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Ahead of the competition

Mastering spring barley

Tight supplies and buoyant markets aren’t the only reasons growers may opt to plant spring barley this year, it also offers more competition against grassweeds than spring wheat. *CPM* explores how nailing early season agronomy can help stamp out weeds.

By *Melanie Jenkins*

Spring barley is particularly good in grassweed situations, providing more competition against weeds such as blackgrass than spring wheat. But getting it established correctly is essential and will set it up correctly to meet a growers’ end market goals.

Spring cropping is one of the main cultural controls for blackgrass, explains Syngenta’s Kathryn Hamlen. “Blackgrass germinates more frequently in autumn, so planting spring crops allows more opportunity for stale seedbeds before drilling and reduces the number of blackgrass plants coming up in the crop.”

And when comparing it with spring wheat, spring barley tillers a lot more, so competes more above and below ground — blocking

sunlight and having a smothering effect on weeds, she adds.

But to have this competitive ability, spring barley requires good establishment, says Georgina Young of Syngenta. “If a poor crop of spring barley is established, it can actually have the opposite effect and allow blackgrass to proliferate.”

Establishment

According to Kathryn, part of nailing establishment involves selecting the right variety for the farm, field, growing situation and end market. “The highest yielding varieties are also malting varieties, but your agronomy will be different in a malting crop to one whose prime purpose is grassweed suppression. So it’s important to know your target.

“Work out what you want to achieve and then tailor seed rate and nitrogen inputs to your goal, as these can have knock-on effects on the potential for lodging, may have an impact on specific weights and screenings, as well as impacting grain N. Too much N or too high a seed rate could mean malting specs may be missed.”

If growers decide to increase seed rates or if there’s strong competition from weeds, selecting a variety with good straw strength is advised, she says.

“And think about grain quality as it’s a stable characteristic. If a variety has a high potential specific weight, its harvested specific weight should still be high, even if there are decreases from weed competition,” explains Kathryn. “But if you select a variety with low specific weight

potential, stresses will just cause it to get lower.

“Our trials indicate it’s best to look at varieties achieving 66kg/hl or above on the AHDB Recommended List. It’s a good starting point, the higher you get, the better.”

Because of its short growing period, you want it to come through the ground well, but spring barley varieties don’t have such a variation in vigour as winter barley or wheat, with most reaching stem extension at similar times, says Kathryn. “But they do vary in terms of maturity, so think about your rotation and when you want to combine it, as well as the effects of region on maturity.”

A staple variety for many is Laureate, which is a dual-purpose brewing and malting distilling variety for out and out quality, says Kathryn. ▶



Variety selection is a big part of getting establishment right, says Kathryn Hamlen.

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Mild and dry conditions this season have already seen some growers take advantage of early spring barley sowing opportunities.

▶ “Other varieties may be better suited to grassweed situations as far as straw strength and grain quality goes,” she says. “SY Splendor has the highest brackling score on the RL, with a 9, and a 7 for lodging. It has only been provisionally approved for brewing at the moment, but it could get full approval in June. It’s a nice fit as a feed variety and in blackgrass situations.”

Based on a lot of trial work Syngenta has carried out on heavy ground, Georgina suggests there are a lot of benefits to be seen from strategic use of a plough in the autumn when growers have blackgrass problems.

“Obviously, the plough is becoming less popular, but in situations where there’s a high blackgrass population, it’s a good strategy to bury the seed. Autumn ploughing prior to spring cropping means any seed brought back up will be in a stale seedbed over winter, and growers will have a nice clean start and finer tilth in the spring.”

But in drier seasons, ploughed ground can dry out quicker, so lighter cultivations are better, she says.

“Ploughing can definitely have a place as part of an overall strategy on farm, just understand your seed bank, where seeds are in the soil profile and how different cultivations can affect that.”

For those who’ve grown cover crops, work



Grassweed seed brought to the surface by ploughing in autumn can be killed using a stale seedbed before spring barley.

conducted by Syngenta has demonstrated that earlier destruction gives the best results, as it avoids them competing for moisture in a dry spring, says Georgina.

“There aren’t many herbicide options for desiccating them though and where we’ve seen species like black oats used, there can be carry over through incomplete destruction.”

However, Syngenta is currently undertaking work looking into different methods of removing cover crops ahead of spring barley.

Generally, the earlier spring barley is drilled, the higher the risks of disease, especially from net blotch and rhynchosporium, says Kathryn.

Drilling date

“Seed rates could be increased if growers expect lower establishment or if they drill later, as crops will have less time to tiller. But seed rates shouldn’t need to be increased in January and February-drilled crops unless growers are expecting poorer conditions at planting or an incoming wet period.”

Even if there are severe frosts after planting, crops may lose a couple of tillers, but only if plants are large and frosts are very hard, she adds.

Conditions earlier this year have meant many growers were keen to get going at the end of January and early February as the weather had been unseasonably dry, without a forecast cold snap, and with favourable soil conditions, says Georgina.

Though Syngenta has done trials to identify an ideal drilling date, it always depends on the weather each year, explains Kathryn. “There’s no optimum timing, as good establishment is both weather and soil dependent.”

Growers ideally want good soil moisture to drill into, says Georgina. “If conditions are continually dry, wait until rain is forecast before drilling, so you know moisture is coming.

“One thing to note with spring crops is that they’re generally more exposed to adverse spring weather. They have such a short growing period, it means getting roots down is important,” she adds.

In a standard drilling situation, aim to get a plant population of 300-320 seeds/m², says Kathryn. “The earlier you drill, the more chance there is of plants tillering really well. So start by drilling 325-350 seeds/m² to achieve optimum populations, and then later in the season this can be increased to 400 seeds/m².

