



KWS Hybrid Rye

Crop Production Guide

SEEDING
THE FUTURE
SINCE 1856



KWS SEEDS CANADA

Seeding the future – since 1856.



More Than Seed. A Trusted Partner for Canadian Farmers.

At KWS Seeds Canada, we're proud to offer market-leading Hybrid Rye genetics backed by decades of global research and local experience.

From seed selection to field support, our team is committed to helping you get the most from every acre. With trusted genetics, regionally tested agronomy, and a focus on long-term partnerships, we're here to support your success—season after season.



Visit our website
www.kws.com/ca





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Why KWS Hybrid Rye?

“The highest yielding small grain with the service to stand behind it.”

Hybridizing rye allowed for a rapid increase in yield potential by influencing the number of grains produced per head and combining this with robust hybrid vigor. The yield benefit of KWS Hybrid Rye over non-hybrid rye has increased by 25%–40% since the first hybrids were commercialized in Canada in 2014.

Hybridization has also minimized the risk of ergot infection by allowing our breeders to introduce PollenPLUS™ technology, reducing the time required for pollination to occur.

KWS Hybrid Rye seeds germinate quickly because of their ability to absorb moisture easily. In general, for germination to begin, a seed needs to achieve a moisture content of about 35–45% of its dry weight. Growers have noticed fast germination even in seemingly dry soil.

KWS Hybrid Rye is the most winter hardy cereal crop. It grows longer into the fall and starts earlier in the spring, outcompeting weeds, and heading 10–14 days earlier than winter wheat.



To view our current portfolio, scan the QR code or visit www.kws.com/ca



Grain Yield Potential

Very high yield potential exceeding 200+ bu/acre in prime conditions. This makes KWS Hybrid Rye the highest yielding small grain on the market.



Uniformity

KWS Hybrid Rye has a uniform crop height and time to maturity, compared to non-hybrid rye varieties.



Drought Tolerance

20% less water usage compared to winter wheat¹. The more robust root system and unique photosynthesis process via the stem and head improves drought tolerance.



Ergot Protection and Disease Resistance

Built-in ergot protection with KWS PollenPLUS™ technology and high disease resistance to fusarium.



Sustainability Qualities

Increased crop residue produced by crop reduces erosion. CO₂ efficient and lower greenhouse gas footprint than other small grains and corn. Produces 5 lbs less CO₂/bu than wheat and 6.7 lbs less than corn².



Lodging Tolerance

Better straw stiffness which provides excellent lodging tolerance. Excellent straw tonnage and quality. 1/3 more straw than wheat and barley. This can be an additional income stream, or used as high quality bedding for livestock.



Lower Inputs

KWS Hybrid Rye requires 20% less nitrogen¹ than other cereals with a recommended requirement of 1.2 lbs N per bu of yield goal (100 bu goal = 120 lbs N) and fewer pesticides than wheat.



Crop Rotation Benefits

Adding KWS Hybrid Rye into a crop rotation can result in increased soil organic matter, decreased weed pressure and breaking pest cycles.



Manure Utilization

KWS Hybrid Rye utilizes excess manure well in the fall and spring, and reduces soil nitrate levels following fall-applied manure. Spreads seasonal workload and allows earlier manure application.



Forage Source

KWS Hybrid Rye is a high yielding, early maturing forage source of protein and highly digestible fiber.



Winter Hardiness

KWS Hybrid Rye is the most winter hardy cereal crop. It can germinate in temperatures as low as 1°C in the fall. In the spring it will begin to grow at 3°C.



Adaptability

KWS Hybrid Rye can be established in a variety of soil types and qualities, including rich organic soils and poor sandier soils.



Weed Control

KWS Hybrid Rye competes intensely against weeds, reducing the viability of weed seeds through allelopathy effects. Early spring growth allows the plant to move through stem elongation faster which outpaces and shades weed growth. This is especially beneficial with herbicide resistant weeds as 80% of fields do not require in crop herbicide

¹ Sparing use of resources | Nitrogen requirements (draft Fertilizer Ordinance, Dec. 16, 2015, N uptake for wheat 2.51 kg/dt, N uptake for rye 1.96 kg/dt); Water requirements (Lower Saxony State Authority for Mining, Energy and Geology 2011); Need for pesticides (Lfl contribution margins and calculation data, Lfl Bavaria, 2016); CO₂ footprint (averages for the German NUTS 2 regions (BMEL, 2009))

² University of Netherlands: <http://webapplicaties.wur.nl/software/feedprintNL/index.asp>





Maximizing Ergot Protection with KWS Hybrid Rye

KWS Hybrid Rye is the only hybrid on the market with advanced ergot protection, making it ideal for livestock feeding and specialty markets.

KWS PollenPLUS™ varieties, when combined with our recommended RyeGHT Seeding Practices, significantly reduce the risk of ergot infection when compared to other rye varieties on the market.

PollenPLUS™ works by:

- Increased pollen shedding leads to rapid and complete pollination of the plant.
- Reducing the timeframe for ergot spore infection.

