



**SPRING
VARIETY GUIDE
2021/22**





Growing cereals in the UK continues to face many challenges, each year bringing a different combination. This year sees a focus on increased disease concerns regarding *Septoria* in particular, as well as the rapid increase in price of key nutrient inputs. Whilst current cereal commodity prices are high, focus should always be on the sustainable use of inputs to manage pest and disease pressure.

Our aim at Syngenta is to continue to give trusted information about our seeds. We provide accurate advice and information about where to grow them, as well as where not to, in order to help farmers get the best result possible. We are also proud of the fact that we provide this advice throughout the growing season and not just at the point of variety decision making.

This guide is a good example of this and is filled with great agronomic advice to help farmers use our genetics to their full potential.

We always appreciate feedback, whether positive or negative, so please tell us what you think of the information within. We hope you find the guide useful.



JAMES TAYLOR-ALFORD
SYNGENTA, HEAD OF SEEDS
UK & IRELAND

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**ASK US A QUESTION OR GIVE US
FEEDBACK, WE WOULD LIKE TO
HEAR FROM YOU.**

We hope this guide provides you with useful information on the best variety for your farm and how to maximise its potential. If you have a question for one of our experts, you can email us:

? CUSTOMER.SERVICES@SYNGENTA.COM



GROWING FOR END MARKETS

WHY CHOOSE SPRING BARLEY?

Spring barley is the second largest arable crop in the UK. The majority of spring barley grown in the UK goes into the malting chain. We have come through some of the uncertainty around Covid and malt usage and look forward to a good year in terms of spring barley demand. This strong demand means that malting premiums are again looking favourable for harvest 2022, ensuring a positive position for spring barley growers planning to drill this spring.

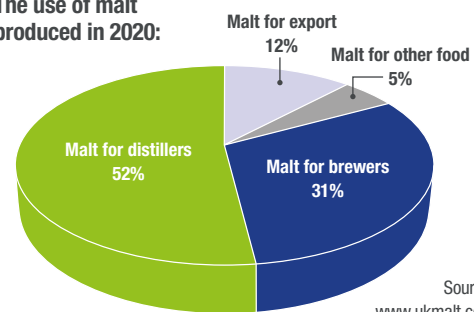


One of the key things when looking at varieties is consistency and the ability to meet specifications. We have had several very different, and in some ways difficult years for spring barley growers. Recent weather patterns have brought challenges not just for winter drilled crops, but for spring drilled crops too. It is clear that some spring barley varieties are more resilient and consistent under changing conditions. Growers should look for this security when selecting which variety and in some cases, which market to grow for. Your location within the UK will be a big driver for your variety and market choice, but some growers have the choice of which market to grow for. Malt distilling is the largest market for spring barley and used to be focused in the North. Recently we have seen significant volumes being grown and used in England too, alongside the traditional brewing volumes, and export volumes too.

Spring barley crops may not yield as high as winter crops, but for many growers, spring barley can be the most profitable crop on farm.

Syngenta have been breeding barley varieties for 40 years and can offer expert advice to help you get the best from your crop.

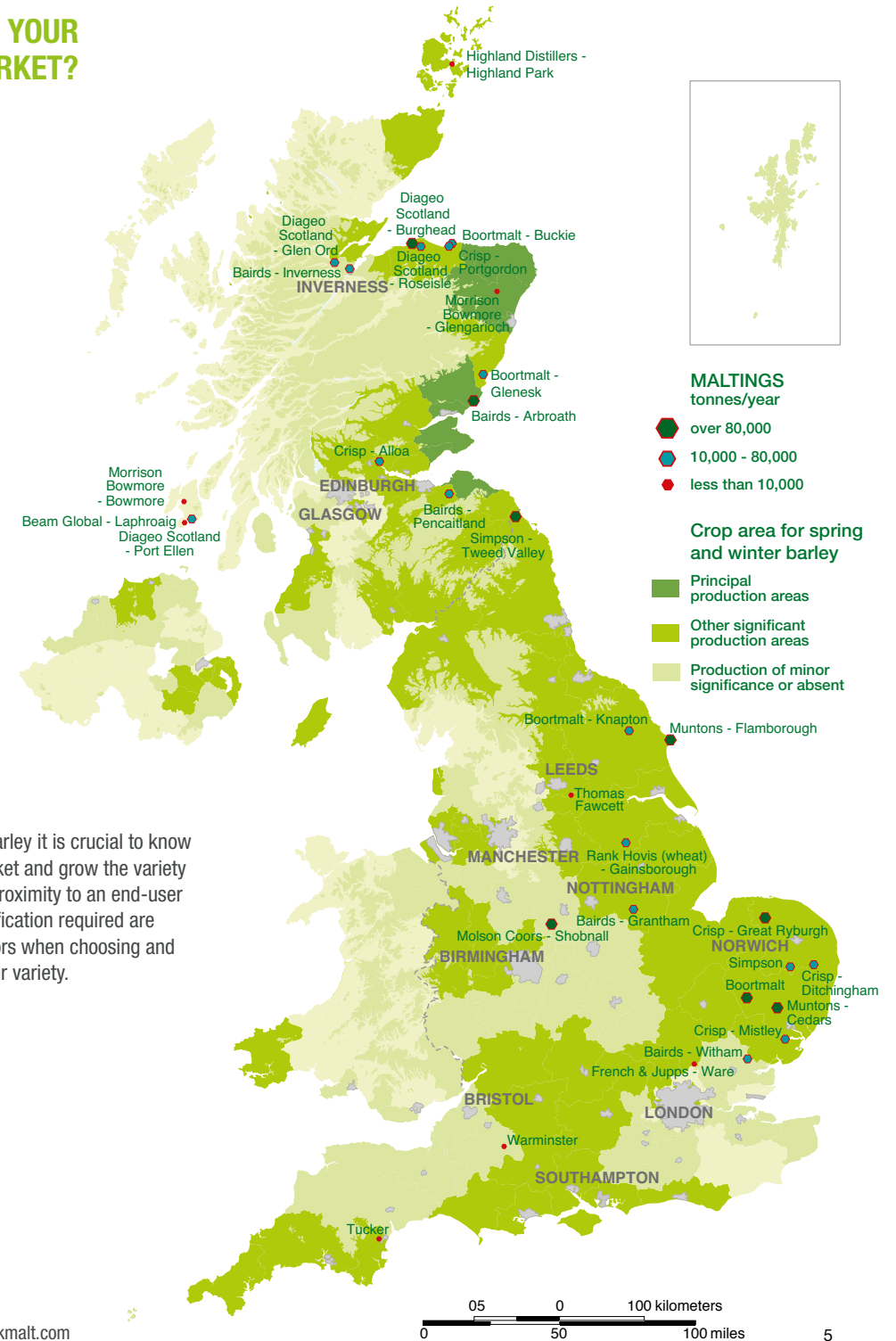
The use of malt produced in 2020:



Source: www.ukmalt.com

Choosing a dual purpose variety (one that is approved for both brewing and malt distilling) gives growers choice on which market to grow for, and may open up more marketing opportunities.

WHAT IS YOUR END MARKET?



With spring barley it is crucial to know your end market and grow the variety accordingly. Proximity to an end-user and the specification required are both key factors when choosing and managing your variety.

Source: www.ukmalt.com



GROWING FOR END MARKETS

WHAT IS YOUR END MARKET?

With spring barley it is critical to know your end market and grow the variety accordingly. The table below highlights the key considerations for each end market.

	BREWING USE	MALT DISTILLING	GRAIN DISTILLING	FEED
What's it for?				
How big is this market?	382,500 ha	235,500 ha	10,000 ha	120,000 ha
Main geographic region	UK (mainly England)	Northern England and Scotland	Scotland	West and North of UK
What do end markets need?	1.6-1.75% N (up to 1.8% N for export) 94% screenings over a 2.25 mm sieve (England)	1.5-1.65% N Non-GN 90% screenings over a 2.5 mm sieve (Scotland)	Over 1.85% N Non-GN 90% screenings over a 2.5 mm sieve (Scotland)	High yield with good specific weight
Nitrogen programme to achieve this	2 splits Nitrogen	Lower total Nitrogen, 1 to 2 splits	High total Nitrogen, later applications	Normal practice following RB209
Syngenta Varieties with Full Market Approval	LAUREATE	LAUREATE	FAIRING	WAGGON SCHOLAR
Syngenta Varieties with Provisional MBC Approval	SY TUNGSTEN SY SPLENDOR	SY TUNGSTEN		

AN OVERVIEW OF OUR SPRING BARLEY VARIETIES



Very high yielding spring malting barley with FULL MBC Approval for brewing and malt distilling. **LAUREATE** has an excellent overall agronomic package with strong maltster support.



