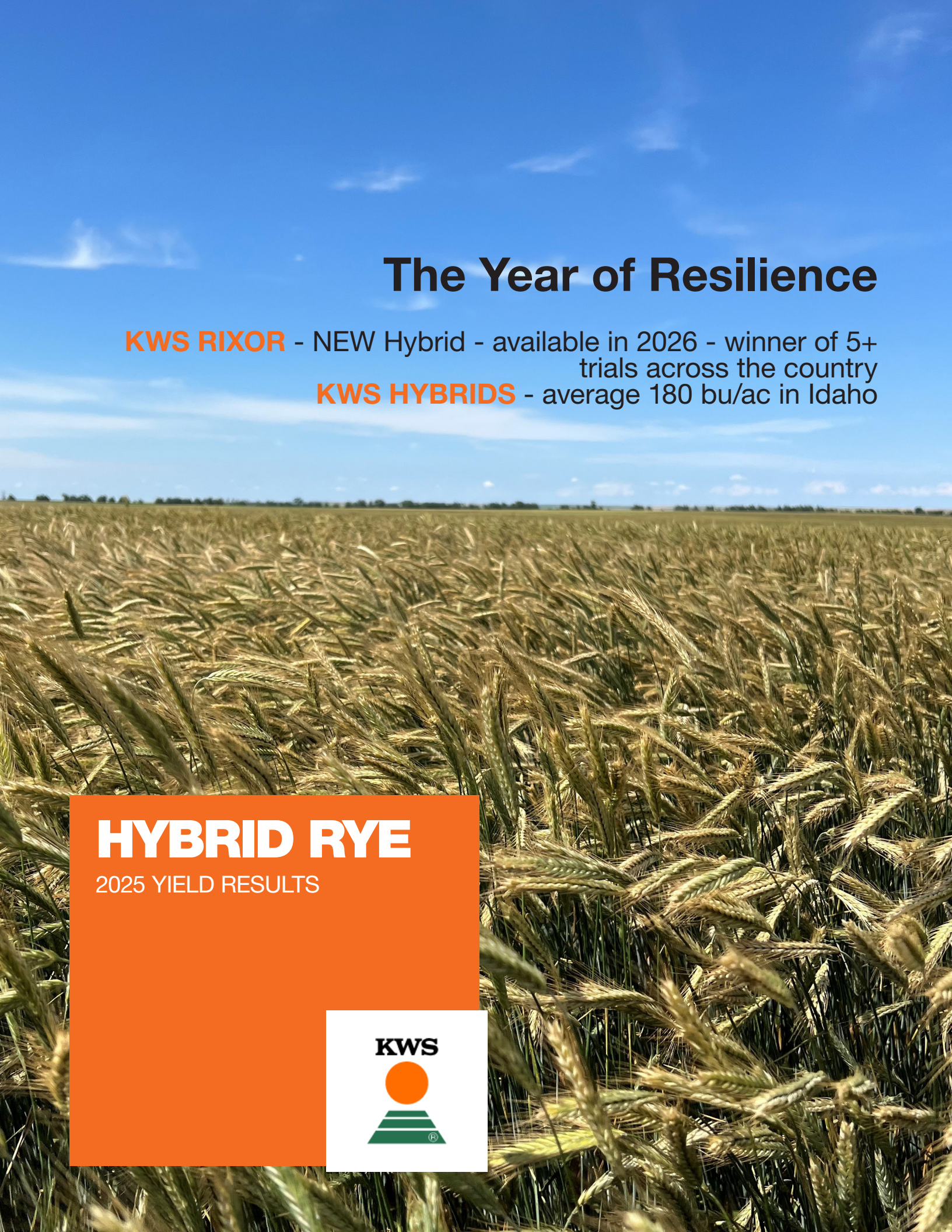


The Year of Resilience

KWS RIXOR - NEW Hybrid - available in 2026 - winner of 5+ trials across the country

KWS HYBRIDS - average 180 bu/ac in Idaho

HYBRID RYE

2025 YIELD RESULTS

KWS

Hybrid Rye - Resilient in the Face of Extremes.

We're excited to share the results of our nationwide trial program, which was conducted in partnership with some of the top universities. These trials spanned over 30 locations, focusing on both forage and grain varieties, to evaluate how Hybrid Rye performs under a wide range of agronomic and climatic conditions.

This season was quite a roller coaster when it came to weather. In the northern Midwest, we had a record-warm and dry fall, which delayed crop establishment. October 2024 turned out to be the second warmest in 130 years, with temperatures up to +9°F above normal and precipitation levels -1.21 inches below average. By late fall, over 45% of the U.S. was experiencing drought, with 73% classified as abnormally dry or worse.

Then came Spring, bringing intense heat across the Midwest and Northeast. It was the second warmest spring on record for the region, with average temperatures +3.2°F above normal. In states like Minnesota and Ohio, temperatures were +4 - 6°F above average, which sped up crop development and stressed the plants during flowering and grain fill.

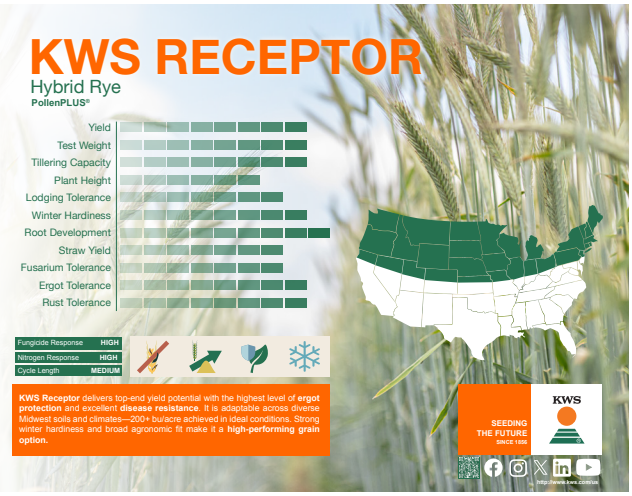
Meanwhile, the eastern U.S. was dealing with excessive rainfall. From April to June, parts of the Ohio Valley and Northeast received up to +10 inches more rain than usual. This led to saturated soils, delayed field operations, and increased disease pressure in several trial locations.

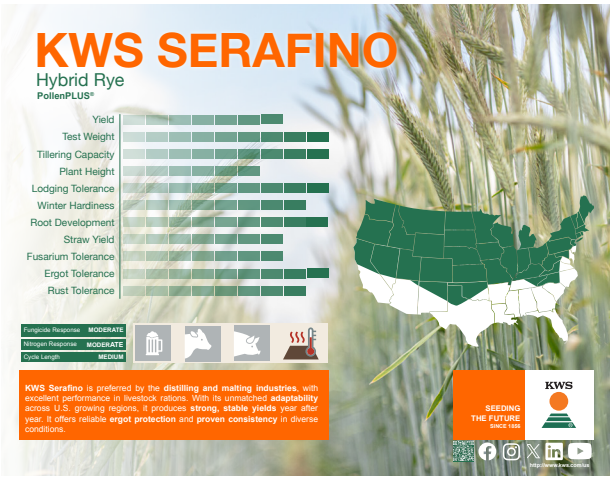
Despite these extreme conditions, Hybrid Rye showed remarkable resilience. In many trials, yields remained strong, and the crop outperformed conventional rye varieties under stress. Of course, some locations did experience setbacks, especially where the drought was most severe, and we've documented these in detail within the report. Despite all these weather issues, trials in Idaho still managed 180 bu/ac at the Kimberly location.

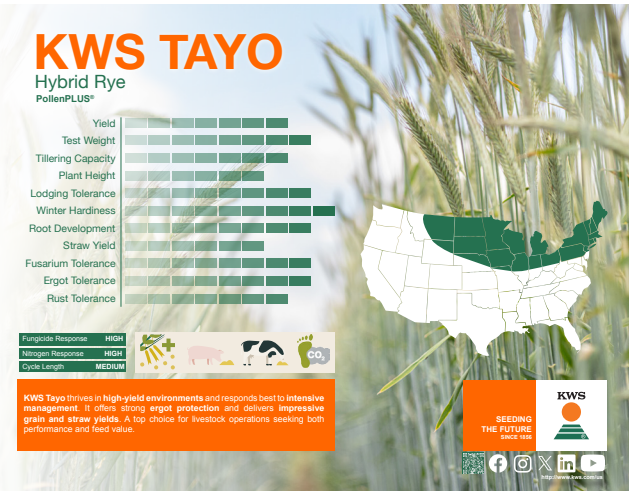
We invite you to dive into the full results, which include agronomic performance and regional insights. Our goal is to provide growers and partners with practical, transparent information to help with decision-making and to expand the role of Hybrid Rye in U.S. agriculture.

Thanks for your continued interest and support! For more information on KWS Hybrid Rye varieties, growing practices, or to find your nearest dealer, please visit our website: www.kws-us.com.

Dener Lazzari, Product Manager







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Grain Results

When it comes to Hybrid Rye grain, our varieties: KWS Receptor, KWS Serafino and KWS Tayo have your back in all situations. We are excited to announce the launch of KWS Rixor to the portfolio and as you can see from trial results, it's coming to make waves.