Field Management:

- Ergot lives in soil. Proper crop rotation should be used to break the cycle.
- Follow KWS RyeGHT Seeding Practices for optimal field management.
- Field edges are more susceptible to ergot. Harvest the inside first and store separately if higher levels are seen around edges to reduce contamination.
- Highly susceptible areas on farm can be harvested as forage prior to firm dough stage.
- If your field edge is surrounded by wild grasses or excessive weeds, mow before pollination begins.

Feeding Management:

- Low levels of ergot can be fed to certain groups of livestock.
- Test all grains for mycotoxins including DON and ergot before feeding.
- Dilute mycotoxin-contaminated grain with other grains based on measured levels.
- Work with your nutritionist to determine safe feeding levels for your herd. Levels will vary depending on species, stage of production.
- If necessary, ergot can be cleaned from grain before feeding to livestock.



KWS varieties with best-in-class ergot protection are **well-suited in livestock feed!**

- KWS Trebiano
- KWS Serafino
- KWS Receptor
- KWS Inspirator
- KWS Attainor

Pollen

PLUS

KWS PollenPLUS™

The innovative PollenPLUS™ technology from KWS ensures significantly improved pollen formation in Hybrid Rye and effectively strengthens the plants' resistance to ergot. In June 2017, KWS filed a patent for the Rfp1 gene. This patented enhanced restorer gene used in Hybrid Rye increases pollen shedding which prevents the fungus from penetrating the stigmas. The flowers are fertilized faster, and the glumes close sooner – meaning KWS Hybrid Rye has the best possible ergot protection.

With PollenPLUS™, ergot infestation is considerably reduced. KWS produces only 100% F1 PollenPLUS™ hybrid seed to maximize ergot defense and yield performance, benefiting both farmers and end users now and in the future.



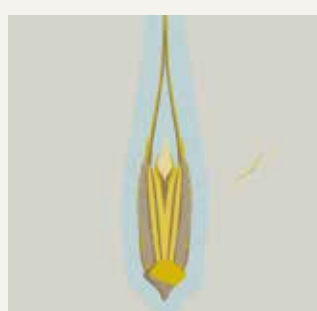
Scan to watch our
KWS PollenPLUS™ video



If the pollen count is low,
ergot spores can penetrate
the stigmas of the rye.



This results in an ergot
infestation, which can
jeopardize the harvest.



The PollenPLUS™ technology
ensures greater pollen
counts that repel floating
ergot spores.



The result: a strong and
healthy KWS Hybrid Rye
harvest!

Key Features:

- **Increased Pollen Production:**
As demonstrated in the June 2024 photo below, KWS varieties exhibit a significantly increased capacity for pollen shedding during pollination.
- **Ergot Resistance:**
Prevents ergot infection by promoting faster fertilization and quicker closure of glumes.
- **Higher Yield Potential:**
Results in more grain kernels and reduced grain dockage, enhancing overall productivity.

Benefits:

- **Increased Yield Stability:**
Reduced risk of ergot infection ensures more grain kernels per head.
- **Improved Crop Quality:**
Healthier rye plants result in better grain quality and less dockage.
- **Cost Efficiency:**
Reduced need for ergot-related interventions saves time and money for growers.

Visit www.kws.com/ca to learn more about
KWS PollenPLUS™ Technology.

Agronomy

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.

KWS RyeGHT Seeding Practices

RyeGHT Rate and Time

The standard seeding rate is **1 unit/acre** under good conditions for grain or forage use. To establish hybrid fall rye successfully, three weeks of good growing conditions are needed.

Seeding rate decision factors include moisture and heat units at seeding time, trash penetration, and seed row spacing.

The suggested seeding rate and target shoot growth are as follows:

Suggested Seeding Rates

Earlier Seeding

Units/acre	1.0–1.2
Target Shoot Growth	4–6 inches

Later Seeding

Units/acre	1.0–1.4
Target Shoot Growth	3–4 inches

* When seeding early with narrow row spacing and optimal moisture the rate of 0.8 unit/ac may be used.

* Please consult provincial crop insurance deadlines for insurable planting dates.

RyeGHT Preparation

Fall is busy, and fall seeded crops require proactive planning. Select well drained fields that are free of residual herbicides. Know where you plan to seed your hybrid rye before seeding your spring crop, seed that spring crop early, and spread the trash evenly during harvest to limit residue issues. Have your drill cleaned and ready after spring seeding is complete.

RyeGHT Seed Placement

Seed shallow at a **$\frac{3}{4}$ " depth** with a travel **speed of 5 mph or less** into a firm seed bed to maintain consistent seed depth. Seeding deeper or faster will result in higher seedling mortality and a reduced stand. Maintain a $\frac{3}{4}$ " seed depth even if the soil is dry and wait for rain. Narrow row spacing of 6–7.5" is optimal for hybrid fall rye. If seeding on 10–12" spacing, speed, depth, and rate are more critical to eliminate skips and gaps in the field.