FULL MBC Approval for grain distilling, with contracts available in this market. Very early ripening and excellent *Rhynchosporium* resistance makes **FAIRING** ideal for both the Scottish and English grain distilling markets.



Recommended in 2020 for the brewing and malt distilling market. Provisionally MBC Approved for both markets, **SY TUNGSTEN** brings both yield and quality to the UK.



Recommended in 2020 and Provisionally MBC Approved for the brewing market, **SY SPLENDOR** brings high yields and quality to the brewing and feed market.



Tried and trusted spring barley. **PROPINO** no longer has MBC Approval, but remains a variety that has popularity on farm, and may be accepted for brewing by individual maltsters (check with maltsters before growing).



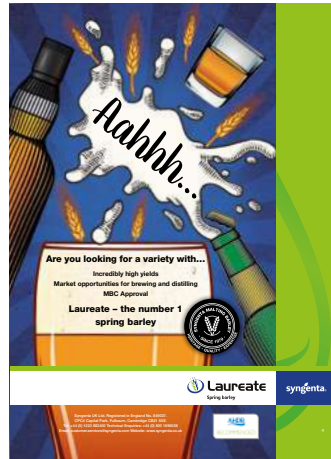
A spring feed barley with consistent yield performance, stiff straw and very high specific weight, **SCHOLAR** is a very good option for the feed market.



A popular spring malting barley variety in Scotland, due to its excellent straw strength, straw yield and very early maturity. **WAGGON** remains a firm favourite.



GROWING FOR END MARKETS



VARIETY DESCRIPTION

LAUREATE is a non-GM variety with Full MBC Approval for brewing and malt distilling. It is high yielding with an excellent disease and agronomic profile.



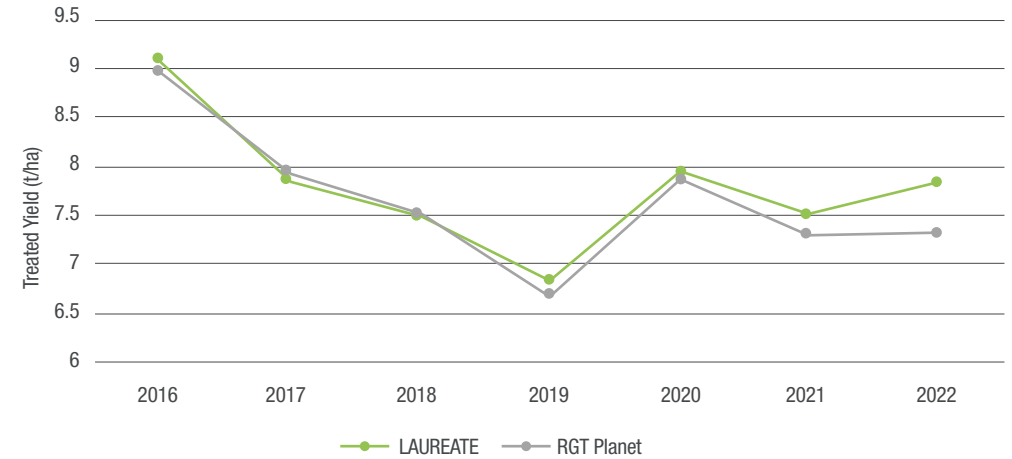
	LAUREATE	RGT PLANET	LG DIABLO
MALTING BARLEY APPROVAL	Full for Brewing Full for Malt Distilling	Full for Brewing	Full for Brewing Full for Malt Distilling
% TREATED CONTROLS	102.1	98.6	102.2
SPECIFIC WEIGHT (KG/HL)	66.6	68.0	67.1
RESISTANCE TO LODGING (NO PGR)	6	7	7
RIPENING	+1	0	+2
BROWN RUST	5	5	5
RHYNCHOSPORIUM	5	5	5

Source: AHDB Recommended List 2022

One reason for the growing popularity of LAUREATE is its consistency both on farm and through the maltings.

Since joining the AHDB Recommended List in 2016, LAUREATE has continued to yield competitively, while some of its main rivals of a similar age have started to decline and now yield below LAUREATE in official trials:

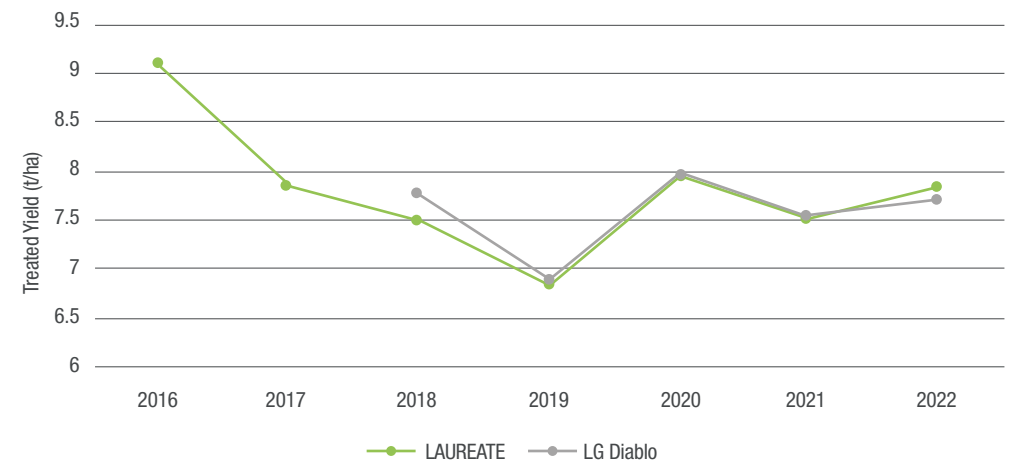
LAUREATE SHOWS SIGNIFICANTLY BETTER CONSISTENCY THAN RGT PLANET OVER THE PAST 7 YEARS



Source: AHDB Recommended Lists 2016, 2017, 2018, 2019, 2020, 2021, 2022

LAUREATE has a strong consistent yield each year, so it still competes favourably with newer varieties in both brewing and malt distilling sectors.

LAUREATE ALSO SHOWS FAVOURABLE YIELDS IN THE DISTILLING SECTOR AND IN THE NEW RL SHOWS SIMILAR PERFORMANCE TO LG DIABLO



Source: AHDB Recommended Lists 2016, 2017, 2018, 2019, 2020, 2021, 2022



GROWING FOR END MARKETS



LAUREATE REMAINS A FAVOURITE FOR BOTH END MARKETS

- Strong support from end-users with multiple contracts available for both brewing and malt distilling.
- Many maltsters will only take an MBC Approved variety. Check with your local contracts to see which variety they require for the coming growing season.
- Later applications of nitrogen will increase the final % N within the grain.
- Higher yielding varieties have a natural dilution effect, so high yields will decrease % grain N.

LAUREATE can be grown for both brewing and malt distilling, but these two markets require a different % grain N in order to make either beer or whisky. It is important to know which market your grain is going to, so you can tailor your nitrogen inputs and achieve the right specification for the market you are growing for.

DID YOU KNOW?

Syngenta have been carrying out nitrogen rate trials for over 5 years on LAUREATE.

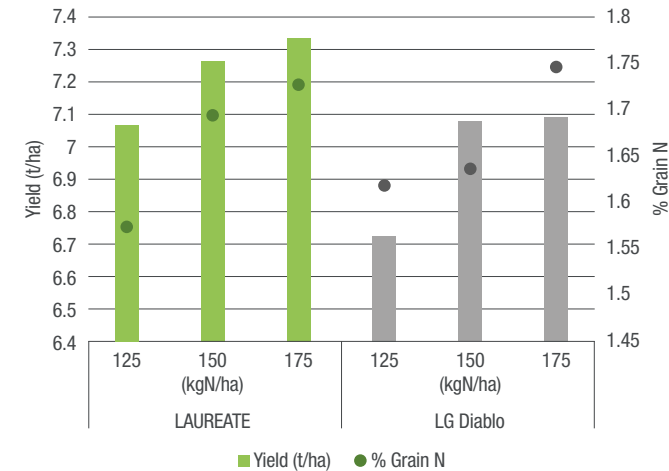
Results have shown a consistent pattern despite very different seasons.