Trial Highlights:
Colorado, Idaho, Illinois, Iowa, Kentucky, Michigan, Minnesota, Nebraska, New York, North Dakota, Pennsylvania, South Dakota, Washington, Wisconsin

** a - denotes no data and that variety was not planted that year.*

Planting recommendations: Trials were planted at KWS recommended rates of 800,000 seeds/acre. Use the seed rate calculator and seed tag to help with proper seeds per foot of row.

Nitrogen recommendation is 1.2 units of N/bushel. Apply a fall application of approximately 1/3 of your needs, then apply remaining nitrogen as early as you can in spring to ensure that nitrogen is available before stem elongation.

COLORADO

Trial Highlights

Location: Great Plains Research Station at Akron, CO - Colorado State University.
This location is non-irrigated, dry land.
**Please note the wheat trial is in a different trial area, but gives a comparison to wheat yields.*

2025: Akron was planted on September 26, 2024 and harvested on July 10, 2025. Excellent yields in a very uniform trial.

2024: Akron was planted on September 28, 2023 and harvested on July 15, 2024. This location saw excellent yields with adequate rainfall.

2023: Akron was planted in two locations on September 29, 2022 and October 6, 2022. This location had excellent yields and good rainfall.

2023 - 2025 Colorado Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2023	2024	2025
KWS Rixor	Hybrid Rye	-	96.0	109.0
KWS Tayo	Hybrid Rye	127.0	92.0	105.0
KWS Serafino	Hybrid Rye	118.0	95.0	104.0
KWS Receptor	Hybrid Rye	125.0	88.0	-
SU Perspectiv	Hybrid Rye	-	92.0	102.0
Hazlet	Rye	99.0	67.0	80.0
Byrd	Wheat	85.0	94.0	50.0
Avery	Wheat	87.0	-	49.0
Langin	Wheat	77.0	-	47.0

IDAHO

2022 - 2025 Idaho Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2022	2023	2024 Average	2025 Aberdeen	2025 Kimberly	2025 Average
KWS Rixor	Hybrid Rye	-	-	-	175.0	202.0	188.5
KWS Tayo	Hybrid Rye	202.0	209.0	175.5	178.0	189.0	183.5
KWS Receptor	Hybrid Rye	189.0	216.0	206.5	167.0	182.0	174.5
KWS Serafino	Hybrid Rye	201.0	211.0	194.5	158.0	188.0	173.0
LCS Jet	Winter Wheat	165.0	150.0	174.0	146.0	-	146.0
SY Ovation	Winter Wheat	155.0	159.0	163.5	140.0	-	140.0
Keldin	Winter Wheat	-	160.0	167.0	131.0	-	131.0

Trial Highlights

Location: Aberdeen & Kimberly, ID - University of Idaho
Irrigated
2025: The Aberdeen location was planted on October 1, 2024 and Kimberly on October 11, 2024.

2024: These locations are planted next to the winter wheat variety trial. Hybrid Rye yields were tremendous and out-yielded the standard checks in that trial.

2023: Aberdeen location only.

2022: Aberdeen location only. This location was planted adjacent to the winter wheat trials. Hybrid Rye had tremendous yield and out -yielded the winter wheats.

ILLINOIS

Trial Highlights

Location: Champaign, IL - KWS Trial Plots
2025: These plots were located in our KWS Breeder Trial, planted on October 4, 2024 and harvested on July 3, 2025.

2024: These plots were in our KWS Breeder Trial. Planted on October 4, 2023 and harvested on June 21, 2024.

2023: These plots were at the KWS Station. Planted on October 6, 2022. Harvested on July 12, 2023.

2022: Planting date: October 19, 2021. Harvest date: July 1, 2022

2022 - 2025 Illinois Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2022	2023	2024	2025
KWS Serafino	Hybrid Rye	111.0	109.8	138.0	159.0
KWS Tayo	Hybrid Rye	91.0	116.8	133.0	156.0
KWS Rixor	Hybrid Rye	-	-	146.0	152.0
KWS Receptor	Hybrid Rye	109.0	127.3	127.0	-
Hazlet	Rye	83.0	-	63.0	98.0

IOWA

2022 - 2024 Iowa Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2022 Average	2023 Average	2024 Boone	2024 Greenfield	2024 Kanawha	2024 Nashua	2024 Average
KWS Serafino	Hybrid Rye	104.3	53.0	134.0	119.0	119.0	107.0	120.0
KWS Receptor	Hybrid Rye	102.0	53.0	106.0	133.0	123.0	99.0	110.0
KWS Tayo	Hybrid Rye	107.5	53.0	88.0	116.0	115.0	95.0	104.0
SU Performer	Hybrid Rye	-	-	99.0	99.0	123.0	97.0	105.0
SU Cossani	Hybrid Rye	-	-	96.0	109.0	112.0	99.0	104.0
Tulus	Triticale	85.0	47.0	101.0	91.0	92.0	91.0	94.0
Hazlet	Rye	65.0	34.0	77.0	71.0	80.0	70.0	75.0
Aroostook	Rye	71.3	39.0	81.0	64.0	80.0	69.0	74.0
Gardner	Rye	64.8	-	62.0	70.0	73.0	62.0	67.0
Dylan	Rye	60.0	35.0	64.0	52.0	65.0	69.0	63.0
Elbon	Rye	76.3	30.0	52.0	63.0	59.0	54.0	57.0
Danko	Rye	76.5	40.0	-	-	-	-	-
Spooner	Rye	63.5	35.0	-	-	-	-	-

Trial Highlights

Location: Iowa State University
Trials are located at Boone, Greenfield, Kanawha, and Nashua on the ISU Research Farms.
2024: Locations were planted between September 20, 2023 and October 9, 2023. Harvest occurred from July 16, 2024 through August 7, 2024. All locations had excellent, uniform growth and adequate rainfall leading to high yields. All locations followed a soybean crop.

2023: All 4 locations included. The previous crop was soybeans. Drought conditions caused lower yields.

2022: All 4 locations included and had good weather and yields.

KENTUCKY

2023 - 2025 Kentucky Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2023 Average	2024 Average	2025 Lexington	2025 Waverly	2025 Average
KWS Serafino	Hybrid Rye	108.7	80.0	102.0	118.0	110.0
KWS Rixor	Hybrid Rye	-	87.0	87.0	121.0	104.0
KWS Tayo	Hybrid Rye	111.3	72.5	74.0	120.0	97.0
KWS Receptor	Hybrid Rye	112.0	80.5	85.0	-	85.0
AgriMAXX 525	Wheat	-	66.0	74.0	-	74.0
Hazlet	Rye	46.0	45.5	41.0	78.0	59.5
Danko	Rye	42.0	58.0	52.0	-	52.0

Trial Highlights

Location: University of Kentucky
2025: Lexington location was planted on October 16, 2024 and harvested on June 25, 2025. The field was in good overall condition despite excess rainfall. Waverly was planted on October 16, 2024 and harvested on June 21, 2025. Excess rainfall damaged several plots at this location.

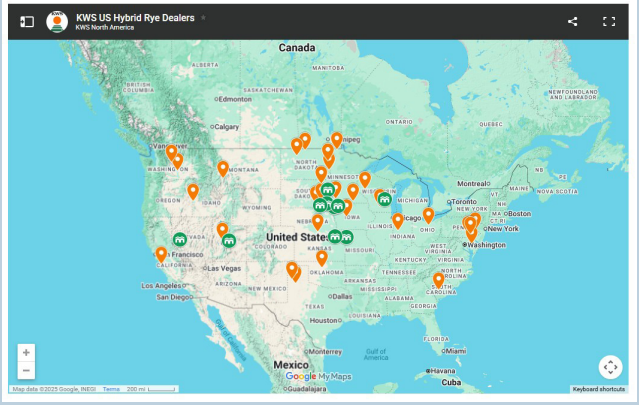
2024: Average includes the Lexington and Waverly locations. Lexington was planted on October 12, 2023 and harvested on June 20, 2024. Waverly was planted on October 16, 2023 and harvested on June 11, 2024. Fusarium (FHB) pressure was heavy and caused lower yields throughout the trial.

2023: Average includes Princeton and two Waverly locations. The Princeton location was planted on October 9 - 10, 2022 and harvesedt on June 23, 2023 and July 6, 2023. Conventional tillage. There was some early freeze damage that affected stem strength in certain varieties resulting in lodging. Extended seed filling period which boosted yields. Waverly, KY - After planting the germinating result was irregular because it was very dry. By November 1st, the ground recieved good rain with warm temperatures to help the crop recover and varieties yield well.

FIND A DEALER NEAR YOU

Use the dealer locator map found at www.kws.com/us

Dealer Locations & Information



MICHIGAN

2022 - 2024 Michigan Grain Trials *(shown in bushel/acre)*

Variety	2022 Average	2023 Average	2024 Mason	2024 SVREC	2024 Average
KWS Receptor	112.5	104.5	92.0	111.0	101.5
KWS Serafino	117.0	105.0	95.0	106.0	100.5
KWS Tayo	118.5	98.0	94.0	107.0	100.5

Trial Highlights

Location: Michigan State University
2024: Planted on October 2 & 4, 2023 and harvested on July 8 & 9, 2024.

2023: Average includes Mason and SVREC locations. Planted on September 30, 2022 through October 1, 2022. This trial was visited in May and the Hybrid Rye looked very promising and more lush than the winter wheat near it.

2022: Average includes Mason and SVREC locations. Planting date: September 19 & 20, 2021. Harvest date: July 10, 2022.