RyeGHT Stand

Plant stand target is **16-18 plants/ft²** (grain) and **16-20 plants/ft²** (forage).

Even emergence and achieving the target stand will provide the most consistent yields and the best resistance against ergot.

RyeGHT Pest Control

To protect seedlings against disease and insects, hybrid fall rye should be professionally treated with a registered seed treatment. A pre-plant or pre-emergent herbicide application is important to control weeds when the hybrid rye is the least competitive. If weed pressure is high in spring, an in-crop herbicide application may be required. A well established hybrid rye stand will be competitive with most spring emerging weeds.



Maximize the potential of KWS Hybrid Rye with proper seedbed preparation, seeding rate, seeding depth, and a well calibrated seeder.



Spring Stand Evaluation

As more consistent warm temperatures arrive, particularly overnight, soil temperatures will increase and rye growth will accelerate. Fall rye remains the most winter-hardy of the fall-seeded cereals and is able to break dormancy at cooler temperatures. Once the crop begins to green up in the spring, it's a good time to assess the stand.

Scan the QR code to watch our [Winter Survival Video](#).

KWS Winter Survival Assessment



Conducting a Plant Count

A proper plant count helps evaluate the strength of your stand going into spring. Choose a well-represented area in your field and flag the location so you can return to it later. **Based on your drill's row spacing, your target plant count should be:**

- 6-inch row spacing: Aim for 17 plants within 24 inches of row
- 7.5-inch row spacing: Aim for 17 plants within 19 inches of row
- 10-inch row spacing: Aim for 17 plants within 14.5 inches of row
- 12-inch row spacing: Aim for 17 plants within 12 inches of row

A great video demonstration can be found [scanning the QR code](#).

Rye will grow earlier, and faster vs other fall seeded crops, so if you don't have all your fertility on in the fall, have a plan to get it on as soon as it thaws and dries up.

Other evaluations to consider:

- **Evaluate the roots**
This is the first part of the plant to become active! If there is soil sticking to the roots and the roots are white, this means they are alive and healthy.
- **Note thin areas in the field**
Spots with few plants could allow for additional late tillering which will be at risk for ergot because they will flower later than the main part of the field, when less pollen is available. Remember to re-check these thin areas before harvest to avoid contaminating clean grain.
- **Evaluate tillering**
In a representative spot in the field dig up several plants. Make sure to separate plants that may be growing next to each other. Count the number of tillers (stems) with at least 3 leaves originating from the base of the plant. KWS Hybrid Rye usually has 6–12 tillers per plant by the time it reaches the jointing phase.



KWS Plant Stand Count in the field



Fertility: What You Need to Know

Factors that will impact KWS Hybrid Rye fertility management



Soil Test

Soil testing is essential to determine soil fertility levels and make good nutrient management decisions. Appropriate nutrient application can increase yields, reduce production costs and prevent surface and groundwater pollution.



Use Your Resources

Rely on supporting businesses or experts to help with fertilizer recommendations and applications.



Soil Type & Conditions

KWS Hybrid Rye performs well in all soil types and yields significantly higher than other cereals in sandy soils. It is not recommended to plant KWS Hybrid Rye in poorly drained fields. Heavy soils, where conditions are consistently wet in the spring, may limit machinery traffic for spring N applications. In these situations, apply all N in the fall.



Seed-Placed Fertilizer

Seed-placed fertilizer is beneficial, but it is not recommended to exceed 15 lbs/acre of nitrogen.

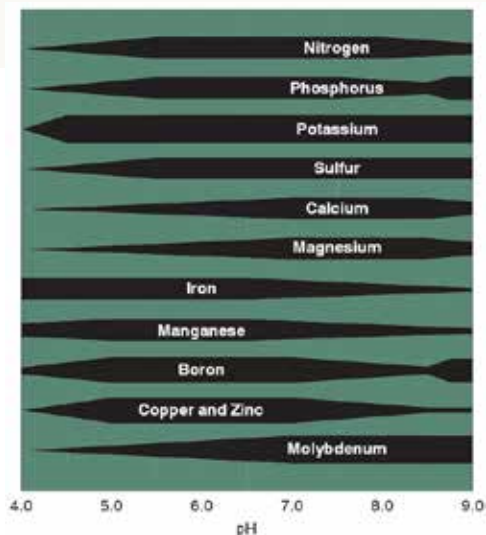


Manure

Remember that provincial manure application requirements may be different.

- It is critical to recognize the run-off risks associated with solid vs. liquid manures before making manure application decisions.
- Fall is the best time to inject or incorporate manure into the soil before planting KWS Hybrid Rye, especially if using manure as N source.
- Utilize the manure nutrient test results to help determine additional nutrient needs.
- Remember, the ammonium fraction of manure N is rapidly available, the organic form of N is slowly released and needs to interact with soil microbes both in the fall and very early spring, to ensure adequate mineralization and release.
- A spring application of solid manure is not recommended because it takes too long for the N to become available for the KWS Hybrid Rye to utilize. If spring manure application is necessary apply early.
- Dribble bars are recommended for spring liquid manure application to distribute manure close to the ground in between the rows. Apply at a rate of 20% of your Nitrogen needs.

pH and Nutrient Availability



Illinois Agronomy Handbook, University of Illinois Urbana-Champaign

Utilize the pH and Nutrient Availability Chart for your soils

High pH and dry soils can reduce phosphorous and manganese availability for early development of the crop. Foliar applications of manganese in the fall can increase winter hardiness by increasing sugar content in the plant. In the spring, manganese helps to increase root development to increase nutrient uptake.