- Increasing total nitrogen applied increases yield, but it levels off with high rates.
- High total rate of nitrogen applied has the biggest impact on % Grain N.



LAUREATE FOR BREWING

- Aim for a % grain N of 1.6-1.75%.
- 2 splits of nitrogen will help achieve higher % N.

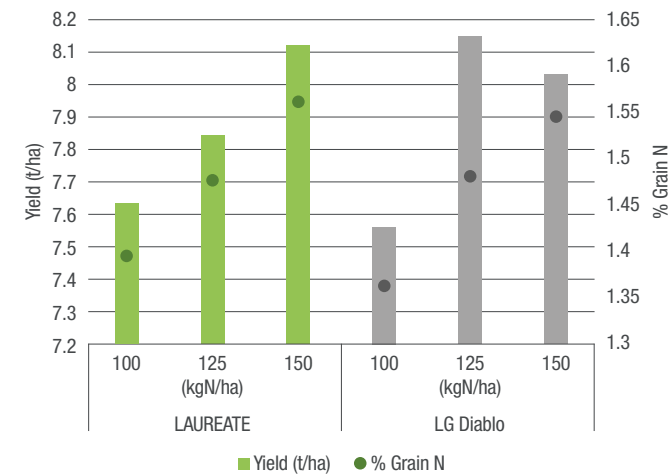


Source: Syngenta N trials England 2019-21 mean (9 trials for yield, 7 trials for % Grain N)



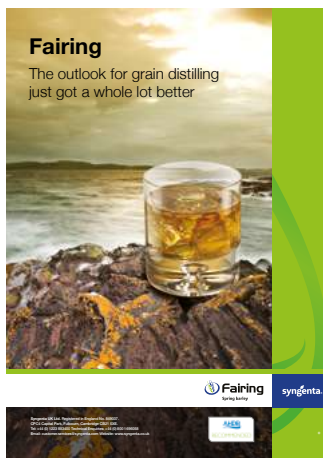
LAUREATE FOR MALT DISTILLING

- Aim for a % grain N of below 1.65%.
- 100% application of nitrogen in the seedbed will help keep the nitrogen lower.



Source: Syngenta N trials Scotland 2019-21 mean (8 trials)





VARIETY DESCRIPTION

FAIRING is the only spring malting barley with Full MBC Approval for grain distilling. Unlike other varieties FAIRING was specifically bred for the grain distilling market and contracts are available in both Scotland and some areas of England this year.

KEY FACTS

- Earliest maturing variety on the AHDB Recommended List.
- The highest resistance rating to *Rhynchosporium* available.
- Delivers very high nitrogen.

	FAIRING
MALTING BARLEY APPROVAL	Full for Grain Distilling
% TREATED CONTROLS	92.5
SPECIFIC WEIGHT (KG/HL)	68.1
RESISTANCE TO LODGING (NO PGR)	8
RIPENING	-2
MILDEW	8
RHYNCHOSPORIUM	8



Source: AHDB Recommended List 2022



END MARKETS

FAIRING is not as high yielding as LAUREATE but grows especially well in Scotland and areas of England where grain distilling contracts are available. It delivers very high nitrogen which helps it to meet the grain distilling contract specifications (typically above 1.85% N). It also has a very high specific weight. FAIRING has contracts available for harvest 2022, check locally.



DID YOU KNOW?

FAIRING has been the earliest maturing variety on the RL ever since it was Recommended. This early maturity is key in areas of Scotland to enable timely harvest before wet weather prevents combining and starts to impact quality.

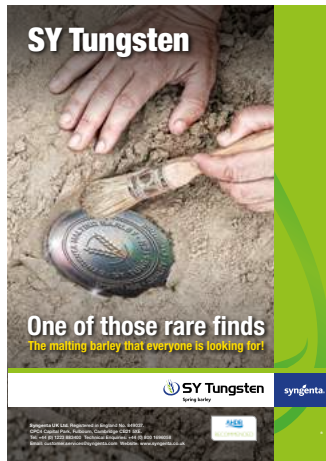
VARIETY MATURITY RATINGS

	2016	2017	2018	2019	2020	2021	2022
MALTING BARLEY							
JENSEN							1
SY BRONTE							1
SPINNER							1
CB SCORE							1
SKYWAY						1	+0
SY SPLENDOR					1	2	+1
FIREFOXX					0	1	+0
SY TUNGSTEN					1	1	+1
COSMOPOLITAN				1	0	1	
LG DIABLO			1	2	1	2	+2
RGT PLANET	-1	-1	0	0	0	0	+0
LAUREATE	0	0	1	1	1	1	+1
KWS IRINA	-1	-1	0	0			
CHANSON		-1	-1	0			
RGT ASTEROID			1	1	1		
KWS SASSY	0	0	0	1	0	1	+1
OLYMPUS	0	0	1	1			
SIENNA	0	0	1	1	1	1	
ICONIC					0	0	
PROPINO	-1	-1	-1	0	-1	0	
FAIRING	-2	-2	-2	-1	-2	-1	-2
CONCERTO	0	0	0	0	0		
FEED BARLEY							
MALVERN							1
FAIRWAY					-1	0	-1
PROSPECT					0	1	+1
CADIZ						1	+1
OVATION	0	0	0	1			
SCHOLAR	0	0	1	1			
HACKER	-1	-1	-1	0			
WAGGON	-2						

Source: AHDB Recommended Lists 2016, 2017, 2018, 2019, 2020, 2021, 2022.

SY Tungsten

Spring barley



VARIETY DESCRIPTION

SY TUNGSTEN is the new brewing and distilling variety that everyone is looking for. It has excellent quality for both quality markets and has Provisional Approval by the MBC for both brewing and malt distilling. As well as this it has outstanding yield and moderate maturity, similar to LAUREATE and earlier than LG Diablo. It also brings an improvement in straw strength.

KEY FACTS

- Very high yields - the highest yielding dual purpose variety.
- High quality with potential for both brewing and malt distilling.
- Excellent specific weight.
- Stiff straw and moderate maturity.

	SY TUNGSTEN	LAUREATE	LG DIABLO
MALTING BARLEY APPROVAL	Provisional for Brewing and Malt Distilling	Full for Brewing and Malt Distilling	Full for Brewing and Malt Distilling
% TREATED CONTROLS	102.6	102.1	102.2
SPECIFIC WEIGHT (KG/HL)	67.7	66.1	67.1
RESISTANCE TO LODGING (NO PGR)	7	6	7
RIPENING	+1	+1	+2
BROWN RUST	4	5	5
MILDEW	8	9	9

Source: AHDB Recommended List 2022

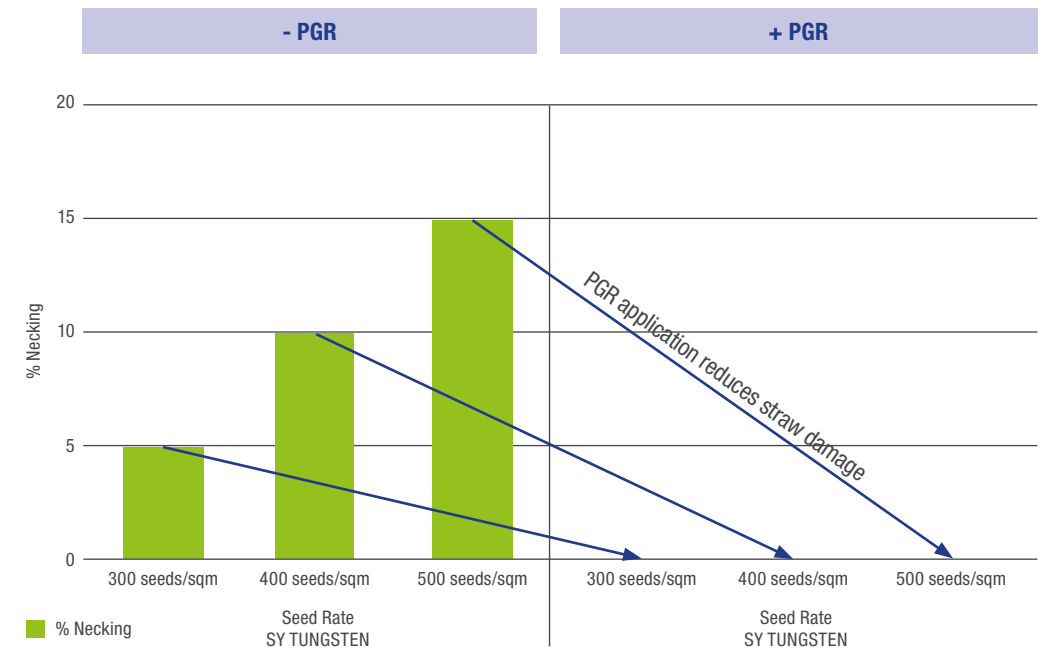


AGRONOMICS

SY TUNGSTEN responds incredibly well to a PGR programme. In Syngenta trials a programme of MODDUS® + chlormequat reduced lodging levels to zero.