KWS RIXOR

Latest Hybrid Rye advancement from KWS, delivering **exceptional grain yield, agronomic strength and broad adaptibility** across the U.S.. Coming to the portfolio in 2026 for commercial availability!

Top Yields, Coast to Coast - Reached an impressive 195 bu/ac in Roseau, MN and wins 7 different state trials in 2025 as shown in the book.

Reliable Grain Quality- consistenty strong test weights

Agronomic Excellence- Short stature, outstanding lodging tolerance, and strong tolerance to Fusarium Head Blight

MINNESOTA

2022 - 2025 Minnesota Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2022 Average	2023 Average	2024 Average	2025 Becker	2025 Lamberton	2025 Roseau	2025 Average
KWS Rixor	Hybrid Rye	-	-	-	99.0	102.0	195.0	132.0
KWS Serafino	Hybrid Rye	116.8	112.0	133.0	97.0	109.0	170.0	125.0
KWS Tayo	Hybrid Rye	114.8	110.0	130.0	90.0	94.0	178.0	120.0
KWS Receptor	Hybrid Rye	113.2	107.0	140.0	77.0	99.0	169.0	115.0
SU Perspectiv	Hybrid Rye	-	108.0	127.0	74.0	99.0	137.0	103.0
Hazlet	Rye	87.2	69.0	95.0	81.0	91.0	134.0	102.0
Danko	Rye	81.2	87.0	101.0	64.0	83.0	141.0	96.0
Rymin	Rye	68.6	86.6	87.0	66.0	83.0	117.0	89.0
Gardner	Rye	76.3	75.0	77.0	59.0	80.0	104.0	81.0
Keldin*	Wheat	79.3	79.0	103.4	-	-	-	-

Trial Highlights

Location: University of Minnesota
2025: All locations except Roseau experienced a very dry fall. Despite this, the Lamberton location put up exceptional yields. The Grand Rapids and Crookston locations experienced severe drought and were not harvested. The Le Center location experienced a herbicide carryover issue that ruined the plot. Locations were planted September 16 - 30, 2024. Becker location was harvested on August 4, 2025, Roseau location harvested on August 15, 2025, and Lamberton was harvested on August 1, 2025.

2024: Average includes Becker, Crookston, Grand Rapids, Lamberton, Le Center, Roseau. Locations were planted from September 14, 2023 through October 2, 2023 and harvested on July 19, 2024 through August 19, 2024. Becker has limited irrigation; all other locations are dryland. A wet spring caused reduction in yield and probably loss of nitrogen at Lamberton location, as plants were in saturated soil for an extended period of time. **Please note the wheat trial is in a different trial area, but gives a comparison to wheat yields.*

2023: Average includes: Becker, Crookston, Lamberton, LeCenter, and Roseau. Planted on September 18, 21, 28 and 29, 2022. Location has limited irrigation, plots were uniform showing some signs of water stress. LeCenter location is non-irrigated and stands were a little thin from fall drought at planting.

2022 average includes: Becker, Crookston, LeCenter, and Roseau.

Trial Highlights

Location: Lamberton, MN
2025: A very dry fall caused poor establishment at this location, as shown in the yields. It was planted on September 20, 2024.

2024: Planted on September 27, 2023. Harvested on July 30, 2024. A wet spring caused reduction in yield and probably loss of nitrogen as plants were in saturated soil for an extended period of time.

2023: Planted on September 28, 2022 and harvested on July 27, 2023.

2022: Planted on September 28, 2021 and harvested on July 28, 2022.

2022 - 2025 Minnesota Grain Breeder Trial *(shown in bushel/acre)*

Variety	Grain Type	2022	2023	2024	2025
KWS Serafino	Hybrid Rye	100.0	138.0	85.0	96.0
KWS Tayo	Hybrid Rye	104.0	142.0	71.0	92.0
KWS Rixor	Hybrid Rye	-	-	89.0	89.0
KWS Receptor	Hybrid Rye	100.0	128.0	77.0	-
Hazlet	Rye	86.0	94.0	45.0	90.0

NEBRASKA

2022 - 2024 Nebraska Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2022	2023 Average	2024 Sidney	2024 N. Platte	2024 Mead	2024 Average
KWS Receptor	Hybrid Rye	130.0	75.0	56.0	142.0	107.0	101.7
KWS Tayo	Hybrid Rye	110.0	66.0	55.0	159.0	56.0	90.0
KWS Serafino	Hybrid Rye	129.0	64.0	40.0	145.0	82.0	89.0
Wesley	Wheat	-	47.0	-	-	-	-
Ruth	Wheat	83.0	43.0	-	-	-	-

Trial Highlights

Location: Lincoln, NE - University of Nebraska
2024: Sidney location had drought conditions that impacted yields. Planted on September 29, 2023 and harvested on July 22, 2024. North Platte location had adequate rain during pollination and grain fill. Planted on September 21, 2023 and harvested on July 16, 2024. Mead location had uneven stands from oat trash residue. It was planted on September 27, 2023 and harvested on July 10, 2024.

2023: Average includes Sidney and Mead locations. Locations were planted on September 26 - 28, 2022. They were harvested on July 31, 2023. There was good soil moisture at planting. Decent fall stand and winter survival. Tillered well in spring and had rains during pollination and grain fill which helped increase yields.

2022: Average includes Lincoln only. It was planted on September 24, 2021 and harvested on July 5, 2022. Overall good yields.

NEW YORK

2022 - 2025 New York Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2022 Average	2023 Average	2024	2025
KWS Rixor	Hybrid Rye	-	-	-	126.0
KWS Serafino	Hybrid Rye	123.0	102.5	119.0	122.0
KWS Tayo	Hybrid Rye	127.0	107.5	104.0	118.0
KWS Receptor	Hybrid Rye	132.0	116.5	118.0	110.0
Hazlet	Rye	94.5	74.5	84.0	65.0
Danko	Rye	99.5	88.5	96.0	-

Trial Highlights

Location: Cornell University
2025: Caldwell location experienced a high volume of rainfall all spring. Slight lodging in KWS Receptor. This site was planted on October 2, 2024 and harvested on July 21, 2025.

2024: Only one location in Caldwell, NY. Planted on October 4, 2023 and harvested on July 11, 2024. This field looked chlorotic. Nitrogen was lost because of excess water, which affected the nitrogen applied in the spring. Nitrogen not being available caused a loss in yields.

2023: Average includes Snyder and Caldwell locations and they were planted on October 5 and 12, 2022. These sites had poor emergence from later planting and weather.

2022: Average includes Snyder and Caldwell locations. Some water and winter injury on plots. Planted between October 1 - 8, 2021. Harvested on July 19 and 20, 2022.

NORTH DAKOTA

2022 - 2025 North Dakota Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2022 Average	2023 Average	2024 Average	2025 Carrington	2025 Minot	2025 Average
KWS Rixor	Hybrid Rye	-	-	-	125.0	102.0	113.5
KWS Receptor	Hybrid Rye	122.0	78.5	121.3	119.0	104.0	111.5
KWS Serafino	Hybrid Rye	113.7	73.4	112.3	114.0	95.0	104.5
KWS Tayo	Hybrid Rye	121.0	74.3	108.7	115.0	93.0	104.0
SU Perspectiv	Hybrid Rye	-	69.5	115.3	100.0	84.0	92.0
Hazlet	Rye	97.7	60.3	87.6	91.0	83.0	87.0
Danko	Rye	88.7	53.9	92.3	91.0	82.0	86.5
Aroostook	Rye	65.7	44.4	68.0	83.0	76.0	79.5
Dylan	Rye	87.0	53.0	88.0	74.0	68.0	71.0
Spooner	Rye	72.7	49.5	70.3	73.0	67.0	70.0
Gardner	Rye	-	47.4	70.7	70.0	65.0	67.5
Rymin	Rye	79.7	52.1	79.3	79.0	-	-

Trial Highlights

Location: North Dakota State University
2025: A dry fall reduced the yields slightly, but the plot was very uniform. Carrington was planted on September 20, 2024 and harvested on August 1, 2025. Minot was planted on October 14, 2024 and harvested on August 15, 2025.

2024: Average includes: Carrington, Langdon and Minot locations. Carrington location was planted on September 20, 2023 and harvested on August 2, 2024. The previous crop was forage barley. Langdon was planted on September 28, 2023 and harvested on August 19, 2024. The previous crop was soybeans. Minot was planted on October 12, 2023 and harvested on August 6, 2024. Previous crop was soybeans. Very uniform plots which resulted in exceptional yields.

2023: Average includes: Carrington, Hettinger, Langdon and Minot locations. They were planted between September 20 and 26, 2022 and harvested July 28 through August 9, 2023. Yields were lower than expected due to hot, dry weather in mid-June through end of July, with little to no precipitation.

2022: Average includes: Minot, Langdon and Hettinger. All locations had very good growing conditions in 2022. Planted between September 10 - 14, 2021 and harvested between August 2 - 11, 2022.

