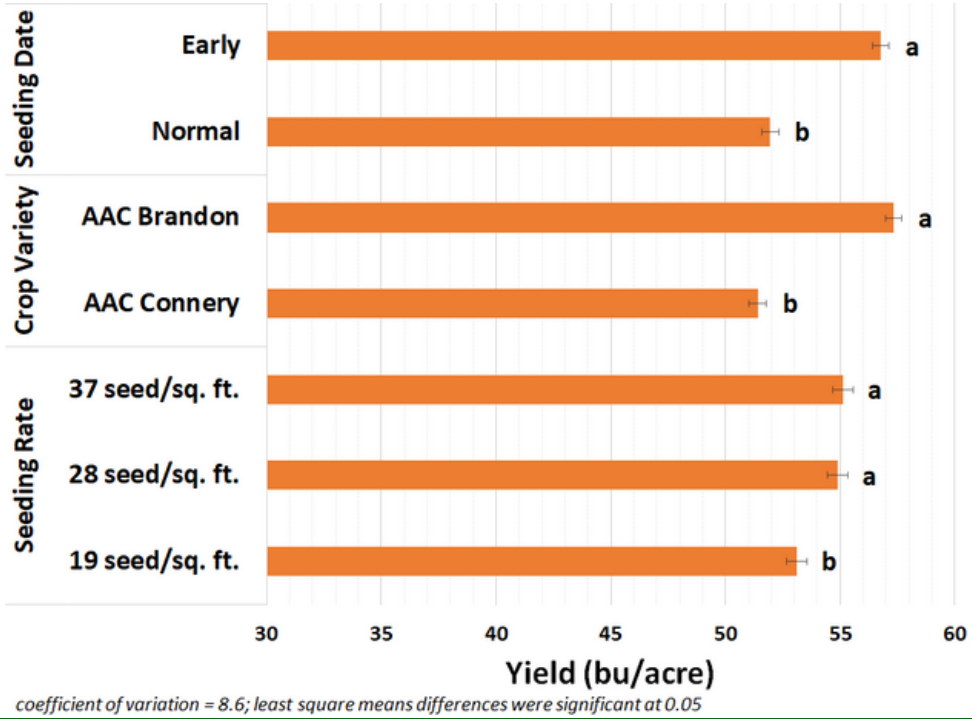
ULTRA EARLY SEEDING OF SPRING WHEAT RESULTS – 2020

Overview: Seeding early has the potential to increase yield, improve grain quality, and result in earlier maturity. Early seeding may allow wheat to avoid/miss the damage caused by wheat midge and Fusarium head blight; be better suited to defend against weed competition, allowing for less pesticide usage; and be harvested earlier and at a higher grade due to the reduced risk of late season frost events and damp weather at harvest.

Performed across seven sites throughout Alberta, the ultra-early wheat trial was designed to assess whether there is an advantage to seeding spring wheat ahead of schedule. By seeding wheat early when soil temperatures range 2-6 Celsius, rather than the norm of 10-12 Celsius, might yield increase? Further, are test weight and protein values at all affected? On two dates, early and normal (where normal refers to when local farmers seed their wheat); two varieties of wheat, AAC Brandon and AAC Connery, were sown at rates of 19, 28, and 37 seed/sq. ft., respectively. This experiment compares wheat growth subject to three levels of differentiation: date planted, crop variety, and seeding rate. The experiment followed a complete randomized block design having treatments replicated four times.

The following results are representative of data accumulated across all the sites in Alberta. Those were: North Peace Applied Research Association, Mackenzie Applied Research Association, Lakeland Agricultural Research Association, Smoky Applied Research and Demonstration Association, Chinook Applied Research Association, Battle River Research Group, and Gateway Research Organization).

Conclusion: An early seeding date led to a higher yield ($P<0.0001$) and lower protein content ($P<0.0001$) versus the later, normal date. AAC Brandon produced a higher yield ($P<0.0001$) and higher test weight ($P=0.0032$) than AAC Connery, whereas AAC Connery achieved a higher protein content ($P<0.0001$). Finally, seeding at the two higher rates led to significantly greater yield ($P=0.0022$) and test weight values ($P<0.0001$). Seeding at 19 and 28 seed/sq. ft. resulted in higher protein content ($P=0.035$). With multiple sites contributing data, this experiment was robust and precise.



coefficient of variation = 8.6; least square means differences were significant at 0.05