On high yield potential sites, or those with a history of spring barley lodging, we would recommend a PGR is used to ensure that the quality of the grain is secure.

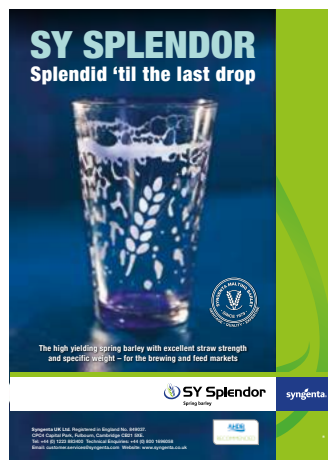
SY TUNGSTEN RESPONDS WELL TO PGR APPLICATION



Source: Syngenta spring barley agronomy trials harvest 2019 (mean 3 sites)

SY Splendor

Spring barley



VARIETY DESCRIPTION

SY SPlendor is a high yielding brewing variety. It has consistently high yields over all regions of the UK and brings a step forward in yield over the current brew varieties. It has stiff straw and good agronomics. **SY SPlendor** has Provisional Approval by the MBC for the brewing market and will be evaluated by end-users from harvest 2021.

KEY FACTS

- Very high yielding spring barley variety.
- Excellent grain characteristics with very high specific weight and very good brewing quality.
- Stiff straw with a good agronomic package.

RECOMMENDED 2020/2021

	SY SPlendor	RGT Planet
MALTING BARLEY APPROVAL	Provisional for Brewing	Full for Brewing
% TREATED CONTROLS	102.0	98.6
SPECIFIC WEIGHT (KG/HL)	68.1	68.0
RESISTANCE TO LODGING (NO PGR)	7	7
RIPENING	+1	0
BROWN RUST	3	5
RHYNCHOSPORIUM	[4]	5

Source: AHDB Recommended List 2022

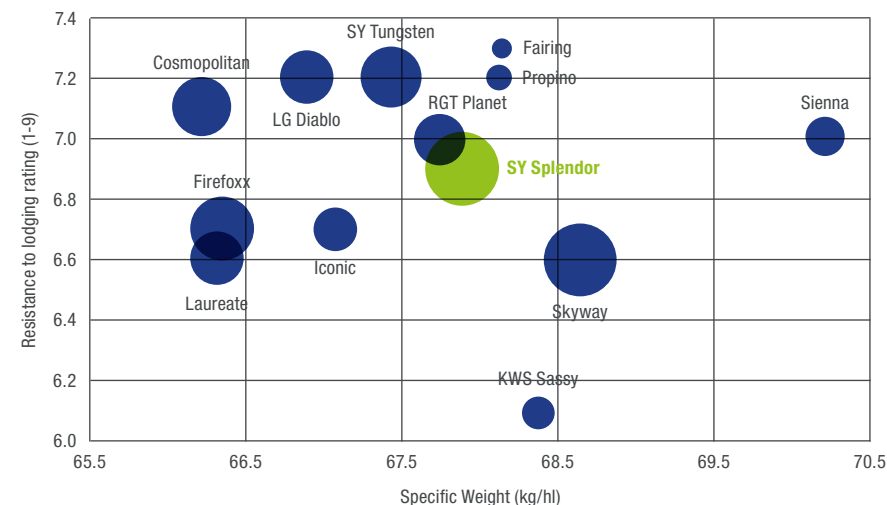


EXCELLENT GRAIN QUALITY

Spring barley is an excellent option in the rotation for suppressing grass weeds and reducing seed return for following crops. Barley is more competitive than wheat against grass weeds due to its very high tillering capability, which helps to smother unwanted weeds and block out sunlight to the bottom of the canopy. SY SPlendor has a fantastic combination of agronomic features which makes it a secure variety whether growing in a situation with grass weeds or without.

- Stiff straw with high lodging and brackling ratings, give it extra strength to withstand a high weed density.
- High specific weight protects grain quality from nutrient competition with weeds.
- Very good yield potential and Provisional Approval for Brewing may open more market options in 2022.

SY SPlendor SHOWS AN OUTSTANDING COMBINATION OF YIELD, SPECIFIC WEIGHT AND LODGING RESISTANCE



Source: AHDB RL 2021 (Varieties with malt claims only. Bubble size is ranked yield)

FEED SPRING BARLEY

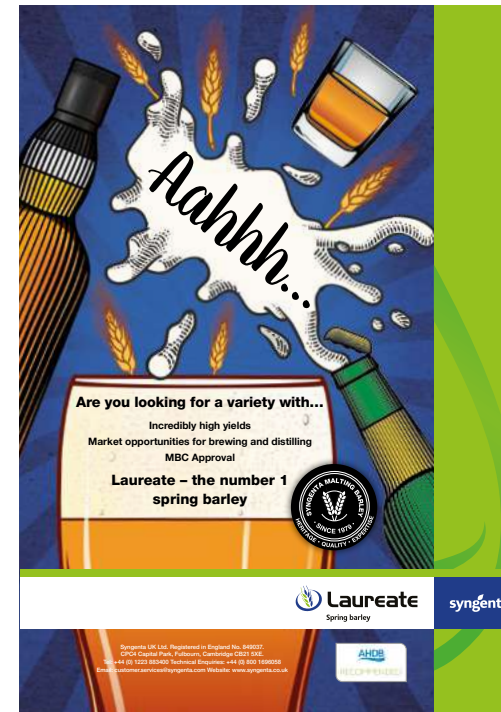
Although only 20% of the spring barley market is for pure feed, it remains a popular choice for growers that have livestock to feed, where the grain and the straw remain equally important.

SCHOLAR is a popular feed variety and delivers a good combination of yield, straw strength and a very high specific weight. It has a strong overall disease profile with very high resistance to *Ramularia* and a very high untreated yield.

WAGGON is the favourite feed variety for Scotland. WAGGON is no longer on the Recommended List but remains popular due to its very early maturity (-2) and large quantity of straw.

SPRING BARLEY THAT IS NO LONGER MBC APPROVED

Spring barleys that had MBC Approval are removed from the MBC List when they are outclassed. This does not mean that they will not be purchased by maltsters, but you will need to check with your local maltster or merchant before drilling these. The long standing malting variety **PROPINO** now falls into this category. Some **PROPINO** may also be sold into the export market or as feed.