PENNSYLVANIA

2022 - 2025 Pennsylvania Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2022	2023	2024 Average	2025 Rock Springs	2025 Landisville	2025 Average
KWS Rixor	Hybrid Rye	-	-	-	78.0	99.8	88.9
KWS Serafino	Hybrid Rye	97.0	126.0	123.0	72.0	100.1	86.1
KWS Receptor	Hybrid Rye	103.0	120.0	122.0	71.0	100.3	85.7
KWS Tayo	Hybrid Rye	102.0	124.0	112.5	68.0	97.9	83.0
Hazlet	Rye	-	-	-	34.0	37.2	35.6
Aroostook	Rye	57.0	89.0	72.5	-	-	-
Surge	Triticale	79.0	-	-	-	-	-
Gunner	Triticale	58.0	-	-	-	-	-
Thor	Triticale	54.0	-	-	-	-	-

Trial Highlights

Location: Penn State University, Rock Springs Research Farm & Landisville, PA
2025: Both of these locations experienced very wet conditions from spring up through harvest. Locations were planted on October 22 - 23, 2024. Rock Springs was harvested on July 14, 2025 and Landisville on July 24, 2025.

2024: Average includes the Rock Springs & Landisville locations. Planted on October 24 & 26, 2023. Harvested on July 10 & 26, 2024. Rock Springs had uneven emergence and stand, but a mild winter and good rains improved the final yield. Landisville had a wet fall which delayed planting and caused uneven emergence. Rainfall early in April and warm dry weather later finished the drop in yield.

2023: Rock Springs location only. Planted on September 23, 2022. This trial was visited in early May. Rock Springs looked very nice and had received adequate moisture.

2022: Rock Springs location only. Rock Springs location tillered very well in the fall and early winter. The winter was mild and there was very little spring green up impacts from freezing. There was timely rainfall in the spring. Weed pressure was very minimal. There was little to no lodging in plots. Planted on October 15, 2021 and harvested on July 15, 2022.

SOUTH DAKOTA

2022 - 2025 South Dakota Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2022 Average	2023 Average	2024 Average	2025 Artesian	2025 Beresford	2025 Clear Lake	2025 Average
KWS Rixor	Hybrid Rye	-	-	-	69.9	71.1	71.9	70.8
KWS Receptor	Hybrid Rye	80.0	51.7	116.0	69.3	64.1	62.4	65.9
KWS Serafino	Hybrid Rye	70.3	50.3	103.0	66.9	64.4	67.0	65.9
KWS Tayo	Hybrid Rye	75.7	43.7	105.0	67.4	61.1	52.4	61.9
Danko	Rye	-	43.7	84.0	45.4	58.7	56.9	53.0
Aroostook	Rye	-	45.0	81.0	56.1	52.9	37.4	51.1
Hazlet	Rye	52.7	38.7	81.0	49.6	52.2	47.4	50.2
Gardner	Rye	53.0	40.0	58.0	48.3	40.4	40.3	43.5
Overland	Wheat	45.0	-	-	-	-	-	-

Trial Highlights

Location: South Dakota State University - Southeast Research Farm
2025: Just prior to harvest, severe storms laid down plants at all locations. Artesian location was planted on October 10, 2024 and harvested on August 11, 2025. Beresford location was planted on October 2, 2024 and harvested on August 1, 2025. This location had a very dry fall that limited yields. The Clear Lake location was planted on October 2, 2024 and harvested on August 20, 2025. Because of wet soil conditions here, only two replications were able to be harvested. Yields were limited by dry soil conditions in fall and early spring, and by hot dry weather in June 2025.

2024: Average includes Arlington, Beresford, and Clear Lake locations. Trials were planted on September 21, 2023, October 2, 2023 and October 11, 2023. They were harvested on July 22, 2024, August 9, 2024 and August 26, 2024. These trials were excellent with adequate moisture and uniform stands.

2023: Average includes: Arlington, Artesian and Beresford. Planted between October 2 - 11, 2022. Overall drought conditions lowered yields and reduced differences between varieties. Tyndall and Wagner locations had extreme drought, which led to poor stands and no yield data reported.

2022: Average includes: Artesian, Beresford and Tyndall. Yields were lower than expected because of the very hot and dry weather that occurred from the middle of June and lasted until the end of July with little or no precipitation.

2022 - 2025 South Dakota Grain Breeder Trial *(shown in bushel/acre)*

Variety	Grain Type	2022	2023	2024	2025
KWS Tayo	Hybrid Rye	82.0	25.0	121.0	73.0
KWS Rixor	Hybrid Rye	-	-	132.0	62.0
KWS Serafino	Hybrid Rye	77.0	34.0	116.0	60.0
KWS Receptor	Hybrid Rye	82.0	50.0	122.0	-
Hazlet	Rye	66.0	30.0	93.0	50.0

Trial Highlights

Location: South Dakota State University - Beresford, SD
2025: Drought hit this location hard, especially in the fall. Severe storms prior to harvest caused lodging across the entire trial. Location was planted on October 2, 2024 and harvested on August 1, 2025.

2024: Planted on October 9, 2023 and harvested on August 7, 2024. Excellent trial with adequate moisture and uniform stands.

2023: Planted on October 3, 2022. South Dakota overall was extremely dry this year, which reduced yields.

2022: Planted on September 22, 2022. Yields were lower than expected due to hot, dry weather.

WASHINGTON

2024 Washington Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2024
KWS Tayo	Hybrid Rye	109.0
KWS Serafino	Hybrid Rye	102.0
KWS Receptor	Hybrid Rye	94.0
LCS Shine	Wheat	95.0

Trial Highlights

Location: Washington State University - Pullman, WA
2024: Planted on October 17, 2023 and harvested on September 18, 2024. Later harvest in Washington resulted in some lodging. KWS Tayo stood well and did not lodge. KWS Serafino and LCS Shine winter wheat each had 1 plot lodged at a 90% level. KWS Receptor had 3 plots lodged at a 50-100% level.

WISCONSIN

2022 - 2023 Wisconsin Grain Trials *(shown in bushel/acre)*

Variety	Grain Type	2022	2023
KWS Serafino	Hybrid Rye	106.0	98.0
KWS Tayo	Hybrid Rye	110.0	95.0
KWS Receptor	Hybrid Rye	110.0	79.0
Hazlet	Rye	83.0	72.0
P25R74	Wheat	96.0	-

Trial Highlights

Location: University of Wisconsin - Arlington, WI

2023: Planted on September 23, 2022. Harvested on July 21, 2023. There were some stand issues due to corn residue and clumpy soils, followed by a season of limited moisture reduced yields, but still a very uniform stand and respectable yields.

2022: Planted on September 28, 2021 and harvested July 30, 2022. Excellent growing conditions.

Agronomy Trial Results

Our KWS team takes great pride in investing in research and development of our varieties so that we can offer the best recommendations and practices for our customers to be successful in the field. The following trials represent data collected in agronomy research trials funded by KWS in collaboration with universities and third-party vendors.

TRIAL HIGHLIGHTS:

Nitrogen Rate Study - IA

Nitrogen Rate Study - OH

Multi Year Nitrogen Rate Study - MN

Seeding Rate Trial - CO

Seeding Rate Trial - WA

Water Use - TX

Long-Term Rotation and Tillage - SD

NITROGEN RATE STUDY

Iowa State University
(Hybrid Rye vs OP Rye) X Nitrogen Rate Study
ISU Northeast Iowa Research Farm
Funded by KWS Cereals, USA and Iowa State University

2024 Yield Summary

Variety	Nitrogen (Rate/Acre)	Yield (Bu/ac)	Harvest Moisture %	Test Weight	% Lodge	Plant Height (in)	Straw Yield (Tons/acre)
KWS Serafino	30 lbs N	100.1	14.4	54.6	1.1	48.7	2.7
KWS Serafino	80 lbs N	130.3	14.4	54.2	2.8	51.1	3.0
Hazlet	30 lbs N	76.2	14.5	54.3	5.0	56.0	2.9
Hazlet	80 lbs N	90.5	14.4	53.6	5.0	55.5	3.0

DETAILS and FIELD OPERATIONS

Hazlet was seeded at 93.9 lbs/ac, and KWS Serafino at 53.9 lbs/ac. The previous crop was soybeans. Plots were planted on October 6, 2023. On October 17, 2023 all plots showed 95% emergence after a large rain event on Oct. 12 & 13. 31 lbs P205/ac as DAP and 200 lbs of K20/ac as 0-0-60 applied on November 7, 2023. 150 lbs S/ac of Supercal SO4, to get 25.5 Sulfur/ac applied on November 19, 2023. On March 7, 2024, 30 lbs N per acre was applied as urea to all plots. On April 1, 2024, 50 lbs N/ac applied as urea to all the 80 N/ac plots. Plant heights were gathered on July 12, 2024. Harvested on July 24, 2024 and individual grain samples from each rep were evaluated.

COST/PROFIT ANALYSIS

Assumptions:
Nitrogen Price/Ton - $600.00
Nitrogen Price/Unit - $0.65
Price/Acre of additional 50 Units of N - $32.61

SUMMARY

KWS Serafino with a 30 bu/ac increase valued at $5.00 per bushel with 50 units of additional N =
Hybrid Rye Profit - $117.39 more profit/acre

OP Rye with a 14 bu/ac increase valued at $5.00 per bushel with 50 units of additional N = **OP Rye Profit - $37.39**

With the previous crop of soybeans supplying some nitrogen and the applied nitrogen at 120 units, the corresponding 130 bu/ac yield on Hybrid Rye, the KWS nitrogen recommendation of 1.2 lbs of Nitrogen/Bushel supports this recommendation with help of the tremendous standability of Hybrid Rye.

