

Hold your horses on sowing winter barley

Sowing date for winter barley is crucial. Early sowing, while tempting if conditions are right, generates risks that can impact yield, quality, and overall crop health

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Growers would euphemistically describe their experience with winter barley in 2024 as 'mixed'. Most of the poorer crops were a consequence of the excessive rainfall last autumn. Seed beds were a nightmare, leading to poor establishment and reduced performance.

Some growers are suggesting that they are willing to drill early to avoid repeating the experience, but growers need to be mindful of the following risks.

Increased disease pressure

One of the primary risks is the heightened exposure to disease, particularly foliar diseases such as *rhynchosporium*, net blotch and powdery mildew.

These diseases can establish more easily when the crop is in the ground for longer, especially in the mild and damp autumn conditions typical of Ireland. Early sown crops can act as a reservoir for these pathogens, leading to more severe infections that can reduce yields and grain quality.

Take-all, while often seen as a lesser issue in winter barley, can be a problem. Be particularly careful in high risk situations such as second cereal after a break crop or where drilling early. Most growers now opt not to grow second wheats due to the costs, preferring barley instead. These winter crops will be at high risk of take-all infection and will benefit from later drilling.

BYDV

Aphids, which are vectors (carriers) of Barley Yellow Dwarf Virus (BYDV), are more likely to infest crops that have been sown early. The mild autumn weather allows aphids to survive longer and reproduce, increasing the risk of BYDV, which can stunt plant growth and reduce yields.

Research in Teagasc Oak Park

over a number of years tells us that September drilled barley generally requires two insecticides while crops drilled in October usually need only one. The extra application runs the risk of increasing the levels of resistance among the aphid population. This could lead to problems in the future.

Monitoring and managing aphid populations can be challenging and may require increased use of pesticides, leading to higher production costs and potential environmental impacts. As stated earlier, early sowing benefits aphid populations.

While there are now varieties available that can help to reduce the risk of BYDV infection, this doesn't mean that it is a good idea to sow these varieties early as the other issues that can affect early sown crops will also be present.

Weed competition

Early sowing provides a longer window for weeds, particularly grass weeds such as sterile brome and blackgrass, to establish and compete with the barley crop. Weeds that emerge simultaneously with, or before, the crop compete for light, nutrients, and water, ultimately reducing barley growth and yield.

Managing these weeds often necessitates additional herbicide applications, which can increase costs and the risk of developing herbicide-resistant weed populations.

Lodging

Sowing winter barley early can result in excessive vegetative growth before winter. This excessive growth can increase pressure on the plant's abil-



The excessive rainfall last autumn meant some seed beds were a nightmare

ity to stand regardless of your growth regulator strategy.

Higher input costs

Managing the additional risks associated with early sowing often leads to higher costs. In 2024 the Teagasc Costs and Returns Booklets showed that the estimated input cost for winter barley was €765/ha (€309/ac) using standard agronomy packages.

There may be small savings to be made on seed costs by sowing early; all other costs will almost certainly be higher.

In Teagasc Oak Park we have seen that where multiple insecticides are used to control aphids the risk of developing resistance almost doubles while the number of cases of grass weed resistance is also increasing year on year.

RISK MITIGATION

To reduce the risks associated with early sowing, farmers should consider the following best practices:

- **Optimal Sowing Dates:** Adhering to recommended sowing dates can help balance the benefits of early establishment with the risks of disease, pests, and adverse weather. Typically, the ideal window for sowing winter barley is from late September to mid-October.
- **Integrated Pest Management (IPM):** This includes regular monitoring of pest and disease levels, using resistant barley varieties, and applying biological controls where feasible. IPM can also be used to prevent resistance building up to the available pesticides. This is likely to become more important in the future.

Teagasc is currently monitoring the risk of BYDV infection on a number of farms around the country to build up a bank of knowledge about the different environmental conditions that can affect aphid movement and subsequent infection.

As mentioned, early drilling is one such factor. There are over 20 farmers who trap and submit aphids each week to Teagasc Oak Park. Over time, this will give us a better picture of the factors that encourage aphid movement and the subsequent levels of BYDV in crops.



Craig England and Ciara O'Donovan view a variety of crops including winter barley and spring barley on his farm in Ballynoe, Co Cork.

'We saw very little infection in any of the tramlines this year'

Craig and Meghan England, who are based in Ballynoe, Co. Cork, are among the farmers who trap and submit aphids each week to the Teagasc research centre in Oak Park.

"We grow a variety of crops including winter barley, spring barley, spring beans, winter rye and oats," says Craig. "On October 10th last year we planted Pixel and Tardis winter barley and in one field we carried out a tramline trial. Along with three other farms, this was part of an EU project looking at the use of a decision support tool to assist growers in determining when is the best timing to use an insecticide to control aphids."

Trial treatments

The trial treatments consisted of applying an insecticide at the normal timing two-three leaf stage to one tramline; leaving another tramline untreated; and, in a third tramline, applying an insecticide according to a

decision support tool called Acrobat. These tramlines were harvested with a combine harvester that has GPS enabled technology and so can record the live yield on each tramline.

Yield mapping

The yield is then mapped for each tramline and these can then be analysed and compared to one another.

"We saw very little infection in any of the tramlines this year," says Craig.

"The field was ploughed on October 9th and the morning of ploughing the field I noticed there was a very high number of slugs.

"I was going to be planting winter rye in this field but because of the slugs I swapped fields and put winter barley there instead. I'm planning on sowing a little earlier this year, with a BYDV tolerant variety barley for around the last week of September."