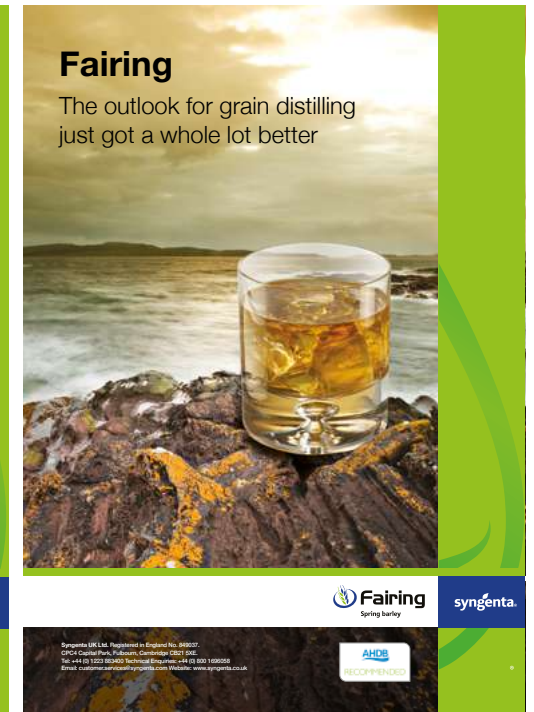
Are you looking for a variety with...
Incredibly high yields
Market opportunities for brewing and distilling
MBC Approval
**Laureate – the number 1
spring barley**

Laureate
Spring barley

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Email: customer.service@syngenta.com Website: www.syngenta.co.uk

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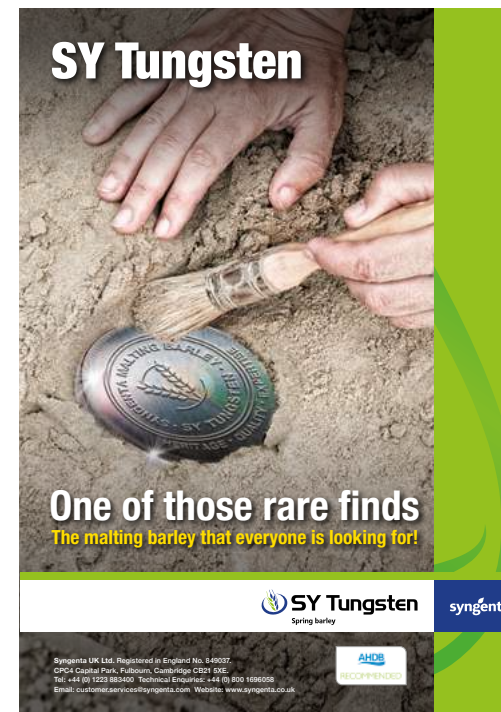
Fairing
The outlook for grain distilling
just got a whole lot better

Fairing
Spring barley

syngenta.

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SY Tungsten

One of those rare finds
The malting barley that everyone is looking for!

SY Tungsten
Spring barley

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SY SPLENDOR
Splendid 'til the last drop

The high yielding spring barley with excellent straw strength
and specific weight – for the brewing and feed markets

SY Splendor
Spring barley

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AHDB
RECOMMENDED



HOW TO GET THE MOST FROM YOUR SPRING BARLEY



ESTABLISHMENT

Selecting the correct seed rate for your chosen variety is key to optimal establishment. Syngenta recommend the following seed rates depending on variety and drilling date. The target plant population once established is around 300-325 plants/m².

SEED RATE (SEEDS/M²)

	DECEMBER	JANUARY – FEBRUARY	MARCH +
LAUREATE	325	350 (400 Scotland)	350-375 (425-450 Scotland)
FAIRING	325	350 (375 Scotland)	350-400 (400-425 Scotland)
SY TUNGSTEN	325	350 (425 Scotland)	350-375 (450-475 Scotland)
SY SPLENDOR	325	350 (425 Scotland)	350-375 (450-475 Scotland)
PROPINO	325	325 (350 Scotland)	350-375 (375-400 Scotland)
SCHOLAR	325	350 (400 Scotland)	350-375 (425-450 Scotland)
WAGGON	325	350 (400 Scotland)	350-375 (425-450 Scotland)

To give your spring barley the best start, a seed dressing will protect against seed and soil-borne diseases. VIBRANCE® Duo is now approved on malting barley, and will provide excellent rooting and establishment benefits as well as disease control.

**See the Seedcare section
for more information**

HOW TO GET THE MOST FROM YOUR SPRING BARLEY



CANOPY MANAGEMENT

In order to maximise the potential of your spring barley it is important to keep green leaf area for as long as possible to maximise photosynthesis and build yield.

ELATUS® Era is approved for use on malting barley and is exceptional at controlling brown rust, the most prevalent barley disease of recent years.

Ramularia is becoming increasingly important as resistance to fungicides is increasing. Multi-site fungicides such as folpet will bring a level of control against *Ramularia*.

Some of the new high yielding spring barley varieties are more susceptible to lodging. Syngenta trials have found that height reduction is the key to keeping the crop standing. In high risk situations the use of a PGR is recommended to secure grain quality.



HOW TO GET THE MOST FROM YOUR SPRING MALTING BARLEY



BREWING

Grain N target: 1.6-1.75% for domestic use and over 1.8% for export

Syngenta trials have shown **LAUREATE** has an increasing yield response up to 150 kg N/ha total dose without impacting % grain N in England.

Suggested application timings - 2 doses to be applied by GS15.

For export, higher total dose and later timings may help to achieve the higher grain N, **PROPINO** has an innately higher grain N which suits the export market.



MALT DISTILLING

Grain N target: 1.65% and below

Syngenta trials have shown total N from 100-125 kg N/ha increased yield without adversely affecting % grain N in **LAUREATE**.

Suggested application timings - either applied 100% in the seedbed or as a split dose applied before GS15.



GRAIN DISTILLING

Grain N target: 1.85% and above

Specialist varieties for grain distilling contain very high levels of enzymes to convert starch into sugar during the fermentation process. These varieties are in general lower yielding, but have higher innate grain N than the brewing and malt distilling varieties.

FAIRING has consistently seen improving yields when increasing N up to a total dose of 150 kg N/ha, after this yield tends to plateau. However % grain N continues to increase up to a total N dose of 200 kg/ha.

Suggested application timings - 2 doses to be applied by GS21.

HOW TO GET THE MOST FROM YOUR WINTER MALTING BARLEY

Syngenta have a long standing reputation for high yielding varieties with excellent malting quality. **CRAFT**, **ELECTRUM**, **FLAGON** and **SY VESSEL** all have Full MBC Approval for Brewing.



The leading winter malting variety in the UK.



New winter malting variety bringing high yields, good quality and very early maturity to the UK.



Although no longer on the AHDB Recommended List, **FLAGON** remains a popular variety for East Anglia and was the highest purchased winter malting variety from harvest 2018.



The new non-GN winter malt that is currently under evaluation for the distilling market and offers a new option for the winter malt market.



HOW TO GET THE MOST FROM YOUR WINTER MALTING BARLEY



CRAFT has secured itself as the number one winter malting variety in the UK. It is showing significant maltster purchases and accounted for 52% of the winter barley purchased in England by maltsters from harvest 2020.

FLAGON remains popular with maltsters. It was the third highest purchased winter malt by English maltsters from harvest 2020 (accounting for 16% of winter malt purchases). There are significant contracts out for both **CRAFT** and **FLAGON** for harvest 2022.

ELECTRUM is the newest of the AHDB Recommended winter malts, and gained Full MBC Approval for Brewing in 2020. It looks to be a popular variety for maltsters and growers. Contracts are available for **ELECTRUM** for harvest 2022.

SY VESSEL is our newest winter malting barley variety. It is a non-GN winter malt with potential for use in the distilling, as well as the brewing markets. **SY VESSEL** is not on the Recommended List but contracts are available for harvest 2022, mainly for the distilling market.

	ELECTRUM	CRAFT
MALTING BARLEY APPROVAL	Full	Full
% TREATED CONTROLS	95.8	94.7
SPECIFIC WEIGHT (KG/HL)	70.0	70.1
RESISTANCE TO LODGING (NO PGR)	7	7
RIPENING	-1	0
MILDEW	6	6
RHYNCHOSPORIUM	6	6

HOW TO GET THE MOST FROM YOUR WINTER MALTING BARLEY



Most winter malting barley varieties will be aiming for a malting contract for brewing. Typically the following will be required:

- A grain nitrogen content of 1.6-1.75%
- 94% screenings over a 2.25 mm sieve

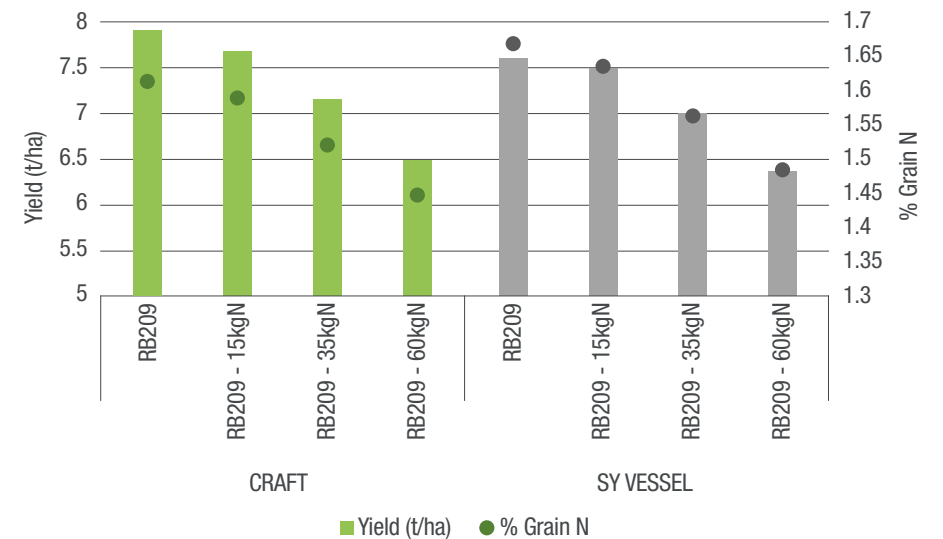
In order to achieve this, all our varieties require a similar nitrogen programme of approximately 100-120 kg N/ha applied in 2 splits, by the end of March.