KWS HYBRID RYE MANAGEMENT TIPS

Fall Planning	Soil testing recommended *Utilize Manure and Previous Crop Credits when determining nutrient availability in field	50-100%, P & K + 20-40 lbs of N	Early September - October	1 unit/acre (1,000,000 seeds) depth 0.75 to 1"					KWS
Seedling Growth									
10	First leaf through the coleoptile, up to 3 leaves								
Tillering									
21	Beginning of tillering, main shoot with 1 tiller								
26	Tillers formed, leaves often twisted, plants prostrate								
30	Leaves begin to lengthen								
30	Leaf sheaths strongly upright								
Stem Elongation									
31 Joining	First node of stem visible at base of stoot								
32 Jointing	Second node of stem formed; next to last leaf just visible								
37 Jointing	Flag leaf visible, but still rolled up, head beginning to swell								
39 Boot	Ligule of flag leaf just visible, swollen head								
45 Boot	Boot Stage - head swollen but not yet visible								
Heading									
50	First heads just visible, awns visible, head escaping sheath								
53	25% of heading								
55	50% of heading								
57	75% of heading								
59	All heads exposed								
Flowering									
60	Beginning of flowering in middle of head								
60	Flowering complete to top of head								
71	Flowering over at base of head								
71	Flowering over, kernel watery ripe								
Ripening									
75	Milky ripe								
85	Soft dough, contents of kernel soft but dry								
91	Hard kernel (25-35% moisture)								
92	Ripe for cutting —								



Fertilization Requirements for KWS Hybrid Rye

Why Proper Fertilization Matters:

Yield Maximization

- Fertilizing according to soil tests and realistic yield goals ensures optimal performance without unnecessary inputs.
- Hybrid rye is highly efficient at converting nutrients into biomass and grain—proper fertility supports its full genetic potential.

Crop Health & Resilience

- Early nutrient access supports winter hardiness, drives strong root development and rapid spring regrowth.
- Hybrid rye’s deep, aggressive root system improves soil structure, breaks up compaction, and naturally suppresses weeds.

Disease Management

- Early nutrient availability supports uniform crop development to reduce ergot risk by supporting synchronized flowering.

When to Apply Fertilizer:

Western Canada

- Apply 100% at fall seeding or split 60% at seeding and 40% broadcasted before winter.

Eastern Canada

- Apply 25% of the N and all of the P and K in the fall, apply remaining N and S in the spring at green-up.

Spring Application

- Apply remaining N and S as soon as the field is travelable and avoid causing ruts as they increase variability in the field.
- Hybrid rye begins nutrient uptake extremely early in spring and determines its reproductive tillers (headcount) within 10 days of breaking dormancy.
Note: Rye greens up and demands nutrients ~2 weeks earlier than other fall-seeded cereals.
- Avoid driving on the crop after stem elongation to prevent lodging, secondary tiller formation and to reduce ergot risk.

Nitrogen Stabilizers

- Do not use Nitrogen stabilizers on fall rye. They delay nitrogen availability, reducing early spring uptake when hybrid rye needs it most.

Nutrient Recommendation

N	P	K	S
1.2	0.65	1.80	0.25

- **Rate:** lbs/1 bushel
- Apply 100% fertilizer early, between root regrowth & 4 leaf stage

Hybrid Rye Nutrient Removal

	N	P	K	S
Grain	0.90	0.45	0.30	0.10
Straw	0.30	0.25	1.50	0.15
Total	1.2	0.65	1.80	0.25

lbs/bu removed

Fertilizer Recommendations Forage

Nitrogen (N)

- Use a similar nitrogen rate as a grain crop, with the goal of maximizing early biomass.

Potassium (K)

- Whole-plant harvest removes significantly more K than grain systems, making potassium a primary nutrient for hybrid rye.

Phosphorus (P) & Sulfur (S)

- Apply phosphorus and sulfur at the same rates recommended for grain production.
- Forage removal of P and S is comparable to grain systems and does not require additional adjustments.

Irrigation

Timing Observations for KWS Hybrid Rye

1. Irrigation Scheduling:

- Maintain adequate soil moisture from the beginning of the growing season. Irrigate immediately after seeding if the field is dry.
- Top up soil moisture heading into winter
- Early spring irrigation is essential to enter flowering with full soil moisture profile and maintain through flower.
- Modified Irrigation during flower to help promote pollen production, while also limiting potential ergot issues.
- Refer to the flowering chart below.