NITROGEN RATE STUDY

Ohio State University
Hybrid Rye and Nitrogen Rate Experiment - 2025
Northwest Agricultural Research Station and Western Agricultural Research Station
Funded by KWS Cereals, USA and Ohio State University - Laura Lindsey, Matthew Hankinson, Pedro Guimaaes Gimenes

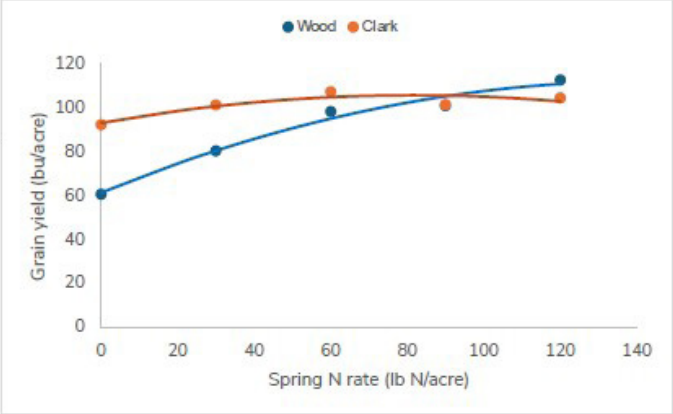


Figure above: Effect of spring N rate on grain yield at the Wood County and Clark County locations. All the details of this study can be found at stepupsoy.osu.edu

DETAILS and FIELD OPERATIONS

During the 2024 - 2025 growing season, an experiment was conducted to evaluate three rye hybrids from KWS (KWS Receptor, KWS Serafino, and KWS Tayo) and five nitrogen application rates (0, 30, 60, 90, 120 lb N/ac). The experiment was conducted at two locations - the Northwest Agricultural Research Station and Western Agricultural Research Station. Measurements were conducted on fall and spring canopy cover, head number, lodging percentage, grain test weight and grain yield at 14% moisture concentration throughout the growing season. The Wood location was planted on October 10, 2024, N application was on April 9, 2025, herbicide application on April 24, 2025, fungicide application on May 16, 2025 and harvested on July 14, 2025. The Clark location was planted on October 9, 2024, N application on April 1, 2025, herbicide application on April 22, 2025, fungicide application on May 15, 2025 and harvested on July 11, 2025.

SUMMARY

- Higher lodging was associated with higher N application rates at the Clark location.
- KWS Serafino yielded the highest at both locations.
- The optimum spring N application rate varied by location: 81 lbs N/acre was optimal in Clark County, while in Wood County, yield continued to increase with higher N rates.
- There was no interaction between hybrid and N application rate, indicating that the same N rate can be applied across all three hybrids.

Environmental factors, particularly rainfall and planting date, can significantly affect nitrogen response. Due to potential year-to-year variability, the experiment will be repeated next season. While grain yield increased with higher nitrogen rates, further analysis is needed to evaluate economic returns, considering nitrogen costs and overall profitability.

MULTI-YEAR NITROGEN RATE TRIAL

Magnusson Farms - Roseau, MN
Multi-Year Hybrid Rye Nitrogen Rate Trial
Funded by KWS Cereals, USA and University of Minnesota

Nitrogen Rate[1]	Yield (Bu/ac)[2]			3 year average	Test wt. #/Bu.	Harvest Ht (in.)
	2022	2021	2020			
0	36.8	50.9	29.2	39	53.9	44
40-0-0	76.9	78.3	69.7	75	54.2	48
80-0-0	95.5	93.3	83.0	90	54.2	50
120-0-0	89.1	103.8	85.7	93	53.7	48
160-0-0	83.5	103.9	86.2	91	53.4	50
200-0-0	91.6	101.3	94.1	96	53.7	50
200-0-0+PGR[a]	94.4	n/a	n/a	n/a	52.6	46
120-0-0-30S	93.4	103.7	90.8	96	53.7	51
LSD@5% level	15	13.1	9.8	9	0.6	3
CV (%)	12.4	9.7	8	8	0.8	4

*[1]Nitrogen Rate-All N rates are #N/acre- urea source. Trt#8 has 30# sulfur(AMS) added.
[a]Palisade 1EC 12 oz./ac + .25%NIS applied 5/27/2022 - Feekes 4-12" height
[2]Yield adjusted to 12% moisture.
Variety = KWS Tayo 2022; KWS Serafino 2021; KWS Brasetto 2020

DETAILS and FIELD OPERATIONS

Experimental Design = Randomized Complete Block design with 4 reps
Nitrogen Fertilizer applications made May 10, 2022.
Previous Crop - Canola

Soil Test - October 2021:					
0-6"	6-24"	(Soil test depth = 0-6")			
nitrate	nitrate	P	K	%OM	PH
13	na	4L	145M	3.4L	7.7

SUMMARY

Current KWS Cereals nitrogen recommendation is 1.2 units of N/bu. Treatment of 120 units aligns with current recommendations for 100 bu/ac Hybrid Rye.

Magnusson Farms - Roseau, MN - 2020 Hybrid Rye Nitrogen Rate Trial
Funded by KWS Cereals, USA and University of Minnesota

Nitrogen Rate[1]	Yield (Bu/ac)[2]	Test wt. #/Bu	Frost[2]	Stem Breakage[3]	Harvest Ht (in.)	Heading Date	Tissue Sample - Early Heading 6-7-2021			
							%N	%P	%K	%S
0	131.0	57.8	10	0.5	44	June 3	3.9	0.23	1.27	0.30
40-0-0	138.0	57.9	13	1.0	44	June 3	4.1	0.23	1.25	0.31
80-0-0	141.0	57.7	20	0.5	43	June 4	4.5	0.24	1.25	0.33
120-0-0	138.0	57.9	17	0.8	42	June 4	4.5	0.25	1.26	0.33
160-0-0	148.0	58.0	10	0.0	43	June 4	4.6	0.25	1.50	0.34
200-0-0	132.0	58.0	15	0.0	44	June 4	4.8	0.26	1.44	0.35
LSD@5% level	10	NS	NS	NS	NS	-	0.3	0.02	NS	0.03
CV (%)	5	0.4	104	186	4	-	5	5	14	6

[1]Yield adjusted to 12% moisture
[2]Frost damage 6/10-(white heads)- % of total
[3]Stem breakage 7/12- 0=none; 5= >30% stem breakage. Broken stems may not be picked up with combine.
Variety = KWS Serafino 2020

DETAILS and FIELD OPERATIONS

Planted September 15, 2021. Fertilizer applied April 25, 2021. Harvested July 29, 2021. Previous crop - soybeans in 2020.

Soil Test					
0-6"	6-24"	(Soil test depth = 0-6")			
nitrate	nitrate	P	K	%OM	PH
10	15	10M	128M	2.5L	8.2

SUMMARY

This trial differs from the multi-year nitrogen trial *(above)* in that the KWS Serafino was planted and out-yielded the KWS Brasetto planted at the location above. Treatment of 120 units applies to the current recommendation of 1.2 units of N/bu.

SEEDING RATE TRIAL

Colorado State Soil and Crop Sciences
2024 Seeding Rate Trial - Akron, CO - 1 year data
Funded by KWS Cereals, USA and Joel Schneekloth - Extension Crop Production

Variety	Seeding Rate (seeds/acre)	Yield (Bu/ac)	Test Weight	Protein	Group*
KWS Tayo	1,100,000	93.3	53.8	11.3	A
KWS Tayo	800,000	86.5	53.8	11.6	AB
KWS Tayo	500,000	85.9	54.3	11.4	AB
KWS Serafino	1,100,000	84.3	54.2	11.4	AB
KWS Serafino	800,000	84.3	55.1	11.1	AB
KWS Serafino	500,000	82.8	54.6	11.4	AB
KWS Receptor	1,100,000	87.4	54.8	11.2	AB
KWS Receptor	800,000	81.4	54.3	11.6	B
KWS Receptor	500,000	78.9	54.7	11.8	BC
Hazlet	1,100,000	67.3	54.9	12.0	D
Hazlet	800,000	70.4	55.2	11.7	CD
Hazlet	500,000	69.5	55.2	11.8	CD

*Similar letters are statistically the same

TRIAL HIGHLIGHTS:

Precipitation from September 29 to July 25 was 11.9 inches.
Irrigation total was 5 inches.
Fertility was 70 lbs N and 40 lbs P.
Planting date was September 29, 2023.
Harvest was July 24, 2024.

SUMMARY

This initial trial suggests that KWS Serafino and OP rye Hazlet, tend to have a lower response to higher seeding rates than KWS Receptor and KWS Tayo. This data further supports the KWS seeding rate recommendations of 800,000 seeds per acre as higher seeding rates offered only a minimal impact on yield and in most instances does not offset the additional cost of seed.

SEEDING RATE TRIAL

Conducted by Highline Grain - Mansfield, WA
2025 Seeding Rate Trial
Funded by KWS Cereals, USA and Highline Grain

Variety		Seeding Rate (seeds/acre)	Yield (Bu/acre)
KWS Serafino	Hybrid Rye	750,000	71.0
KWS Serafino	Hybrid Rye	500,000	76.0
KWS Serafino	Hybrid Rye	250,000	70.0
Piranha	Wheat	500,000	34.0

TRIAL HIGHLIGHTS:
Planted on August 29, 2024 at a depth of 4".
43lbs N, 6lbs P, 6lbs S applied per acre at planting.
25 lbs N, 10lbs S applied in fall.

