

ND Genesis (2ND25276) Two-Rowed Barley

Information provided by Dr. Richard Horsley – NDSU Barley Breeder

Description:

Grow Habit: Spring
Spike Type: Two-rowed, lax
Awn Type: Semi-Smooth
Rachilla hairs: Long
Aleurone color: White

Agronomics:

Based on eight years (105 station years) of the barley breeding program's yield trials across North Dakota, ND Genesis has about a 5% yield advantage over Pinnacle. The average yield advantage is over 8% in eastern North Dakota and nearly 3% in western North Dakota. ND Genesis is slightly taller than Pinnacle, Lacey, and Conlon. The heading date of ND Genesis is similar to Pinnacle and four days later than Conlon. Resistance to lodging is superior to that of Conlon, slightly superior to Lacey and slightly weaker than that of Pinnacle. The test weight of ND Genesis is similar to that of Pinnacle. At this point, no concerns have been raised on the itch of ND Genesis. In general, two-rowed barley varieties itch less than six-rowed because they thresh differently. Not enough data has been collected to establish the pre-harvest sprouting resistance of ND Genesis. Greenhouse dormancy tests are again being conducted this winter.

Disease Resistance

ND Genesis is classified as MR-R to the net form of net blotch, MR to the spot form of net blotch, and MR to spot blotch based on greenhouse seedling evaluations. Based on these classifications, ND Genesis has better resistance to the net form and spot form of net blotch than Pinnacle, and similar resistance to spot blotch as Pinnacle. Compared to Tradition, ND Genesis has better resistance to the net form and spot form of net blotch. ND Genesis accumulates around 20% less deoxynivalenol (DON) than Pinnacle, 23% less than Lacey, but 33% more than Conlon.

Adaption and Probable Production Area:

The improved foliar disease resistance and yield potential of ND Genesis as compared to Pinnacle make it a possible replacement for Pinnacle if it is added to the AMBA list of recommended malting barley varieties. ND Genesis seems adapted to all parts of North Dakota and adjacent areas of Minnesota, Montana and South Dakota. It's large kernel and low grain protein traits may be helpful when growing malting barley in environments where moisture stress develops after heading.

Unique properties of ND Genesis:

- May be suitable for malting as grown in North Dakota and adjacent states
- High grain yields
- Large, plump kernels and some drought tolerance
- Better resistance to the net and spot forms of net blotch than Pinnacle
- Accumulates less DON than Pinnacle
- Low grain protein
- Good malt extract values
- Lower beta-glucan values than Pinnacle

ND Genesis (2ND25276) Variety Data

Langdon Research Extension Center

Yield (bu/a)

Variety	2011	2012	2013	2014	Mean
Two Row					
ND Genesis	113.8	92.9	173.7	127.7	127.0
Pinnacle	115.2	90.8	179.5	138.0	130.9
Conlon	98.6	82.8	138.2	125.8	111.4
Six Row					
Lacey	109.6	96.5	163.7	133.7	125.9
Tradition	114.0	69.3	162.7	133.4	119.9
Stellar-ND	115.5	94.0	158.9	124.5	123.2
Celebration	107.6	79.9	165.1	143.8	124.1
Quest	107.6	94.1	162.9	129.5	123.5
Innovation	116.8	91.1	160.0	138.3	126.6

Test Weight (lbs/bu)

Variety	2011	2012	2013	2014	Mean
Two Row					
ND Genesis	49.4	48.1	51.3	52.6	50.4
Pinnacle	51.1	49.7	53.1	53.9	52.0
Conlon	51.6	49.3	52.5	52.4	51.5
Six Row					
Lacey	49.6	48.5	50.9	52.1	50.3
Tradition	49.3	47.0	50.9	51.9	49.8
Stellar-ND	48.6	48.4	50.0	50.9	49.5
Celebration	49.3	47.0	50.3	51.9	49.6
Quest	48.7	48.2	49.3	50.3	49.1
Innovation	48.7	47.4	50.2	51.8	49.5

Days to Head

Variety	2011	2012	2013	2014	Mean
Two Row					
ND Genesis	51.8	61.9	55.9	53.5	55.8
Pinnacle	53.5	62.3	55.0	52.7	55.9
Conlon	49.3	57.2	50.3	48.0	51.2
Six Row					
Lacey	51.3	60.6	52.2	52.1	54.1
Tradition	52.5	63.6	51.5	51.6	54.8
Stellar-ND	51.3	62.9	52.6	51.9	54.7
Celebration	54.0	64.9	52.9	52.8	56.2
Quest	52.0	61.6	54.0	51.9	54.9
Innovation	50.8	60.8	51.8	50.4	53.5

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Plant Height (in)

Variety	2011	2012	2013	2014	Mean
Two Row					
ND Genesis	33.0	32.3	31.7	31.8	32.2
Pinnacle	34.8	34.7	31.2	32.7	33.4
Conlon	33.5	35.3	29.5	29.9	32.1
Six Row					
Lacey	36.1	36.7	28.1	32.7	33.4
Tradition	35.7	33.6	29.4	32.5	32.8
Stellar-ND	34.1	35.0	28.7	32.5	32.6
Celebration	35.0	33.8	28.3	33.0	32.5
Quest	37.8	37.3	30.7	33.8	34.9
Innovation	32.9	36.8	26.4	32.2	32.1

Plump (%)

Variety	2011	2012	2013	2014	Mean
Two Row					
ND Genesis	96.0	89.6	98.3	97.7	95.4
Pinnacle	95.0	90.5	98.2	98.1	95.5
Conlon	97.0	91.8	98.7	99.0	96.6
Six Row					
Lacey	94.0	85.9	97.9	98.8	94.2
Tradition	92.0	80.7	97.8	98.3	92.2
Stellar-ND	95.0	88.2	98.7	98.5	95.1
Celebration	95.0	85.6	97.8	98.0	94.1
Quest	87.0	76.4	96.2	96.0	88.9
Innovation	92.0	81.0	98.1	99.1	92.6

Protein (%)

Variety	2011	2012	2013	2014	Mean
Two Row					
ND Genesis	10.5	10.7	10.3	11.8	10.8
Pinnacle	12.0	11.7	11.3	11.8	11.7
Conlon	12.7	12.8	11.7	12.4	12.4
Six Row					
Lacey	13.3	12.2	12.5	12.2	12.6
Tradition	12.7	12.2	12.5	12.0	12.4
Stellar-ND	12.4	12.0	12.5	12.3	12.3
Celebration	13.7	13.3	13.6	12.9	13.4
Quest	12.7	12.2	12.2	12.2	12.3
Innovation	12.5	12.8	12.4	13.0	12.7