2. Deficit Irrigation and New Tillers:

- A significant deficit of irrigation during the tillering and jointing stages may cause late tillers to develop.
- These tillers mature unevenly, produce less pollen, and are more susceptible to ergot.

3. Critical Irrigation Scheduling:

- Reduce stress between early flag leaf stage (37 Zadock) and milky stage (50 Zadock).
- The most critical period is 10 days prior to bloom through the late milk stage.
- Continue irrigation through the grain fill period.
- Deficit irrigation during these stages will lead to yield reduction.

Timing of last irrigation

The timing of the last irrigation depends on various factors, including soil type, irrigation system, time of year, and growth stage. Water stress towards the end of the season may reduce kernel size, test weight, and yield. No water is needed once the heads have completely matured and turned from green to brown.

- **Sandy to sandy loam soils:** May require irrigation through the soft dough stage.
- **Heavy soils:** Last irrigation could be before the soft dough stage.

Growth Stage	Approx. Dates	~Days	~Water Use (in)
Emergence Fall Growth	Sept. 1 – Oct. 15	30	2
Dormancy			0
Spring growth-tillering	March 20 – April 20	30	2
Jointing stage	April 20 – May 10	20	2
Boot/Heading stage	May 10 – May 25	20	2
Flowering Stage	May 25 – June 1	10	1
Grain fill	June 1 – July 10	40	4
Maturity	July 20 – July 25	10	Total 13

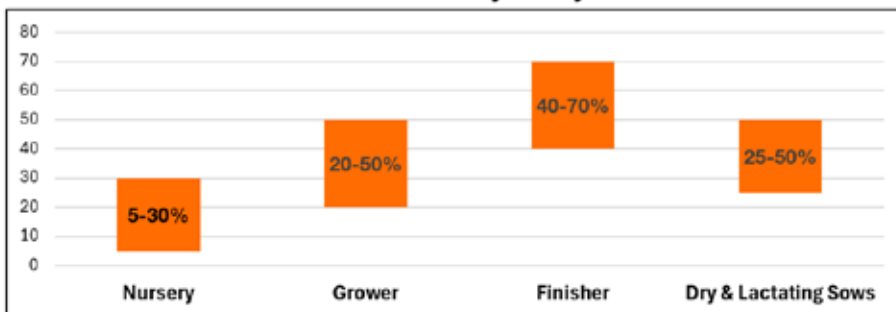
End-Use Market Opportunities

KWS Hybrid Rye offers diverse market opportunities due to its versatility and high nutritional value. Here are some key end-use markets:

Livestock Feed

KWS Hybrid Rye makes an excellent feed for all livestock species, promoting animal health and welfare with strong performance. As a grain, the nutritional profile includes consistent, high-quality protein, high levels of soluble fibre and high energy values, making it an excellent feed for swine, poultry and cattle. As a forage it can be grazed, cut for green feed or ensiled. Cutting early will maximize nutritional quality and cutting late will maximize yield, making it an ideal option for both dairy and beef cattle farms.

Recommended Inclusion Levels of KWS Hybrid Rye in Swine Rations*



* KWS Hybrid Rye is commonly fed to swine in many countries around the world at these inclusion levels. These recommendations are also supported by multiple research studies in Canada, the USA and Europe.

Cover Crop

The KWS Cover+® soil protection program is an innovative opportunity that allows Hybrid Rye grain to be sold to licensed partners and utilized as a terminal cover crop. This program enhances soil and environmental protection, opening new avenues for selling Hybrid Rye grain.

KWS COVER+®
soil protection program

Distilling

In the distilling industry KWS Hybrid Rye grain is used to produce high-quality spirits. Its unique characteristics contribute to the flavor and quality of the final product, making it a preferred choice for distillers.

Milling

KWS Hybrid Rye grain can be used in baking and milling to produce various food products such as bread, pastries, and cereals. The grain's unique flavor and nutritional benefits make it a valuable ingredient in human nutrition.

Ethanol

KWS Hybrid Rye grain can be used as a feedstock for ethanol production. As a starch-rich cereal, rye is well suited for the fermentation process used to produce renewable fuel, providing an additional market opportunity for growers where ethanol processing facilities accept rye grain.



Harvest Tips

Harvesting for Grain

KWS Hybrid Rye harvest occurs from mid-July to mid-August. Direct harvesting is preferred for optimal grain quality, swathing and pickup harvesting is also an option. KWS Hybrid Rye is uniform in height, has stiff straw, and excellent standability, which helps control header height and reduces the amount of straw processed through the combine. Prepare for harvest when grain moisture approaches 16%, as it dries down quickly to the target range of 12–14%, though the stems may still be green.

