

TILLAGE

May 2023

Spring barley

Spring barley fits into three distinct sowing categories this year: early (February/early March); normal (early April); and, the largest category, late-sown crops (mid to late April). Each category presents distinctly different challenges, and agronomy should be tailored to match the sowing date.

Early-sown crops will have a higher disease risk, but a very low risk of barley yellow dwarf virus (BYDV), whereas disease risk is lower in later-sown crops, but the risk of BYDV infection increases as sowing date is delayed. The total nitrogen (N) rate should be reduced in later-sown crops to match yield expectations.

Management of BYDV in spring cereals

BYDV is a major challenge for late-sown cereal crops. Aphid numbers increase with temperature, which means that cereals emerging in May are at high risk of BYDV infection. Grain aphids, a major vector of BYDV, have developed resistance (knock-down

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There is no benefit to repeat insecticide application for control of BYDV.

resistance (KDR)) to pyrethroid insecticides (Karate Zeon, Decis Protech, etc.); therefore, insecticide use needs to be planned and targeted to achieve the best effect.

Teagasc research on late April-sown spring barley has shown that one application of a pyrethroid insecticide at the four leaf stage will give the best control of aphids. Multiple applications do not increase the level of control and will exacerbate the problem at a local level.

Weed control

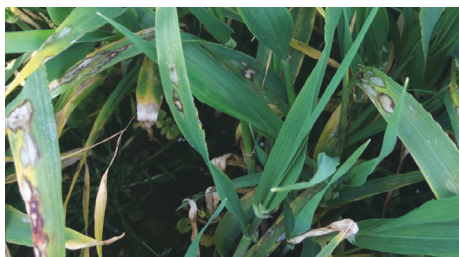
Late-sown crops present an opportunity to make savings on weed control due to faster development of the crop. Low rates of herbicides can be effective, but successful control is dependent on applying herbicides to small weeds that are actively growing. For late-sown crops, this can be done with an aphicide following a period of good growth.

Fertiliser

Any remaining N needs to be applied as soon as conditions are suitable. Where lower yield potential is expected, reduce the total N applied. A 6.5t/ha crop has a requirement for 135kg/ha (108 units). Increase N by 20kg/ha for every tonne expected over 6.5t/ha.

Disease control

The average yield response from a two-spray fungicide programme in Teagasc trials is 1.3t/ha, but can range from 0.5-2.75 t/ha, depending on the season. The expected response will be lower on late-sown crops, meaning that the spending on fungicides can be reduced. Oak Park trials have shown two half-rate fungicides (combined product), will give maximum economic return.



Match fungicide to varietal characteristics.

The first fungicide should be timed before GS30. All fungicides have strengths and weaknesses, so it is important to match the correct fungicide with the varietal characteristics. All current spring barley varieties contain Mlo resistance to barley powdery mildew, so the inclusion of a specific mildewicide is rarely warranted. It is essential to walk the crop beforehand, then decide on the fungicide of choice and rate in conjunction with the varietal characteristics.

For example, in **Table 1**, RGT Planet is susceptible to net blotch and the fungicide programme should contain a strob (e.g., Comet) with good activity on net blotch, whereas the risk to varieties like Geraldine and SY Amity is much lower. A mismatch of fungicide and variety can lead to either poor disease control or unwarranted fungicide use (**Table 2**).

Table 1: Department of Agriculture, Food and the Marine (DAFM) spring barley disease ratings.

	Gangway	Geraldine	RGT Planet	Skyway	SY Amity	SY Errigal	Gretchen*	Rockway*
Mildew	8	8	8	8	8	8	(8)	(8)
Rhynchosporium	5	7	5	7	6	5	(7)	(7)
Brown rust	6	6	5	6	6	7	(7)	(6)
Net blotch	8	8	4	6	8	8	(8)	(7)

"(") – limited information.

Table 2: Spring barley fungicide programme.

Timing	Target diseases	Programme
Tillering <GS30	Rhynchosporium Net blotch Brown rust Mildew	Mixtures Azole plus strob/SDHI Mildewicide where required
Awn emergence GS39-49	Rhynchosporium Net blotch Brown rust Mildew Ramularia	Mixtures Azole plus strob/SDHI Mildewicide where required Folpet 1.5L/ha to assist in the control of ramularia

Winter wheat

Fungicide timing is the key determinant of successful disease control in wheat. A fully emerged leaf one (flag leaf) and leaf three indicate the key timings. Research has shown that plus or minus seven days of a fully emerged leaf one can make a significant difference in high disease pressure situations (see **Table 3**).

Septoria control in winter wheat will be based around the azole, Revysol, and Qil Inatreq. Both

products have performed well against septoria in Teagasc trials and in the field. However, both are at risk of resistance and should only be used once per crop at the rate required and in mixtures with a multisite like folpet. Older products (Ascra Xpro, Elatus Era, etc.) still have a role in disease control, but the foundation of good control still relies on applying products at the correct timings.

Table 3: Winter wheat fungicide programme.

Timing	Product
Leaf three	Folpet 1.5L/ha plus 80-100% (azole/SDHI/Qil)
Leaf one (flag leaf)	Folpet 1.5L/ha plus 80-100 % (azole/SDHI/Qil)
Start of flowering	Azole mix

Winter barley

The latest stage to safely use a plant growth regulator (PGR) is the awns peeping stage. Terpal 1.2-1.5L/ha or Cerone 0.6-0.7L/ha are options but pay close attention to the latest timing. The final fungicide needs to be timed at the awns emerging stage. It should consist of an azole plus an SDHI/strob and 1.5L/ha of folpet

to assist in the control of ramularia. Recent Teagasc experiments on the control of ramularia show that the best timing for controlling it comes between GS45 (boots swollen) and GS49 (first awns visible). However, an application of folpet at GS59 (ear emergence complete) did not contribute to its control.

Winter oats

The final fungicide timing, as the ear emerges from the boot, in winter oats is targeting rust and mildew and to prolong green leaf area. Suitable product mixes include an

azole/SDHI/strob mix (e.g., Elatus Era 0.75-0.8L/ha, Proline 0.5L plus Amistar, Comet 0.5L plus or minus a mildewicide, or Boogie 1.0L/ha).

Beans

Beans were generally sown early this year, which may increase disease pressure. The key to bean disease control is early spraying when disease is first seen or expected. Chocolate spot is the main threat but downy mildew,

and sometimes rust, can rob yield. Apply Elatus Era 0.66L/ha (only once), Signum at 0.5-0.75L/ha, or Amistar 0.5 L/ha plus tebuconazole 0.75L/ha at the start of flowering.

Basic Payment Scheme

The closing date for Basic Payment Scheme (BPS) applications for this year is Monday, May 29, 2023. Application for the Straw Incorporation Measure (SIM) is also done at

this time. The SIM could be a good management tool this year, with current high fertiliser prices and to facilitate the timely sowing of winter oilseed rape and cover crops.

Teagasc events

A series of Teagasc crop walks continues in May. Check out the Teagasc website for details of crop walks in your area now: <https://www.teagasc.ie/news--events/national-events/>.