This will vary depending on soil type, farm history and weather.

A limited area of winter malting barley will be aimed at the malt distilling market in 2022. This will mainly be driven by the uptake of **SY VESSEL**. Like spring barley, the target % Grain N for malt distilling will be below 1.65%.

Syngenta trials have shown that a reduction of between 15 and 35 kg total nitrogen applied will help to achieve a % Grain N of below 1.65%, whilst still achieving optimum yields.

SY VESSEL IS ABLE TO PRODUCE A RANGE OF GRAIN NITROGENS THAT FIT BOTH THE DISTILLING AND BREWING MARKETS



Source: Syngenta nitrogen trials (2 year mean 10 trials)

HOW TO GET THE MOST FROM YOUR HYBRID BARLEY

Here's a reminder of the main benefits of each hybrid barley variety:

- SY Thunderbolt**
Hyvido®
The variety with consistently high regional yields. Strong on heavy land, great grain quality and early to mature.

- SY Kingston**
Hyvido®
A strong performer for the North, West and on light land. Early maturing and great grain quality.

- SY Kingsbarn**
Hyvido®
The high-performing all-rounder. Ideal choice for all regions with great grain quality and easy to grow.

- Bazooka**
Hyvido®
Proven on farm performance. Strong track record of grass weed suppression and wet weather disease resistance.

- Belmont**
Hyvido®
Great choice in the East and strong on light land.

- Belfry**
Hyvido®
High yield, resilient and easy to manage. Robust disease and lodging profile for management flexibility.

- SY Baracooda**
Hyvido®
The high yielding variety for all regions. Good disease resistance and grass weed suppression.

- SY Armadillo**
Hyvido®
Toughen up your disease protection. Great choice for the North with exceptional *Rhynchosporium* resistance.

- SY Javelin**
Hyvido®
The high yielding hybrid barley with outstanding *Rhynchosporium* resistance.

- SY Canyon**
Hyvido®
NEW! High yielding performance combined with exceptional grain quality.

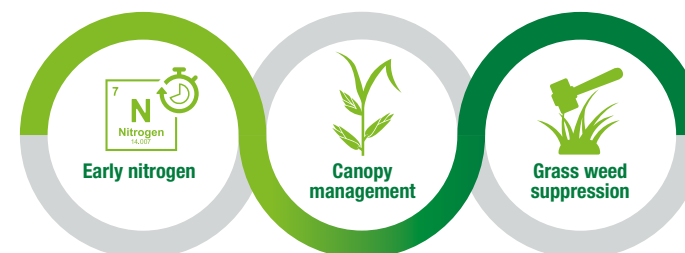
HYBRID BARLEY IS EASY TO GROW - 6 CRITICAL STEPS TO SUCCESS

Many growers have found that hybrid barley is an easy crop to grow successfully. On-farm experience over many seasons has shown that it pays to focus on six critical steps:

- 1**
GOOD AUTUMN ESTABLISHMENT
 – variety, seed rate, seed treatment, seedbed & drill timing are all key
- 2**
 Apply **AUTUMN INSECTICIDE TO CONTROL BYDV** if required
- 3**
EARLY NITROGEN IS KEY
- 4**
APPROPRIATE GROWTH REGULATION with a programmed approach
- 5**
 Use a **ROBUST** fungicide programme at T1 & T2
- 6**
OPTIMISE combine harvester set-up

HOW TO GET THE MOST FROM YOUR HYBRID BARLEY

The three key areas to focus on for a hybrid barley variety in the spring are:



NITROGEN MANAGEMENT

Get the best out of your hybrid barley crops with the following nitrogen programme:

SPLIT	TIMING	% OF TOTAL TARGET N
1	Early spring (approx. GS25) as soon as application is possible	30
2	At or just before GS31 (typically 3-4 weeks after first application)	50
3	2-3 weeks after second application	20

Consult a FACTS qualified advisor for specific advice for each field.

HOW TO GET THE MOST FROM YOUR HYBRID BARLEY



CANOPY MANAGEMENT

Once you have successfully established your hybrid barley crop, you should focus on growing the canopy and maintaining green leaf area for as long as possible. To do this, you need to ensure you optimise your PGR and fungicide timings. A PGR, such as MODDUS, will help promote rooting early on and strengthen tillers whilst limiting height to reduce the risk of brackling.

For major barley diseases such as brown rust that favour warm, humid weather, the use of ELATUS Era at T2 timing will limit the spread of infection. ELATUS Era will also control Net blotch and provides moderate control of *Rhynchosporium*. A suggested fungicide and PGR programme is given below.

FUNGICIDE AND PGR TIMINGS

TIMING	FUNGICIDE	PGR	WHY?
T0 (GS30)	KAYAK® 0.5-0.7 l/ha (plus partner if mildew or rust are established)	MODDUS 0.1-0.2 l/ha + chlormequat*	Remove overwintered disease in lush crops, protect new growth and help with rooting
T1 (GS31-32)	Triazole/SDHI/ strobe/cyprodinil	MODDUS 0.1-0.2 l/ha + chlormequat*	Keep lower leaves green, keep out disease and aid stem strengthening
T2 (GS39-59)	ELATUS Era 0.7 l/ha + folpet	Ethephon-based PGR 0.75-1.5 l/ha Do NOT apply after GS39	Drive final yield and maintain specific weight, reduce brackling

*chlormequat at ~50% dose rate. Various products and formulations exist. Rates dependent on situation. Consult a BASIS qualified advisor for specific advice for each field.



GRASS WEED MANAGEMENT: FROM SCIENCE TO FARMING

Grass weeds, and herbicide-resistant black-grass in particular, are a headache for many winter cereal growers. Fortunately hybrid barley offers a useful tool for suppressing black-grass populations, and reducing seed return, as part of an integrated approach.

Over the past few years we have shown that hybrid barley can be a key part of your strategy for managing grass weeds. This benefit, which is uniquely powered by hybrid vigour, is a common feature of all of our hybrid varieties.

HYBRID BARLEY AS A TOOL FOR MANAGING GRASS WEEDS

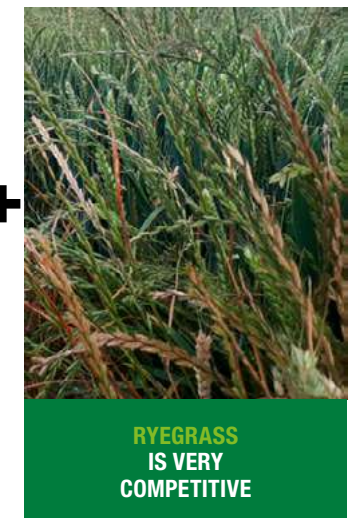
Trials have shown that hybrid barley offers better suppression of black-grass, brome and ryegrass than winter wheat and conventional 2 & 6 row barley.



**BLACK-GRASS
IS COMPETITIVE**



**BROME
IS VERY
COMPETITIVE**



**RYEGRASS
IS VERY
COMPETITIVE**

GRASS WEED SUPPRESSION: HYBRID BARLEY WORKS WELL AGAINST THE "TROUBLESOME TRIO"

HYBRID BARLEY VARIETIES OFFER MUCH MORE THAN HIGH YIELD

Hybrid barley offers a wide range of benefits in addition to consistently high yields:

GRASS WEED SUPPRESSION	STRONG ALTERNATIVE TO 2ND WHEATS
EXTRA INCOME FROM STRAW	MORE FLEXIBLE DISEASE MANAGEMENT
IDEAL ENTRY FOR WOSR	HIGH SPECIFIC WEIGHT FOR GRAIN CONTRACTS
EARLY HARVEST GIVES WORKLOAD & CASH FLOW BENEFITS	DEPENDABLE PERFORMANCE REDUCES RISK

Grass weed suppression is an added strength and hybrid barley should be an integral part of your grass weed management strategy on-farm.