Achieving optimal yield and seed quality:

- Rye is a free-threshing crop, it releases its grain from the chaff easier compared to wheat or barley, while maintaining low shatter risk in normal conditions.
- Consider combine settings similar to wheat but ensure gentle threshing by slowing down the cylinder/rotor speed, and 33% higher straw yield.
- Gentle handling also helps reduce breakage of any ergot sclerotia present so they are more likely to pass over the sieves and out the back of the combine.
- Harvest between 12–15% moisture, overly dry seed can crack and dust off.
- If needed, use an aeration bin to dry the grain immediately after harvest, ensuring the air front blows through the bin to maintain quality.
- An air floor bin can reduce moisture by 1–2%. Beyond a 2% reduction in moisture, consider drying at temperatures below 50 degrees celsius.
- For long-term storage, ensure the grain is below 13% moisture.

Harvest Residue Management

KWS Hybrid Rye produces about one third more straw than wheat. If leaving the straw on the field, make adjustments to ensure header cut height and chopper spreader are set correctly. Properly dispersed residue will break down more easily and facilitate the establishment of the following crop. To avoid volunteer rye in the next crop, it's important to have a strategy for handling the straw and stubble after harvest. Lightly work the stubble after harvest at an angle to the combine direction. This will help kernels fall onto the soil surface and germinate. Use deeper tillage if necessary after most of the rye has germinated.

KWS Hybrid Rye makes a large volume of straw which can be a good source of livestock bedding, or roughage for cattle. If planning to bale the straw consider cutting lower and how you spread the straw for ease of pickup.

Harvesting for Silage

KWS Hybrid Rye is an excellent forage choice for silage, offering high yields and nutritional value. The timing of the harvest is crucial to maximize the quality and quantity of the silage. There are two main cutting options: early cutting and late cutting, each with its own benefits and considerations.

Recommendations for Silage Harvest

- **Field Conditions:** Check field conditions to avoid harvesting in wet or muddy areas, which can affect the quality of the silage.
- **Storage:** Properly store the silage in airtight silos or bags to prevent spoilage and maintain quality.
- **Quality Control:** Regularly monitor the silage for any signs of spoilage or nutrient loss and take corrective actions as needed. Proper facing

of the pile, no different than other ensiled forages, is key long-term silage preservation.

Early Cutting

Early cutting typically occurs when the rye is in the boot stage, just before the heads emerge. This stage is characterized by high protein content and digestibility, making it ideal for high-quality silage. Here are some tips for early cutting:

- **Monitor Growth:** Keep a close eye on the rye's growth stages to ensure timely cutting. The boot stage is the optimal time for early cutting.
- **Moisture Content:** Aim for a moisture content of 65%–70% for the best fermentation and preservation of nutrients.
- **Alternative Methods:** If the rye is too wet for direct chopping, consider using alternative methods such as wilting the rye before chopping. This involves cutting the rye and allowing it to dry in the field for a short period before chopping.

Late Cutting

Late cutting occurs when the rye is in the milk ripe to soft dough stage, where the grains are more mature. This stage offers higher yields, but lower protein content compared to early cutting. Here are some tips for late cutting:

- **Monitor Grain Development:** Ensure the rye has reached the milk ripe to soft dough stage, where the grains are soft and not fully hardened.
- **Moisture Content:** Aim for a moisture content of around 65% to ensure proper fermentation and preservation.



KWS Hybrid Rye Early Cut Forage

KWS Hybrid Rye vs. Non-Hybrid Rye

- Based on 2 years of small plot trials in Ontario, all KWS Hybrid Rye varieties perform exceptionally well as an early cut forage, with the flexibility to be taken to grain.
- With 2026 harvest on Ontario commercial farms, on average, KWS Hybrid Rye yielded 17% higher than non-hybrid rye.
- KWS Hybrid Rye has more vigorous tillering and more consistent performance across varying weather patterns and soil types.

KWS Hybrid Rye vs. Cover+®

- Cover+® is a cover crop, it is not a high-performance forage.
- In 2026 harvest conditions on commercial farms, KWS Hybrid Rye yielded, on average, 25% more than Cover+®.

Variety	Seeding Rate (lbs/acre)	Average Yield MT/acre (corrected to 35% DM)	Yield % vs. Non-Hybrid Rye
KWS Hybrid Rye	80–95	4.83	117
Non-hybrid rye	100–130	4.14	100
Cover+®	130	3.63	88

* Field scale commercial producer trials, Ontario, 2026
 * Harvested from flag to boot stage on dryland



KWS Hybrid Rye vs. Triticale

- KWS Hybrid Rye achieves maturity 7–10 days earlier, improving double cropping opportunities and increasing total productivity per acre on farm.
- KWS Hybrid Rye has significantly more winter hardiness when compared to triticale and other cereal forages, allowing for a wider seeding window and improved spring survival.
- KWS Hybrid Rye is less susceptible to large swings in yield due to environmental conditions, providing more consistent yield year over year.

Variety	Seeding Rate (lbs/acre)	Average Yield MT/acre (corrected to 35% DM)	Yield % vs. Non-Hybrid Rye
KWS Hybrid Rye	80–95	5.60	125
Non-hybrid rye	100–130	4.49	100
Triticale	120	4.66	104

* Large demo plot, Ontario, 2026
 * Harvested from flag to boot stage on dryland

Disease/Pest Management



Weed Control

Hybrid Rye has 4 natural mechanisms to out-compete weeds for moisture, nutrients, and sunlight.

