

Malt vs. Feed Barley: Factsheet



Objective:

- To demonstrate that newer malt varieties can provide comparable yields to the best feed varieties
- To demonstrate the importance of adequate plant populations for yield and malt acceptance
- To demonstrate the differences in nitrogen (N) management for malt vs. feed barley varieties

Methodology:

The trial was established in the spring of 2019 at 8 sites across Saskatchewan (Yorkton, Redvers, Indian Head, Swift Current, Scott, Outlook, Prince Albert, and Melfort). The first factor compared malt variety AAC Synergy and feed variety CDC Austenson. The second factor evaluated seeding rates of 200 and 300 seeds/m². The third factor examined nitrogen rates of 80, 120, and 160 lbs N/ac (soil & fertilizer). Overall resulting in 12 different treatments.

Key Findings:

- The yield difference between the malt variety AAC Synergy and feed variety CDC Austenson did vary between locations. However, when averaged across location, there was little yield difference (0.16%) between the varieties.
- The bushel weight of CDC Austenson was significantly higher than AAC Synergy. When averaged over location, the bushel weights for AAC Synergy and CDC Austenson were 48.7 lb/W bu (314 g/0.5l) and 50.4 lb/W bu (325 g/0.5l), respectively. For feed barley bushel weight should be above 48 lb/W bu.
- Increasing seeding rate significantly increased plant emergence at all locations, but did not increase yield, decrease protein or improve any quality factors for malt barley.
- Increasing rates of N did increase protein and tended to decrease % plump. On average, N levels of 80, 120 and 160 lb/ac resulted in grain proteins of 11.8, 12.6, and 13.1 percent, respectively. Furthermore, there was a trend for % plumps to decrease from 91.8 to 90.2% as N rates were increased from 80 to 160 lb N/ac.
- The most economic level of N for Scott was 155 lb/ac for malt (AAC Synergy) and 123 lb/ac for feed (CDC Austenson).
- At Melfort, the most economic rate of N for feed was 116 lb/ac, while the most economic rate for malt was questionable as the response curve was linear, meaning that the rate of return was the same for every pound of added N, which is not likely.
- At Yorkton, rates of N tested did not go high enough to determine the most economic rate for either variety, meaning the economic rate of N was above 160 lbs/ac.
- At Swift Current, Prince Albert, and Outlook, even the lowest rate of N (80 lbs/ac) produced protein levels above 12.5%, which is not acceptable for malt. Furthermore, these sites along with Indian Head and Redvers showed yields for both malt and feed were unresponsive to increasing levels of N. Thus, indicating the most economic level of N at Swift Current, Prince Albert, Outlook, Indian Head and Redvers was somewhere below 80 lb/ac for both AAC Synergy (malt) and CDC Austenson (feed).

The full report is available at: www.warc.ca. This project was funded through the Agricultural Demonstration of Practices and Technologies (ADOPT) and the Saskatchewan Barley Development Commission.