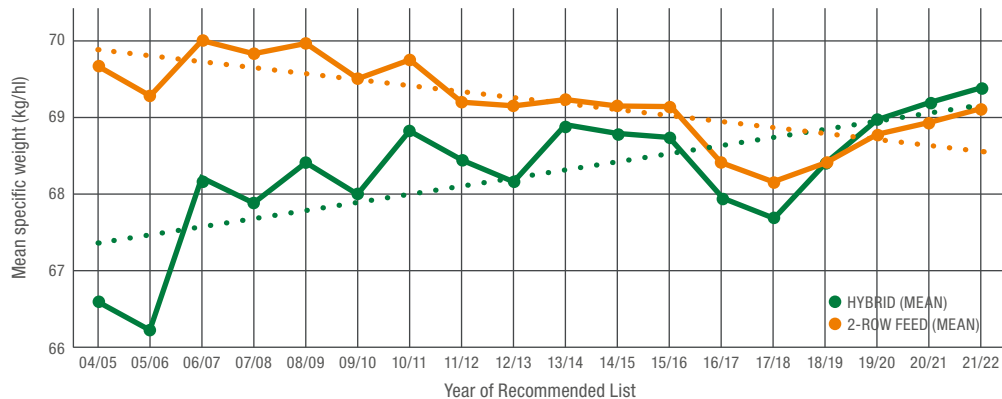
Our varieties also offer management flexibility. For example, early ripening provides an opportunity to spread workload at harvest, avoid overlap with the wheat harvest and drill following crops of winter oilseed rape. Likewise, the robust disease resistance profile of some varieties provides greater flexibility for fungicide application timings.

Barley straw is valued more highly than wheat straw. The straw from hybrid barley crops offers an extra income opportunity.

With all this in mind, many growers choose to grow hybrid barley as a great alternative to second wheats.

GRAIN QUALITY

Meanwhile, improved grain quality has been a key target for our breeding programme and the specific weight of our latest generation of hybrids is now equivalent to the two-row feed varieties.



Source: AHDB Winter Barley Recommended Lists 2004/05 to 2021/22. Data shown for hybrids vs 2-row feed varieties.

SYNGENTA WINTER WHEAT VARIETIES

Now that winter wheats are in the ground, we take a look at how to get the best out of Syngenta wheat varieties. Here is a reminder of the main features of the winter wheats from the Syngenta family:



Very high yielding hard group 4 feed combined with excellent grain quality and a strong overall disease package.



The very high yielding, adaptable and flexible variety with a very wide drilling window.



The secure, consistent feed wheat, with outstanding *Septoria tritici* resistance.



The high yielding variety that performs particularly well on light land and in second wheat situations and has the ideal growth habit for suppressing grass weeds.

Hopefully you have been able to drill your winter wheats in good time. If you are still looking to drill a winter wheat crop then GLEAM remains an option - with a latest safe sowing date of mid-February. If drilling winter wheats in January/early February then increase seed rates to ensure an adequate plant population is established.



GROWING FOR END MARKETS

HOW TO GET THE MOST FROM YOUR WINTER FEED WHEAT

Whether it's a secure option with excellent disease resistance, or an out and out yielder, Syngenta have a feed option for every situation:

HOW TO GET THE MOST FROM YOUR WINTER FEED WHEAT

Below are the key statistics for each of the winter wheat varieties from Syngenta:

KEY STATISTICS	SY INSECTOR	GLEAM	GRAHAM	SHABRAS
SEPTORIA TRITICI 3 YEAR	6.5	5.8	6.7	6.1
SEPTORIA TRITICI 1 YEAR	6.1	5.5	6.4	6.1
YELLOW RUST	5	5	7	5
BROWN RUST	5	6	5	5
RESISTANCE TO LODGING WITH PGR	7	7	8	6
RESISTANCE TO LODGING WITHOUT PGR	6	7	7	6
SPECIFIC WEIGHT (KG/HL)	78.2	76.3	76.9	75.8





HOW TO GET THE MOST FROM YOUR WINTER FEED WHEAT

GROWTH HABIT

Understanding each varieties' growth habit is key to being able to manage the crops' canopy, to maximise photosynthesis and yield.



SY INSITOR:

- Quick early development with erect growth habit
- Fast to reach GS30, but slower to reach heading
- The latest Syngenta variety to reach ripening
- Not a late maturing variety, classed as a moderate maturity of +1



GLEAM:

- Slow development over winter with a very prostrate growth habit
- Very high tillering ability with excellent tiller retention throughout the season
- Slow to reach GS30, but speeds up once stem extension is reached
- Early maturity



GRAHAM:

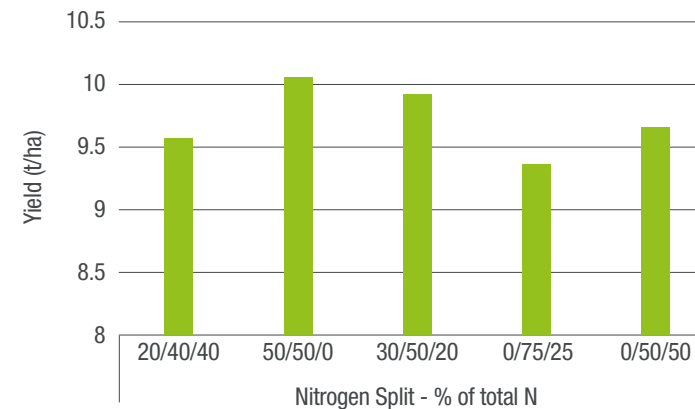
- Slow development over winter
- Prostrate growth habit with good ground cover over winter
- Slow to reach GS30
- Quickly moves through GS30-39, resulting in very early maturity



SHABRAS:

- Very quick early development
- Erect, lush growth habit, with good smothering habit for grass weeds
- Will be one of the first varieties to reach GS30
- Even gaps between main fungicide timings (3-4 weeks)

EARLY NITROGEN CRITICAL FOR MAXIMISING YIELD IN 2021



- Early nitrogen critical for driving yield in 2021
- GLEAM is a high tillering variety that responds well to early N
- 3 split programme best approach for managing unpredictable weather

APPLICATION	TIMING
1	GS25-29
2	GS30-31
3	GS33-37

HOW TO GET THE MOST FROM YOUR WINTER FEED WHEAT

YELLOW RUST

- Yellow rust is a key foliar disease to look out for throughout the season.
- Regular monitoring is recommended to check for early season disease regardless of adult plant resistance rating.



There is a difference between seedling and adult plant resistance:

As a 'seedling', wheat varieties are either classed as resistant or susceptible to yellow rust.

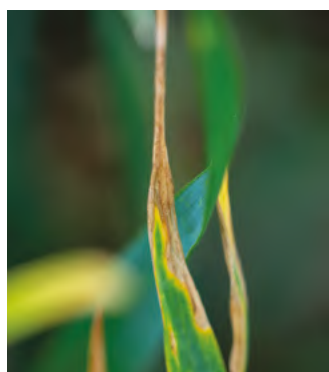
The majority of varieties on the Recommended List are susceptible to yellow rust at the seedling stage, including all of the Syngenta varieties.

As an 'adult,' wheat varieties are given a resistance rating (1-9) which can be found on the AHDB Recommended List. This differs for each variety, usually this resistance is active by GS31 but can be as late as GS39.

None of the current Syngenta winter wheat varieties have resistance to yellow rust at the seedling stage, therefore we recommend regular monitoring from planting through to April.

If yellow rust is seen, a rust active triazole should be used at T0 and T1 to control early disease before adult plant resistance is operational.

