

Merit 57



Merit 57 is one of the best malting and brewing varieties developed by ABInBev. This variety provides good yield and resistance to net blotch form, and is well suited to the irrigated, temperate region of Northern Montana.

The following agronomic, yield and quality, pathology and botanical information on ABI Voyager is based on the best available data (Global Barley Research, SmartBarley, and University of Idaho). It is up to each farmer to interpret the validity of the contained information, and assess how it relates to their own barley growing operations.

Maturity: Merit 57 has a later maturity of approximately 125 days, and reaches maturity typically 5-10 days after ABI Voyager. Heading date typically occurs around June 28th [1].

Irrigation Scheduling: Field capacity must be maintained throughout season for optimum yield. Merit 57 requires more irrigations than ABI Voyager, especially near grain-fill due to later maturity and genetically thinner grain. Maintain field capacity to soft dough.

Drought Sensitivity: Merit 57 yields 5% less beneath ABI Voyager in water stress trials, while thinner kernels make it more difficult to maintain malting quality under water stress.

Lodging and Straw Length: Merit 57 has 50% more lodging events compared to ABI Voyager, and requires plant growth regulators to reduce lodging. Merit 57 averages 33 inches tall.

Nitrogen application – Yield: Malting barley yield targets in Montana use 1.2 lb N/bu ratio as a means of estimating nitrogen usage. If for example your yield target is 100 bu, then you would apply 1.2 times your target in nitrogen (lbs/ac), or $1.2 \text{ N} \times 100 \text{ bu} = 120 \text{ N lb/ac}$. To reduce costs and avoid over application of nitrogen, it is critical to conduct a soil test to properly estimate applied nitrogen. Applied nitrogen should account for the amount of residual nitrogen in the field prior to planting. The second page of this crop protocol contains a table and example calculation to adjust applied nitrogen to residual nitrogen in the soil.

Phosphorus and Potassium: Phosphorus and potassium are best applied at seeding or prior to seeding. Banding of phosphorus is more effective than banding nitrogen because phosphorus is less mobile in the soil (slides). Fertilization of 30 lbs $\text{K}_2\text{O/ac}$ generally recommended for malt barley every season.

Seeding Rate: The recommended minimum seeding rate for Merit 57 is 1,000,000 seeds/ac. If planting late, this rate should be increased. Since kernel weights will vary by source and year, seeding rate should be based on kernel count. Crop management trial data showed that increasing the seeding rate, decreased protein. For every 100,000 seeds/ac increase, there was a 0.3% decrease in protein.

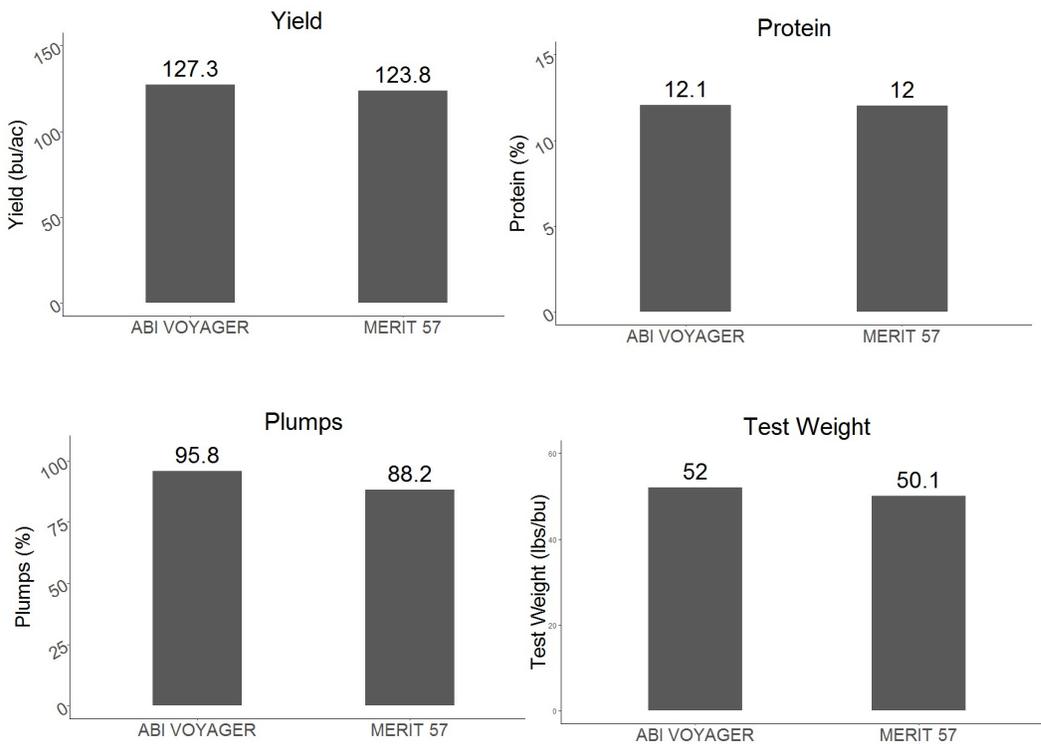
Crop Rotation and Nitrogen Interaction: Farmers need to consult their soil tests prior to nitrogen application because certain rotations leave more or less residual nitrogen which will impact crop yields. There are examples of farmers that had their yield penalized from additional nitrogen when their crop rotation prior to barley was alfalfa, potatoes or corn. Too high levels of total nitrogen have the potential to not only reduce yield, but push barley out of protein specification.

Merit 57



- Good yield potential
- Slightly Later Maturing
- Low Protein
- Resistance to Net Blotch

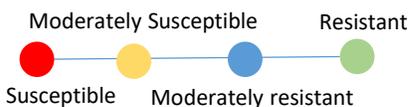
Data from Fairfield Research Plots



ABInBev Researcher's notes on

ABI Voyager: "Merit 57 is the highest malting quality barley developed by ABInBev to date. However, Merit 57 is more agronomically challenging malting barley to produce requiring greater attention than ABI Voyager. Merit 57's late maturity date, long straw length, thinner kernels, and propensity to lodge require increased management. The use of plant growth regulators are required to reduce lodging. However, yield potential of Merit 57 when optimally managed is quite high."

Disease	Resistance Rating
Spot blotch	● (Yellow)
Net blotch net form	● (Blue)
Net blotch spot form	● (Blue)
Fusarium head blight	● (Red)
Pre harvest sprout	● (Red)



Phosphorus Recommendations

Olsen P Test Level (ppm)	P Fertilizer Rate (lbs P ₂ O ₅ /ac)
0	50
4	40
8	30
12	20
16	10

Based on your soil test's phosphorus levels (left column), meet your barley's phosphorus requirements by applying appropriate value (right column)

Nitrogen Recommendations

Yield Target (bu/ac)	Total N (lbs/ac)
80	96
90	108
100	120
110	132
120	144
130	156

Based on your yield (left column), ensure that the crop's total nitrogen needs are met (right column). **Total nitrogen = Applied nitrogen + nitrogen in your soil test.**

Example of Equation to Estimate Applied Nitrogen using a Soil test: Yield target = 120 bu/ac. Nitrogen in soil from test = 20 lbs N/ac. Fertilizer to be Applied N = 144 lbs N/ac – 20 lbs N/ac = 124 lbs N/ac.