

tillage

Avoiding the graveyard shift

A review of winter barley performance in 2022.

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Discussions about the cropping plan for the coming season are underway on most farms. Crop performance, rotations, costs, markets and workload will all influence next year's crop mix.

Combined with high input costs and uncertain yields, winter barley is one crop that may suffer on the back of its relatively poor performance this year. However, the crop has many virtues and growers may regret dropping it from the rotation based on one bad year.

Although spring barley outyielded winter barley in many situations this year, winter barley has traditionally yielded 1-2t per hectare more. As well as considering the advantage of spreading the workload and the extra value in terms of straw, growers should review the long-term performance of winter barley on their farms.

So, why did winter barley perform well on some farms and not on others this year? The following are some observations which may help to avoid a poor crop in 2023.

Variety

There is good range of varieties available, including two-row, six-row and six-row hybrids. KWS Joyau performed very well on many farms, especially where Barley Yellow Dwarf Virus (BYDV) risk was high. KWS Cassia has good quality, but is prone to disease and has relatively low yield potential.

Six-row varieties have the highest yield potential, but can suffer with quality. Some growers have commented that certain varieties suit their farms or systems and vice versa, so choose a variety that you are comfortable growing.

Sowing date

Many crops were drilled in mid to late September last year, as conditions were ideal at that time.

Work from Teagasc Oak Park shows that BYDV risk increases significantly with early drilling and there was plenty of evidence in the spring this year to show that this was an issue in many of the September drilled crops.

There seems to have been BYDV infection in crops regardless of the number of insecticides applied, which could indicate a long infection period or incorrect timing of the products.

Lodging risk and disease pressure also increase with early drilling and lodging seems to have been higher in winter barley crops this year than in previous seasons. All of these lead to extra costs from early drilling, with no extra yield to show for it.

Rotation.

There has been a shift away from second and continuous wheats as their performance has declined, while the costs have increased.

With limited break crop options, winter barley has been moved into those 'second wheat' slots. The 'graveyard shift', as many growers call it, is not an ideal situation for winter barley, as it can suffer from take-all similarly to wheat.

Again, this was evident in some crops this year. Winter barley will perform best in good slots following break crops, just as wheat does.

Nutrition

With the high costs of fertiliser this year, there was a lot of talk about taking P and K 'holidays' for the season; relying on the fertility of the soil to feed the crop. Again, this may explain some of the issues that were experienced this year.

Yield in barley is formed early and comes from establishing a good crop with plenty of plants and tillers. Achieving between 1,000 and 1,100 shoots/m² will give the crop the best chance to realise its potential.

From looking at crops this year, many did not have enough shoots to maximise yield.

This may have been as a result of applying less P and K, but it may also have been a result of delaying nitro-



gen applications in the spring due to poor weather or lack of supply.

Timing the nitrogen to drive tiller production is critical. In some cases, the first application wasn't made until mid to late March, when tiller production had almost finished.

Research from Teagasc Oak Park shows that early March is roughly



Will Stokes.

the time when the first application of between 30-40kg of nitrogen is needed to feed young tillers.

As always, don't hesitate to apply lime where needed. It is still the cheapest form of fertiliser and it will make nutrients more available to the crop.

Disease control

Disease levels were quite low this year, so crops that would have normally received a three spray programme only received two.

While in some areas this worked out well, particularly in the northern half of the country, it is possible that some tillers were lost to diseases such

as net blotch and rynchsporium.

Ramularia was another disease which seemed to be very prevalent in 2022. Why this was the case is not clear. There is still a lot that we don't know about the disease.

Ramularia is a stress related disease which, at the moment, cannot be cured by any of the available fungicides and trials have consistently shown that early prevention is key to delaying the spread of the disease.

Year after year, trials show that an application of a fungicide containing a multisite product – e.g Folpet – at the awns peeping (paintbrush) stage with an azole mix like Siltra gives the best control. Delaying this application by two weeks, to let the heads come out fully, resulted in yields decreasing by 0.4t/ha.

One grower who intentionally delayed drilling winter barley crops last year was Will Stokes from Kilsheelan, Co Tipperary.

Will is one of the Teagasc Tillage Signpost farmers and he is also participating in a European project called IPMworks, which aims to promote using more Integrated Pest Management (IPM) techniques on farms. Will grows a variety of crops on the farm including winter wheat, winter barley, spring barley, spring oats, peas, beans and potatoes.

"I started drilling winter barley on 10 October last year," says Will. "That was later than most in the area, and we did so mainly to reduce the risk of BYDV, which I feel is one of the biggest threats to barley crops in the area."

Varieties drilled included LG Castings, Belfry and KWS Joyau (which is BYDV tolerant). Sowing different varieties also spreads the risk of diseases, lodging and ripening.

Normally, the winter barley fits into the rotation after winter wheat or break crops such as oats. Winter barley is dressed with Latitude seed dressing when being sown in take-all risk slots.

"This year, crops yielded well with the winter barley averaging 4.1t across 70ac, which would be on par with the previous three years, where the winter barley yields ranged from 3.75-4.25."

Will feels winter barley is an important crop in his rotation and average yields of over 4t for the past few seasons has resulted in an increased area sown.

This trend is likely to continue.

"Achieving good yields with lower fertiliser and chemical inputs, through variety selection, good rotation and organic manures is a contributing factor and the higher demand for winter barley straw is a bonus," Will concludes.