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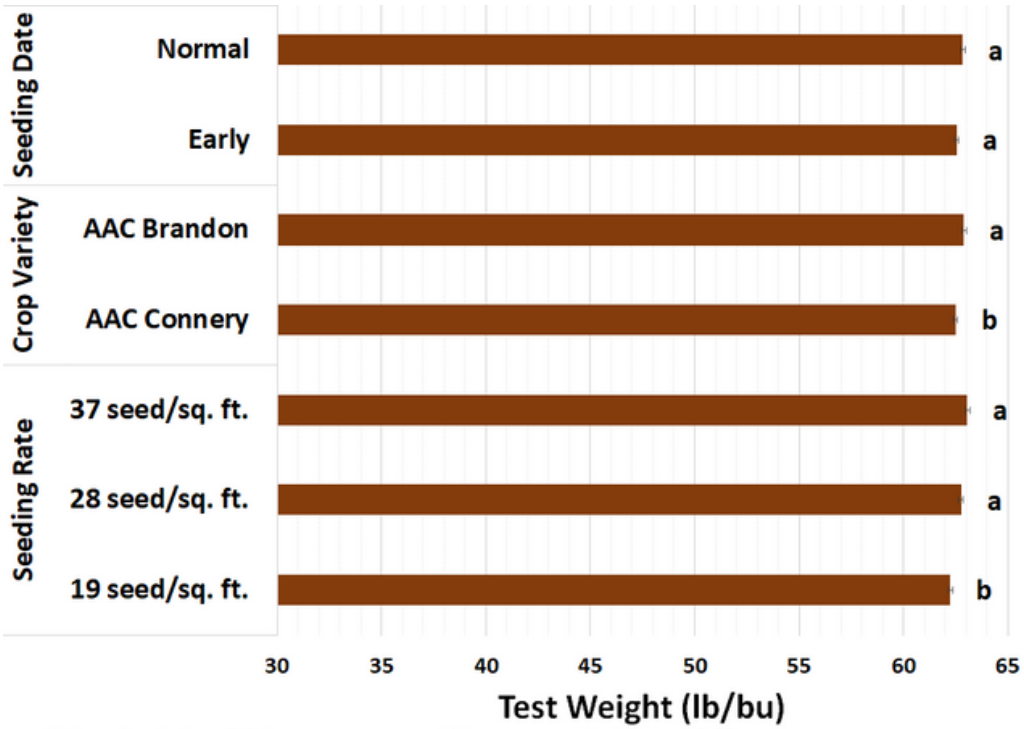
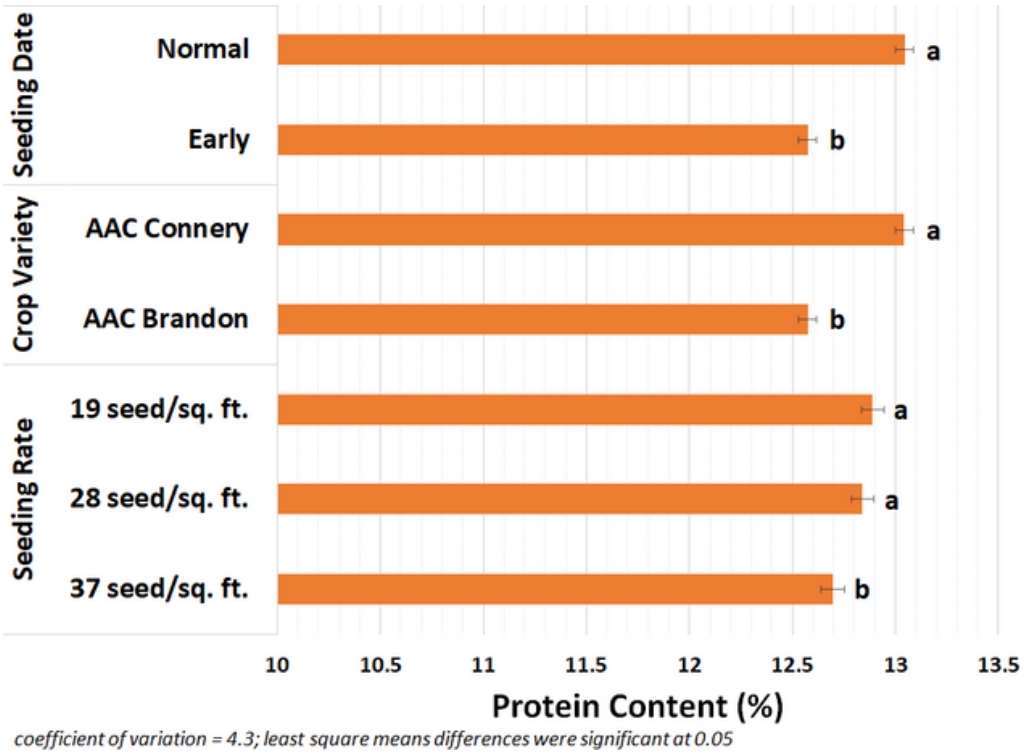


coefficient of variation = 2.0; least square means differences were significant at 0.05



coefficient of variation = 4.3; least square means differences were significant at 0.05

Seeding Date: May 12 (Early) and May 18 (Normal); **Seeding Depth:** 1-1.5 in.;
Seeding Rate: variable plants/sq. ft.; **Harvest Date:** Sep. 28
Applications: May 7: 46-0-0-0 - 120 lb/ac; May 12: 13-33-0-15S - 120 lb/ac; May 13: Glyphosate - 0.66 L/ac, Heat - 0.059 L/ac, and Merge - 0.2 L/ac; Jun. 5: Prestige A - 0.32 L/ac and Prestige B - 0.81 L/ac; Jul. 14: G22 - 3 L/ac, F18 - 0.5 L/ac, Microbolt (B) - 0.25 L/ac, and Microbolt (Mo) - 14 g/ac