SUMMARY

This experiment aimed to evaluate the performance of Hybrid Rye at lower plant populations and deeper seeding depths, practices commonly used in dryland regions of Washington State to place seed closer to subsurface moisture. Despite high snow mold pressure at this location, Hybrid Rye demonstrated excellent stand establishment, outperforming even the most tolerant wheat varieties typically grown in the area.

WATER USE IN CEREAL CROPS

Texas A&M AgriLife Research/Extension

Crop Water Use to Boot and Soft-Dough Harvest Stages

Jourdan Bell, Carla Naylor, Kevin Heflin, Jessica Smith, Jason Baker, Shannon Baker, and Brandon Gerrish

SUMMARY

Hybrid Rye requires less total water than wheat or triticale. This was most notable at the late cut, soft dough stage with Hybrid Rye needing almost 1.5 inches less water. This could result in a significant cost savings in water limiting regions.

"Crop water use is an important consideration for Southern Great Plains producers, and to answer producer questions about differences in water use between forage types, seasonal crop water use was determined for three varieties representing wheat, rye, and triticale (Table 4). Data confimed significant differences in total crop water use between forage types, but producers should consider 1) greater water use is a function of a longer growing season and 2) greater water use efficiencies are a function of greater yields within the respective forage type. To minimize yield losses and overcome potential heat stress, irrigation capacity is an important agronomic consideration"[1]

Boot							
Variety	Forage Type	Harvest Date	Soil Water Use (in)	Precip (in)	Irrig (in)	Total Water Use (in)	WUE (lbs/ in.)
TAM 114	Wheat	4/26/24	2.5	4.6	9.5	16.6 b	571
KWS Aviator	Hybrid Rye	4/26/24	1.9	4.6	9.5	16.0 c	520
Slick Trit II	Triticale	5/4/24	3.4	4.6	9.5	17.5 a	623
					Average	16.7	571
					CV (%)	4	11

Tables: Crop water use to boot and soft-dough harvest stages. Total crop water use represents the combined soil water, precipitation, and irrigation from planting to the reported harvest date. The water use efficiency represents the pounds of forage (DM basis) per inch of total water.

Soft-Dough							
Variety	Forage Type	Harvest Date	Soil Water Use (in)	Precip (in)	Irrig (in)	Total Water Use (in)	WUE (lbs/ in.)
TAM 114	Wheat	6/3/24	6.4	5.7	12	24.2	621
KWS Aviator	Hybrid Rye	6/4/24	5.3	6.3	12	23.6	527
Slick Trit II	Triticale	6/11/24	6.7	6.3	12	25.0	538
					Average	24.3	562
					CV (%)	3	12

[1]Bell, J., C. Naylor, K. Heflin, et al. 2023-2024 Texas A&M AgriLife Small Grain Silage Trial at Bushland. Texas A&M University, Department of Soil and Crop Sciences. SCSC-2024-11

*numbers with different superscript letters differ significantly, P<0.05

LONG-TERM ROTATION & TILLAGE STUDY

South Dakota State University

Long-Term Rotation and Tillage Study: Observations on Corn and Soybean Yields

Peter Sexton, Brad Rops, Ruth Stevens, Garold Williamson, and Chelsea Sweeter*

INTRODUCTION

"In 1991 Dale Sorensen initiated a long-term rotation study at the Southeast Farm, including comparison of no-till and conventional till under two year (corn-soybean), three year (corn-soybean-small grain) and a 4-year rotation (currently corn-soybean-oat-winter rye); note the three and four-year rotations have not been consistent over the years. In previous years, sometimes field pea was substituted for small grain, and sometimes soybeans were raised twice within the four-year rotation. Corn has consistently only been raised once per cycle in a given rotation. Therefore, the rotation length has been consistent for corn, but not for soybean." (Station, South Dakota Agricultural Experiment, "Southeast South Dakota Experiment Farm Annual Progress Report, 2023" (2023). Agricultural Experiment Station and Research Farm Annual Reports. 284. https://openprairie.sdstate.edu/agexperimentsta_rsp/284)

SUMMARY

"Corn yields showed a strong response to rotation length, yielding about (22 bu/ac) more going from a two year to a three year rotation. Soybean in a two year corn/soybean rotation showed a significant yield increase (3 bu/ac) with addition of a rye to the system." (Research Farm, Southeast South Dakota and South Dakota Agricultural Experiment Station, "Southeast South Dakota Experiment Farm Annual Progress Report, 2019" (2019). Agricultural Experiment Station and Research Farm Annual Reports. 280. https://openprairie.sdstate.edu/agexperimentsta_rsp/280)

	Corn			
Rotation	Moisture %	Test Wt (lbs/bu)	Stand (plts/ac)	Yield (bu/ac)
2	**15.8**	57.3	27,769	173.3
3	**16.0**	56.1	27,987	195.9
4	**16.8**	56.9	28,859	195.8

	Soybeans					
Rotation	Moisture %	Test Wt (lbs/bu)	Stand (plts/ac)	Height (in.)	100-Seed Wt. (g)	Yield (bu/ac)
2	**12.7**	54.9	81,893	**31.7**	15.8	45.8
3	**12.6**	55.0	85,378	**32.1**	16.3	47.7
4	**12.7**	54.7	90,387	**31.7**	16.4	47.9

Research Farm, Southeast South Dakota and South Dakota Agricultural Experiment Station, "Southeast South Dakota Experiment Farm Annual Progress Report, 2019" (2019). Agricultural Experiment Station and Research Farm Annual Reports. 280. https://openprairie.sdstate.edu/agexperimentsta_rsp/280

Forage Results

Our forage varieties, KWS Progas and KWS Aviator, are known for their unique combination of tonnage and quality. If you are looking for the ultimate forage solution then look no further than KWS Hybrid Rye!

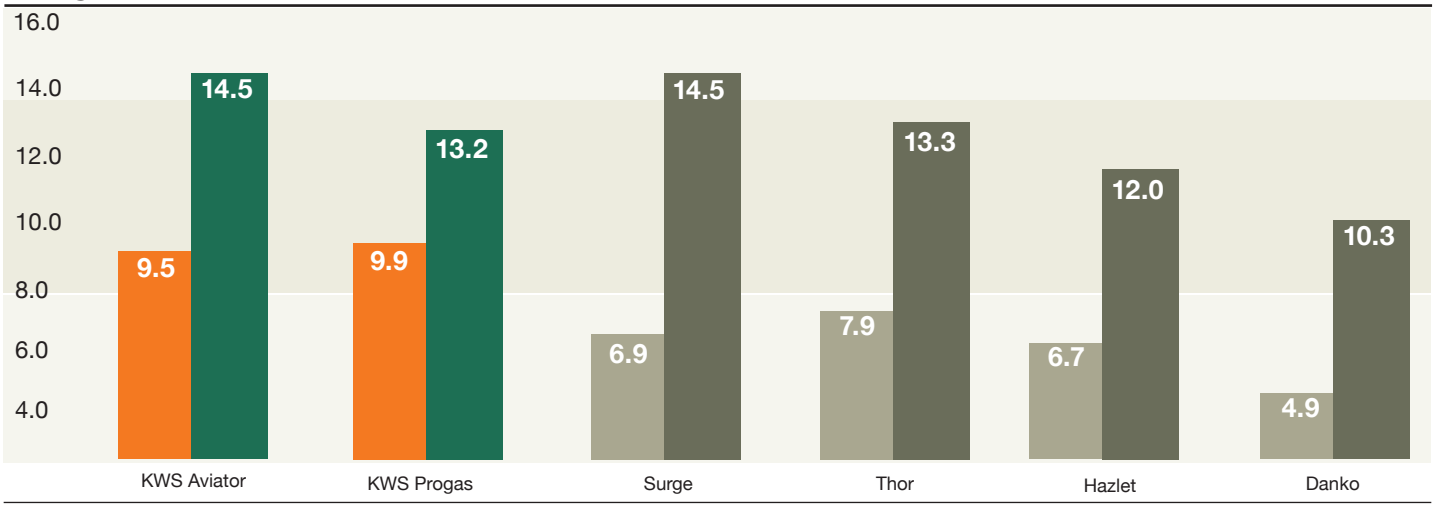
Trials Featured:
- Eastern US Forage Summay - *6 locations over 3 years*
- Central US Forage Summary - *5 locations over 3 years*
- Western US Forage Summary - *1 location over 2 years*
- Colorado, Kansas, Kentucky, Nebraska, New York, North Dakota, and Pennsylvania

**all yields adjusted to 35% DM yield*

HYBRID RYE - EASTERN US FORAGE RESULTS

**Summary from 6 locations over 3 years showing consistent high yields and quality*

Forage Yield, Tons/Acre



Eastern US Forage - Tons/Acre shown at 35% DM and harvested at boot and milk stage. Left bar of each variety is boot stage, right bar is milk stage. Chart represents a three year data (2022, 2023 & 2024) average across the following locations: Lansing and Mason City, MI, Caldwell, NY, Pennsylvania Furnace and University Park, PA and Orange, VA. **KWS Aviator and KWS Progas are hybrid rye, Surge and Thor are triticale, Hazlet and Danko are cereal rye.