HOW TO GET THE MOST FROM YOUR WINTER FEED WHEAT

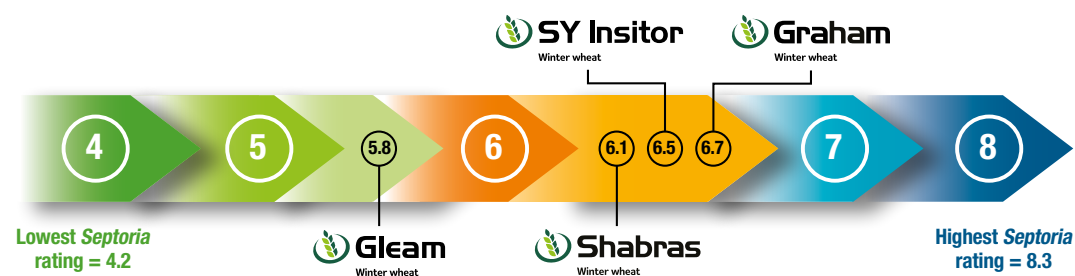


SEPTORIA TRITICI

The 2021 season showed us the importance of varietal resistance. It was the first full season without CTL and late weather conditions caused significant epidemics.

Syngenta recognise that resistance to *Septoria tritici* is incredibly important and have been breeding for high resistance to this disease for a number of years. This is still the biggest yield robbing disease of winter wheat.

Varietal resistance to *Septoria* is the first step to controlling the disease and minimising yield impact later in the season.



From the Syngenta winter wheats, GRAHAM and SY INSITOR have had consistently high resistance over a number of years to *Septoria tritici*. Having this resistance:

- Allows greater flexibility in fungicide application timings – reducing the risk when spray timings may be compromised by weather.
- Enables a robust mix of yield potential and disease resistance.
- Protects yield potential in high disease pressure years.

Septoria tritici can be seen on developing winter wheat crops through the winter, even those with high resistance to the disease. Varietal resistance can be seen later in the season as the disease progresses up the canopy. Levels of disease will depend on the location and the weather conditions in the spring.

Early control of *Septoria tritici* is important in medium and high-risk situations to slow the spread of inoculum through the canopy.

Multi-site and persistent fungicides should be used early in the programme to reduce risk of disease developing.

HOW TO GET THE MOST FROM YOUR WINTER FEED WHEAT



PESTS

Orange wheat blossom midge has been an issue in certain areas over the past few years. With cocoons staying highly viable for at least 4 years we could see issues again this coming year.

OWBM RESISTANCE

Wheat Variety	Resistance Status	Wheat Variety	Resistance Status
GLEAM	✓	SY INSITOR	✓
GRAHAM	✗	SHABRAS	✗

- Susceptible varieties will benefit from an application of HALLMARK® Zeon, when the threshold for OWBM is reached.
- For feed wheat the threshold = 1 adult in 3 ears.
- For best results spray before large number of eggs are laid.

CANOPY MANAGEMENT

As yields are pushed higher and ears get heavier, lodging is always a risk.

Each variety differs in its resistance to lodging:

GRAHAM has stiff straw with good resistance to lodging. It also shows a good response to PGRs in high risk situations.

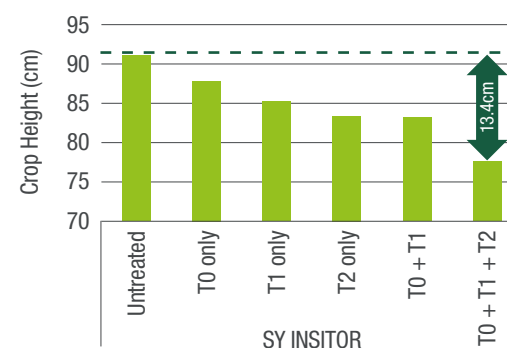
GLEAM carries a lot of tillers, but ear size is relatively small. It has strong root anchorage, and has good resistance to lodging, but again does show a response to PGRs.

SHABRAS has weaker straw than both GRAHAM and GLEAM, and will benefit from a good PGR programme. It develops quickly, so is not suitable for early drilling, and the first T0 timing will be key.

SY INSITOR is a tall variety when left untreated, but shows a very good response to PGRs in both height and lodging reduction.

Trials have shown a programmed approach to PGRs and the use of an ethephon-based T2 is most effective for managing height and risk of lodging.

SY INSITOR IS VERY RESPONSIVE TO PGRS



- SY INSITOR very responsive to PGRs.
- T2 timing has biggest impact on crop height (centre of gravity).
- Programmed approach most effective.

538 YEN trials show strong association between PGR use and increased yield.

Applying 2 PGRs vs 1 was associated with a yield increase of 1.2 t/ha.

“THE VIBRANCE EFFECT” IN SPRING CEREALS

Establishing good root structures can be particularly important in spring cereals. The past few seasons have seen extremes of weather including dry spring conditions which can lead to plant stress especially on the typically lighter soil types used for growing spring malting barley.

Establishing a strong and resilient crop is vital. Choosing the right seed treatment is not only critical for tackling seed- and soil-borne disease but also for improving establishment and rooting to maximise yield and protect quality.

SPRING BARLEY

VIBRANCE Duo has approval by the British Beer and Pub Association and Campden BRI for use on malting barley.



As well as controlling key seed and soil-borne diseases, the “Vibrance Effect” in spring barley boosts rooting and improves establishment, leading to a more resilient crop.

SPRING WHEAT

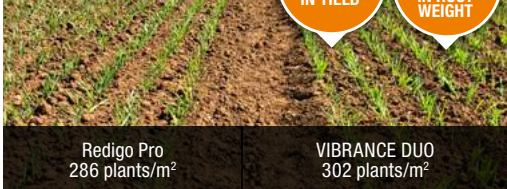
VIBRANCE Duo has approval for use on spring wheat seed. In spring wheat specifically, independent university research showed that seed treated with sedaxane (the SDHI active ingredient in VIBRANCE Duo) produced plants with greater root and shoot mass, even in the absence of disease. Improved rooting effects were also long-lasting, and still evident at ear emergence.

IMPROVED ESTABLISHMENT OF LAUREATE SPRING BARLEY HELPS TO PROTECT YIELD

Improved establishment on malting barley light land

0.7 t/ha INCREASE IN YIELD

25% INCREASE IN ROOT WEIGHT



Redigo Pro
286 plants/m²

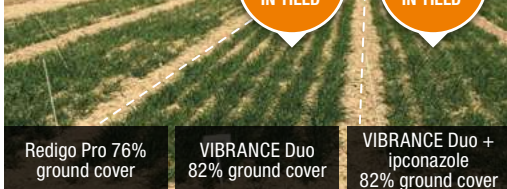
VIBRANCE DUO
302 plants/m²

Newark Innovation Centre, LAUREATE spring barley, light land drilled 3rd April 2020 and assessed 16th April 2020.

Improved establishment on heavy, grass weed land

0.2 t/ha INCREASE IN YIELD

0.2 t/ha INCREASE IN YIELD



Redigo Pro 76%
ground cover

VIBRANCE Duo
82% ground cover

VIBRANCE Duo +
ipconazole
82% ground cover

Doncaster Ryegrass Innovation Centre, LAUREATE spring barley, heavy land drilled 25th February 2019.

A STRONG ROOT STRUCTURE PROVIDES BETTER ACCESS TO NUTRIENTS AND WATER LEADING TO IMPROVED PLANT HEALTH AND VIGOUR



0.6 t/ha INCREASE IN YIELD

120% INCREASE IN ROOT WEIGHT

Redigo Pro
3.1 tillers/plant

VIBRANCE Duo
4.9 tillers/plant

Shropshire, LAUREATE spring barley, light land, drilled 23rd March 2020 and assessed 14th May 2020.



71% INCREASE IN ROOT WEIGHT

0.1 t/ha INCREASE IN YIELD

Redigo Pro

VIBRANCE Duo + ipconazole

Fife, Scotland, LAUREATE spring barley, sandy clay loam, drilled end of March 2020 and assessed 14th May 2020.

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MODDUS® (MAPP 15151) contains trinexapac-ethyl, VIBRANCE® Duo (MAPP 17838) contains fludioxonil and sedaxane, ELATUS™ Era (MAPP 17889) contains benzovindiflupyr and prothioconazole, KAYAK® (MAPP 14847) contains cyprodinil and HALLMARK ZEON® (MAPP 12629) contains lambda-cyhalothrin and are Registered Trademarks of a Syngenta Group Company. All other brand names used are Trademarks of other manufacturers in which proprietary rights may exist. Use plant protection products safely. Always read the label and product information before use. For further product information including warning phrases and symbols refer to www.syngenta.co.uk

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