“In Scotland, generally go higher at around 375 seeds/m², as the season



Axial Pro has approval for use on wild oats in spring barley.

generally starts later for drilling,” she adds.

“Growers will tailor this to what they know about their soil and growing conditions. And there are variations between varieties, with some tillering less — in this case, increase the rate to get more ears.

“If straw strength is weaker, don’t increase the seed rate as this’ll increase the lodging risk,” warns Kathryn.

Nutrition will be very dependent on soil type, end market and weather conditions. “If growers want to put on a high amount, the recommendation is to split 50% in the seed bed and 50% after,” she explains. “For those on low N contracts, which will be most Scottish growers aiming for malt distilling, then it’ll be 100% in the seed bed.

“For blackgrass situations, getting some N on early will help get the crop off to a good start,” adds Kathryn.

As with all other aspects of crop management, the weather impacts PGR applications. “It’s very important to think about weather conditions and adapt your PGR programme to it,” says Georgina.

“We’ve seen benefits in applying 0.1-0.2 l/ha of Moddus (trinexapac-ethyl)



Pre-emergence herbicides can give a clean start for spring barley emergence.

at GS30-32 and follow with ethephon at GS37-39. This is a fairly robust programme and if we do have drought or stress conditions, then it'll want to be tailored and probably wound back. Drought acts as a natural PGR.

"Getting on an application earlier helps mitigate the risk of not being able to get any onto the crop later, as the second application is easy to miss as crops race through the growth stages in the spring, so it's worth doing while conditions allow," she adds.

When considering fungicide programmes, there's a range of different options to adapt to the season and varietal susceptibility, says Georgina. "In a high disease season, a two-spray approach is recommended, starting at GS30 and then following later at GS45-55."

Looking at weed control, pre-emergence herbicides are becoming more popular in spring barley, especially where there are heavy grassweed burdens, she explains. "In heavy grassweed situations, think about timings and soil conditions as moisture is key for a pre-em to be effective, but there's not a huge number of products available."

Defy (prosulfocarb) has an EAMU for use on spring barley, so can be used at grower's own risk. It can be useful in mixture where there's blackgrass, ryegrass and annual meadow grass, but ideally blackgrass will have been dealt with beforehand (using stale seedbeds).

When the crop is developing, it's worth thinking about broadleaf weeds, wild oats and ryegrass, says Georgina. "Axial Pro (pinoxaden) is approved for use against wild oats and ryegrass and is effective on plants which remain susceptible to this type of ACCase inhibitor chemistry. It's also been shown to be effective where there's been incomplete destruction of black oats in the preceding cover crop.

"The key take home message is that it's



Be aware of the end market for spring barley when making grassweed agronomy decisions.

much easier to control small grassweeds — so early applications are better," she advises. "The rate of Axial Pro can be adapted to the size and growth stage of the grassweeds."

However, there are some important things to consider when targeting grassweeds, highlights Georgina.

Target grassweeds

"Axial Pro can't be mixed with hormone (phenoxy) herbicides, such as 2-4, D, MCPA or mecoprop, but where it's applied in sequence there's a requirement to wait 21 days following an SU or hormone, or make sure there's a seven-day gap between applications if Axial Pro is first in the sequence.

"So target the grassweeds first, as those have the biggest detrimental effect on yield," says Georgina.

"Apply when wild oats are small, before GS29. If growing conditions are good then go on at a rate of 0.4 l/ha of Axial Pro with an additional adjuvant — our recommendation is Adigor," she advises.

"If growing conditions are less good, go at a rate of 0.6 l/ha, according to the label recommendations. For larger wild oats — at GS29-39 — apply 0.6-0.8 l/ha of Axial Pro," she adds.

Nozzles should be adjusted depending on the size of the canopy and where the weeds sit within it. "The easiest time to hit weeds is when they are small and the canopy is open," says Georgina. "We'd recommend a small droplet size, applied using angled nozzles and a water rate of 100 l/ha.

"As weeds and the crop grow — beyond GS31 — there are benefits to increasing the



Georgina Young highlights that smaller weeds are far easier to control than larger, more developed ones.

water rates to 200 l/ha, with more and larger droplets to increase canopy penetration.

"If weeds are large and emerging above the canopy — GS31-41 — we've seen variable results in this situation. Small, concentrated droplets at a lower water volume of 100 l/ha can cover the tops of the weeds," she says. "But growing conditions need to be good, so the product can move through the plants.

"In a taller canopy, where weeds are shaded below it, larger droplets and a higher water volume is needed to penetrate the canopy and get to the weeds. This is the most challenging situation to hit weeds in, it's much easier targeting them when they're small."

As each situation is unique, preparation is key, advises Kathryn. "Understand where you might fall down so you can prepare to adapt to the season in front of you." ■

Mastering spring barley

Spring barley is the UK's most popular spring combinable crop, with the intended area in 2022 far exceeding the area of winter barley already in the ground. It's hardly surprising because, get it right, and spring barley can deliver a pretty decent gross margin. While there are masters of spring barley who have learnt their art from years of experience, there are also many apprentices — more recently acquainted with the crop and its intricacies — as the crop has grown in popularity.

To help navigate the potential pitfalls of spring barley growing, CPM has teamed with Syngenta to draw on its experience from varieties through to crop protection. Looking at the whole picture, this series of three articles will investigate growing for the market; early

agronomy to set the crop up to make the best of its short growing season; and how best to keep diseases at bay.

Spring barley offers an extremely valuable opportunity within integrated grassweed control strategies, to utilise the competitiveness of a well-grown vigorous variety and effective herbicide options. Syngenta's R&D innovation and practical field trials provide the guidance and advice for growers to get the best possible results from spring barley this season.