Forage Quality

	CP	ADF	aNDF	aNDFom	Lignin	NDFd, 30	NDFd, 48	NFC	TDN	RFV
	%DM					%aNDFom				
BOOT CUT										
KWS Aviator	16.20	33.93	56.63	55.07	3.35	61.75	71.30	19.59	63.10	104.62
KWS Progas	15.11	33.60	57.12	55.56	3.76	62.30	71.66	20.50	63.90	104.26
Surge	15.73	31.09	52.28	50.89	1.98	65.00	72.85	23.20	65.38	115.67
Thor	17.34	32.95	55.03	53.45	2.38	66.35	71.95	19.76	64.24	107.47
Hazlet	16.28	32.75	55.86	54.54	2.45	66.06	71.79	19.78	64.28	105.72
Danko	15.40	34.31	58.57	57.24	3.30	63.88	70.55	18.46	63.46	98.60
MILK CUT										
KWS Aviator	11.06	38.87	62.71	60.94	6.99	43.00	50.71	18.83	62.71	87.40
KWS Progas	8.47	39.08	63.30	61.79	7.07	43.16	50.73	20.20	64.28	86.39
Surge	9.15	36.32	61.85	59.90	6.03	47.74	53.68	23.12	62.77	91.14
Thor	9.54	38.60	64.67	63.13	6.73	47.92	56.90	18.97	61.85	84.87
Hazlet	8.32	38.90	64.56	62.58	6.09	43.02	53.76	21.38	60.82	84.60
Danko	8.24	39.66	64.19	62.05	6.93	40.85	49.12	21.57	60.59	84.13

Forage quality data from Caldwell, NY in Cornell University Trials in 2023 and 2024. Samples were analyzed at Dairyland Labs, Arcadia, WI.

Experience the KWS Hybrid Rye difference. The forage choice preferred by livestock across the globe.

By pairing the KWS Hybrid Rye breeding process with top tier genetics, consistent and stable performance can be expected year over year. From hybrid vigor, to greater water use efficiency, and everything in-between; All benefits align to generate optimal ROI for your operation by utilizing KWS Hybrid Rye as a forage source.

NEW YORK

2024 New York Forage Trials *(shown in tons/acre)*

Variety	Grain Type	2024 Early Cut	2024 Late Cut
KWS Aviator	Hybrid Rye	6.30	14.20
KWS Progas	Hybrid Rye	6.80	12.80
Danko	Rye	4.90	10.10
Hazlet	Rye	5.70	11.70

Trial Highlights

Location: Cornell University, Caldwell Field - Ithaca, NY
2024: Trial was planted on October 4, 2023 and the early cut date was May 9, 2024 and late cut was June 11, 2024.

PENNSYLVANIA

2025 Pennsylvania Forage Trials
(shown in tons/acre)

Variety	Grain Type	2025
KWS Aviator	Hybrid Rye	7.23
KWS Progas	Hybrid Rye	5.94
Hybrid Flex	Triticale	6.23
Grazemaster II	Rye	4.80

All other cereals were harvested a MONTH later than KWS Hybrid Rye and are not shown for comparison.

Trial Highlights

Location: Pennsylvania State University - Rock Springs, PA Research Station

2025: Trial was planted on October 10, 2024 and the varieties above were harvested on May 8, 2025. The trial was very delayed in April, due to a cold spring and a dry fall.

KENTUCKY

2023 - 2024 Kentucky Forage Trials *(shown in tons/acre)*

Variety	Grain Type	2023 Early Cut	2023 Late Cut	2024 Early Cut	2024 Late Cut
KWS Aviator	Hybrid Rye	7.20	19.00	13.60	19.30
KWS Progas	Hybrid Rye	7.70	19.00	12.80	19.30

Trial Highlights

Location: University of Kentucky, Lexington, KY
2024: Trial was planted on October 3, 2023. It had excellent uniform stands.

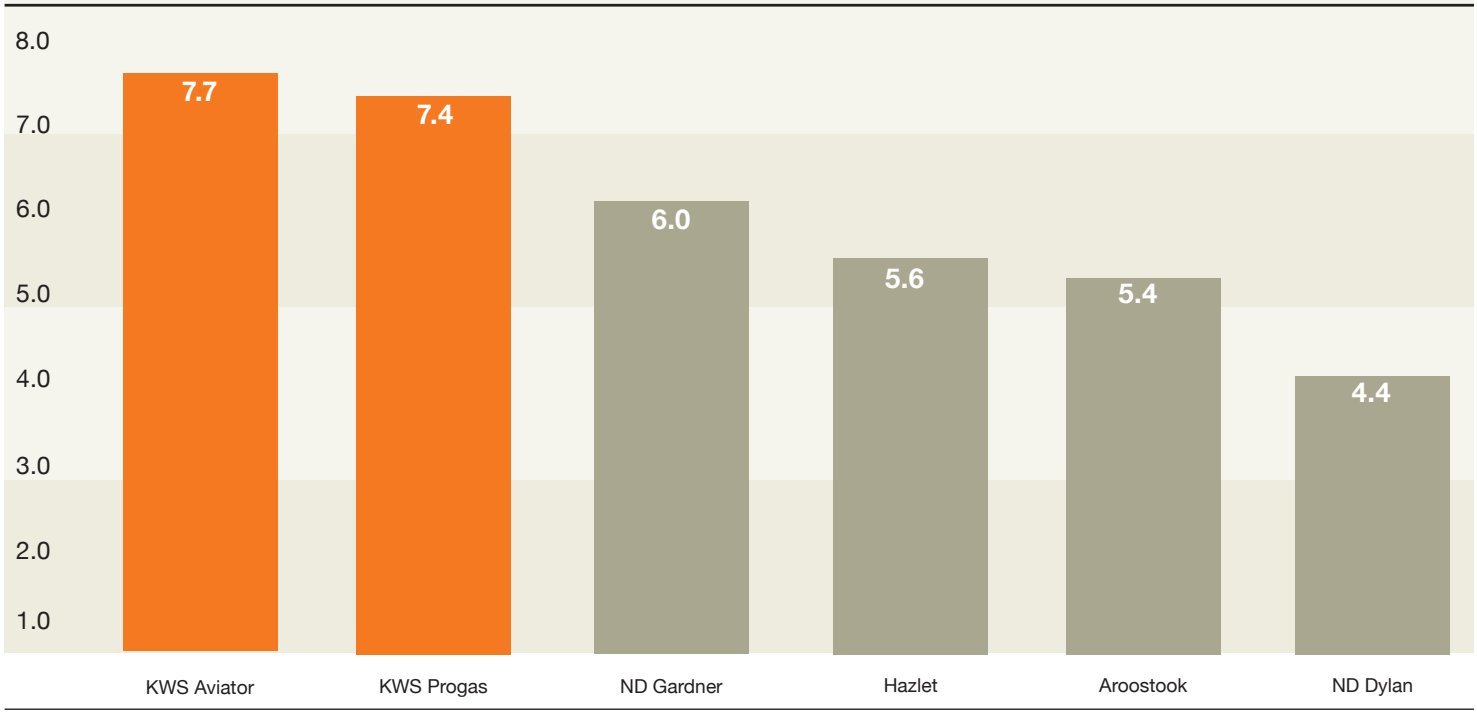
2023: Planted on October 6, 2022 with early harvest occurring on April 19, 2023 and late cut occurring on May 18, 2023. Excellent stands with reduced early rainfall.
**This trial is not included in a forage summary in the book.*

HYBRID RYE - CENTRAL US FORAGE RESULTS

**Summary from 5 locations over 3 years showing consistent high yields and quality*

SEEDING THE FUTURE
SINCE 1856

Forage Yield, Tons/Acre



Central US Forage - Tons/Acre shown at 35% DM and harvested at boot stage
Chart represents a three year data (2023, 2024 & 2025) average across the following locations: Beresford, SD, Carrington, ND, Garden City, Sidney, NE, and Akron, CO.
**KWS Aviator and KWS Progas are hybrid rye, ND Gardner, Hazlet, Aroostook and Danko are cereal rye.

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Forage Quality

	CP	ADF	aNDFom	Lignin	NDFd, 30	NDFd, 48	NFC	TDN	RFV
		%DM			%NDFom				
KWS Aviator	15.87	33.16	53.49	3.83	58.69	62.23	19.94	63.45	109.33
KWS Progas	15.28	33.39	55.09	3.43	58.33	62.44	19.47	63.11	110.63
ND Gardner	16.45	35.55	57.52	4.60	37.67	56.58	10.89	57.79	95.53
Hazlet	17.72	33.13	56.39	3.67	36.60	59.71	8.32	58.93	103.07
Aroostook	18.46	31.88	55.46	3.91	40.59	64.79	13.02	60.73	103.75

Forage quality data from University Trials at Beresford, SD, Carrington, ND, Garden City, Hays and Scandia, KS and Sidney, NE.
Samples were analyzed at Dairyland Labs, Arcadia, WI.

COLORADO

2025 Colorado Forage Trials
(shown in tons/acre)

Variety	Grain Type	2025 Early Cut
KWS Progas	Hybrid Rye	15.1
KWS Aviator	Hybrid Rye	14.3
Big Country	Wheat	14.3
OK Corral	Wheat	12.3

KWS Hybrid Rye was harvested 10 days earlier than anything else in this trial.

Trial Highlights

Location: Colorado State University - Great Plains Reserach Station at Akron, CO
2025: Trials were planted on September 26, 2025. Hybrid Rye was harvested on May 12, 2025. Other crops mentioned above were harvested on May 21, 2025. KWS Hybrid Rye was planted at 800,000 seeds/acre. All other crops were planted at 900,000 seeds/acre.