1. Cold Tolerance:

KWS Hybrid Rye can grow biomass at temperatures near the freezing point.

2. Extensive Root System:

It produces a wide and deep root system.

3. Rapid Stem Elongation:

It quickly moves through stem elongation to produce large above-ground biomass.

KWS Hybrid Rye can produce up to 20 tillers per plant, compared to open-pollinated rye and wheat, which only produce 4 or 5 tillers.

4. Allelopathic Properties:

KWS Hybrid Rye releases natural bio-chemicals.

Herbicide Weed Control “Spray Early, Spray Small”

In most situations a herbicide application is not necessary for KWS Hybrid Rye, In the event that a herbicide application is required it is recommended to spray early, before stem elongation when the weeds are small but actively growing. Avoid letting weeds grow too big, as they become harder to control and have already competed for nutrients, water, and sunlight. Contact your local KWS Territory Manager with any questions.



Heavy root growth helps KWS Hybrid Rye lessen weed pressure in the field



IMPORTANT:

KWS advises to always read and follow product labels. All applications and safety precautions should be made according to the use label directions. KWS Cereals and its affiliates, distributors and employees disclaim any liability and responsibility in connection with these estimates and projections.



Common Pests/Diseases

True Armyworms

To minimize the risk of true armyworm feeding, observe the field in spring, checking for plants with missing heads. If larvae counts are greater than 2/ft², apply a registered foliar insecticide in the evening while they are actively feeding.

Fusarium Head Blight (FHB)

KWS Hybrid Rye has strong tolerance to FHB, maintaining yield despite infection. FHB affects major small grains like wheat, barley, and rye. No cultivar is completely resistant.

Yield losses occur due to floret sterility, shrunken kernels, and lower test weight. FHB thrives in 90%+ humidity and temperatures between 16-27°C during flowering. Early infections produce airborne spores, leading to secondary infections. Severe losses happen with ample inoculum, dampness, and high humidity during flowering and kernel formation.

Symptoms include bleached sections of the head and brown/purple streaking on the stem. Infected kernels are shriveled and off-color.

Control measures:

- Use effective fungicides during flowering (Zadoks 10.5.1 to 10.5.4).
- Implement crop rotation with non-host broadleaf crops.
- Practice tillage to bury residue and reduce inoculum.
- Adjust the combine at harvest to remove lightweight FHB kernels.

Snow Mold

Snow mold is most easily identified after snowmelt, particularly in winter cereals such as rye. It develops under conditions of high humidity and near-freezing temperatures. Fields covered by snow on non-frozen soil for extended periods are especially prone to infection.

Affected rye stands often show large, scattered, oval-shaped patches. Living and dead plants lie flattened to the ground, covered in a whitish to pink fungal mycelium. Leaves may appear rotten and necrotic. If the crown is infected, the entire plant may die. However, if the crown remains healthy, the crop can recover—even after extensive leaf damage.

Control Measures:

To reduce the risk and severity of snow mold, the following agronomic practices are recommended:

- **Residue Management**
Incorporate harvest residues of cereals and grasses into the soil. If there are volunteer plants of the previous crop, pre- or post-emergent weed control should be made.
- **Crop Rotation**
Avoid cereal-after-cereal or cereal-after-grass rotations in high-risk areas.



Fall armyworm feeding damage. Photo by James Morris, Ohio State University Extension.



FHB in open pollinated rye. Photo courtesy of Carolyn King, 2018, Alberta Seed Guide



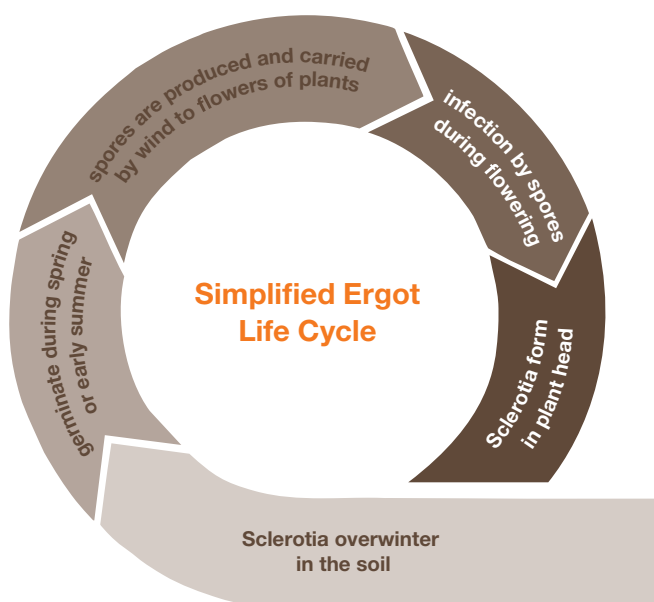
Snow mold in rye. Photo courtesy of Ryan Higginbotham.