KANSAS

At the Garden City location KWS Hybrid Rye was harvested 12 to 16 days earlier than other cereals during the early cut in 2024, and 8 to 11 days earlier in 2025.

2024 - 2025 Kansas Forage Trials *(shown in tons/acre)*

Variety	Forage Type	2024 Garden City		2025 Garden City	
		Early Cut	Late Cut	Early Cut	Late Cut
KWS Progas	Hybrid Rye	7.1	16.8	5.53	16.07
KWS Aviator	Hybrid Rye	7.2	15.8	4.57	14.65
OK Corral	Wheat	-	15.6	-	12.65
Jackalope	Rye	6.5	15.4	6.84	11.91

Trial Highlights

Location: Kansas State University
2025: The Garden City location was planted on October 24, 2024. The Hybrid Rye was harvested 8 - 11 days earlier than other cereals in the trial at boot stage. Late cut was harvested on June 13, 2025.

2024: The Garden City location was planted on September 25, 2023. The Hybrid Rye reached boot stage faster than triticales and wheat, which lowers their biomass potential without the extra days. On average, Hybrid Rye was harvested 12 - 16 days earlier than other cereals at the early cut stage. Late cut was harvested on June 4, 2025.

NEBRASKA

2024 - 2025 Nebraska Forage Trials *(shown in tons/acre)*

Variety	Grain Type	2024 Early Cut	2024 Late Cut	2025 Late Cut
KWS Aviator	Hybrid Rye	15.00	16.02	13.75
KWS Progas	Hybrid Rye	15.70	15.52	12.74
Surge	Triticale	-	-	12.20
Montech	Triticale	13.60	14.47	-
Wesley	Wheat	12.80	12.09	-

Trial Highlights

Location: University of Nebraska, High Plains Ag Lab at Sidney, NE
2025: Trial was planted on September 23, 2024 with very dry soil at planting. Due to persistent drought, irrigation was applied in small doses 3 different times. This made for average growth and limited tillering compared to prior years. Plots were harvested at soft dough stage.

2024: Planted on September 29, 2023 with early harvest occurring on May 20, 2024 and late cut occurring on June 11, 2024.

NORTH DAKOTA

2025 North Dakota Forage Trials
(shown in tons/acre)

Variety	Grain Type	2025 Early Cut
KWS Aviator	Hybrid Rye	9.40
KWS Progas	Hybrid Rye	6.40
Hazlet	Rye	9.00
ND Dylan	Rye	7.10
SU Perspectiv	Hybrid Rye	6.40

Trial Highlights

Location: North Dakota State University - Carrington, ND

2025: Trial was planted on September 20, 2024 and harvested on June 2, 2025. Harvest occurred no later than 2 days after head emergence. Hybrid Rye was seeded at 800,000 seeds/acre and other cereals at 1.2 million seeds/acre.

KWS Hybrid Rye was seeded with 400,000 LESS seeds/acre than other cereals

Forage Quality

	CP	ADF	aNDFom	Lignin	TDN	RFV	RFQ
		%DM					
KWS Aviator	13.20	36.40	60.00	3.89	60.50	93.90	153.10
KWS Progas	12.90	36.70	60.60	3.87	60.30	92.60	143.50
ND Dylan	16.00	33.50	57.52	4.60	62.80	103.80	154.80
Hazlet	14.50	33.80	57.60	3.26	62.60	101.10	157.60
SU Perspectiv	15.70	33.70	57.60	3.36	62.60	101.10	150.10

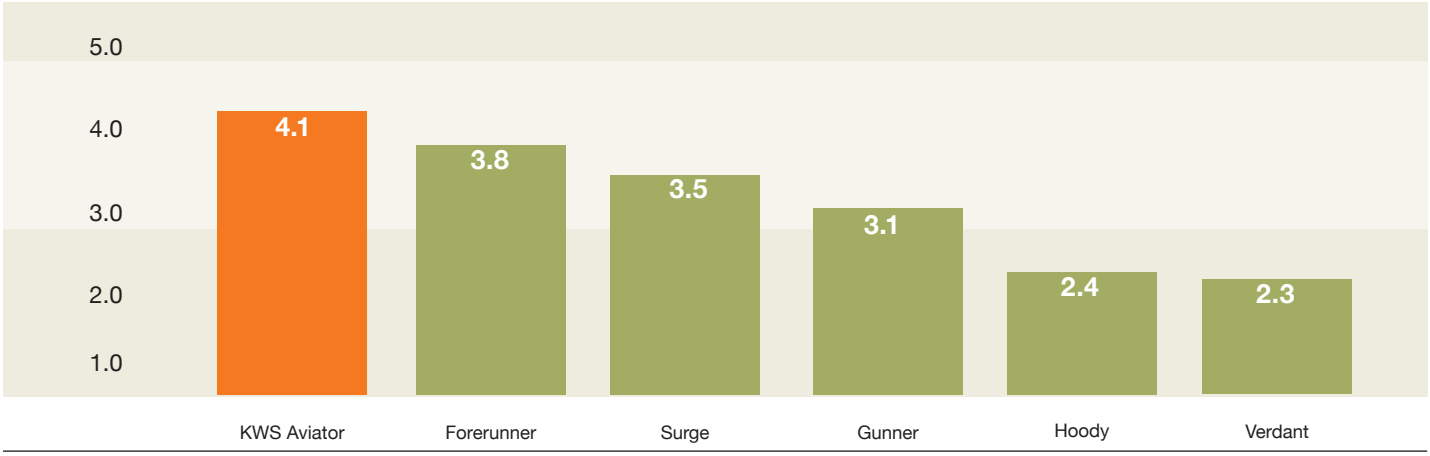
Forage quality data from North Dakota State University in Carrington, ND. Samples were analyzed at Dairyland Labs, Arcadia, WI.

HYBRID RYE - WESTERN US FORAGE RESULTS

**Summary from Aberdeen, ID over 2 years showing consistent high yields and quality*

SEEDING THE FUTURE
SINCE 1856

Forage Yield, Tons/Acre



Western US Forage - Tons/Acre shown at 35% DM and harvested at boot stage
Chart represents a two year data (2023 & 2024) average for Aberdeen, ID location
**KWS Aviator is hybrid rye, Forerunner, Surge and Gunner are triticale, Hoody and Verdant are barley.

Experience the KWS Hybrid Rye difference. The forage choice preferred by livestock across the globe.

By pairing the KWS Hybrid Rye breeding process with top tier genetics, consistent and stable performance can be expected year over year. From hybrid vigor, to greater water use efficiency, and everything in-between; All benefits align to generate optimal ROI for your operation by utilizing KWS Hybrid Rye as a forage source.

Forage Quality

	CP	ADF	aNDF	Lignin	NDFd, 30	NDFd, 48	TDN
	%DM				%aNDF		
KWS Aviator	14.18	22.72	47.98	2.60	41.13	71.91	78.36
Forerunner	17.33	27.53	56.91	3.37	41.90	70.83	68.83
Surge	10.33	31.21	59.21	3.88	25.17	56.72	64.21
Gunner	17.55	29.48	59.22	3.60	38.49	64.12	65.37
Hoody	14.61	29.86	52.23	2.19	42.85	73.54	67.64
Verdant	12.06	19.53	39.79	1.58	44.63	78.76	80.44

Forage quality data from Aberdeen, ID locations. Samples were analyzed by NIR at the University of Idaho.

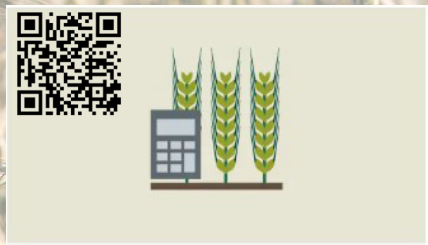
SAFEGUARD YOUR CROP WITH

KWS HYBRID RYE REPLANT POLICY

We all know mother nature can throw us curveballs - KWS helps turn those curveballs into home runs with our 100% replacement seed policy.

*Seed must be purchased from an authorized KWS distributor, proof of purchase verified, minimum purchase of 25 units, direct contact to be made with KWS Cereals. More details can be found with your authorized KWS distributor or directly from KWS Cereals.

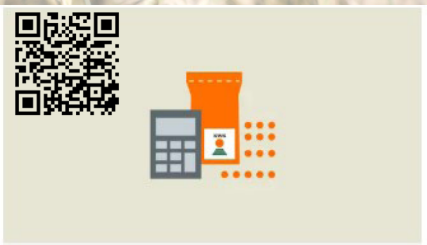
HELPFUL TOOLS FOR YOU



Yield Calculator

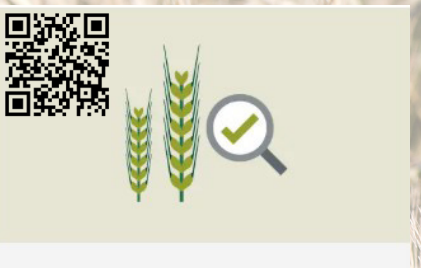
Get an estimate of your yield potential.

Take a few samples on your field and enter the resulting numbers into this helpful calculator.



Seeding Rate Calculator

Use this quick and easy tool to calculate how many lbs of seed per acre you should be planting and seeds / ft of row for planter calibration.



Stand Evaluation Calculator

Check your stand on your fields in fall and spring, and calculate the approximate plant population per acre and plant per square foot.

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Stay updated with the latest news and events.

Be part of the KWS community.