What is Ergot?

Ergot is a group of fungi that affects approximately 600 plant species worldwide, primarily cereal grains like rye, wheat, and barley.

- Open-pollinated cereals (like rye) and grasses are most affected because ergot spores can easily gain access to the flowering head.
- *Claviceps purpurea* is the primary ergot fungus affecting rye and grasses, producing the characteristic dark purple sclerotia linked to ergot contamination.
- Ergot thrives in conditions where cold winters are followed by wet springs.
- The ergot sclerotia produce several alkaloids that vary in their toxic levels, but cause ergotism when humans and animals consume them.
 - **Moderate levels** can cause reduced growth, lower milk production, and decreased reproductive rates.
 - **High levels** can result in hallucinations, convulsions, gangrene, and limb loss.





KWS Hybrid Rye: A Management Tool for Herbicide-Resistant Weeds

Reduce weed pressure, protect herbicide tools, and improve profitability.

KWS hybrid rye is a beneficial rotation tool. When established properly, it changes the weed dynamic in your field by reducing weed establishment, growth, and long-term seed return.

KWS Hybrid Rye delivers:

- Industry-leading cereal yields
- Strong early-season vigor
- Unique biochemical weed suppression
- Most importantly, it helps shrink the weed seed bank, not just manage escapes.

“

Hybrid rye is amazing for weed suppression, especially against hard-to-control weeds like kochia and wild oats.

We have some customers putting rye in early so it can tiller in the fall on their most troublesome fields—and they're seeing great success.

— Greg Stamp, Stamp Seeds (Enchant, AB)

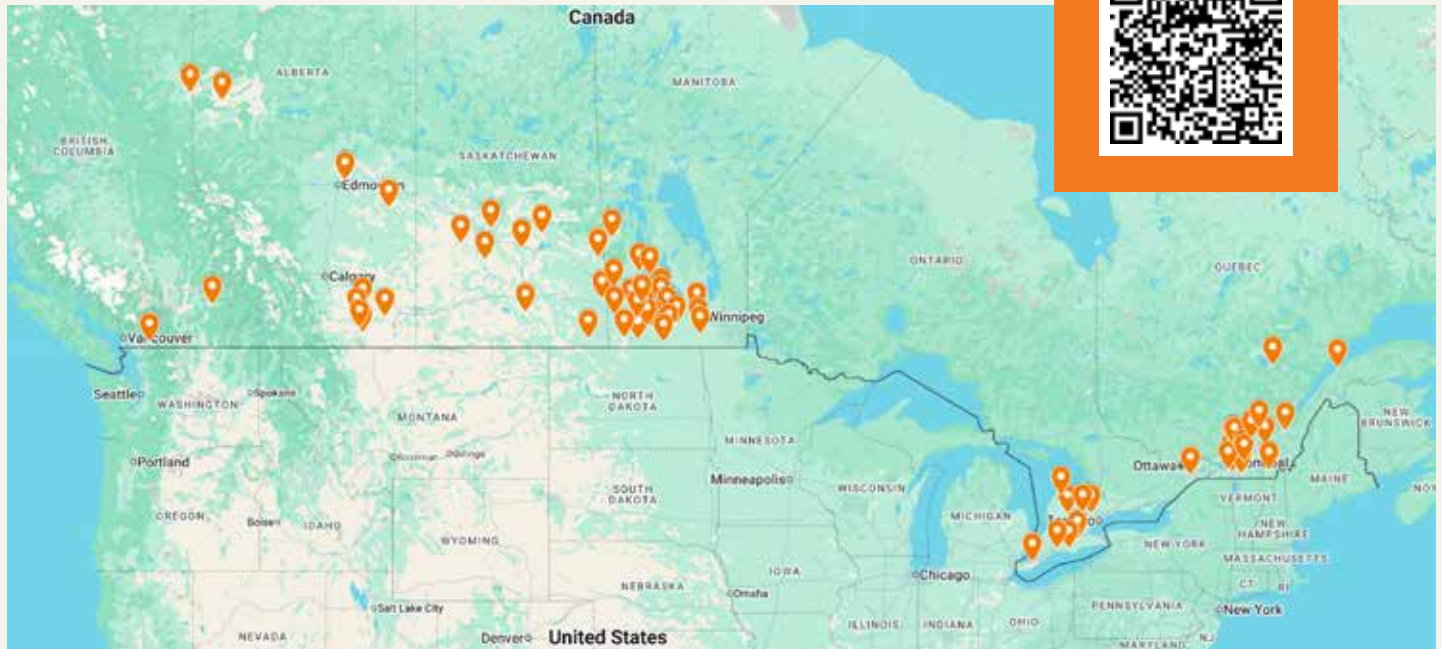


Watch our video
with In-field advice
on herbicide applications



The most effective way to slow herbicide resistance is to spray less — and hybrid rye helps you do exactly that.

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Use the map and detailed list of distributor locations
found at www.kws.com/ca or by scanning the QR code.

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