

TILLAGE

February 2022

Spring beans

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Bean crops were very much a mixed bag in 2021, with some growers achieving yields of between 5.5 and 6.0 tonnes per hectare (t/ha), while in other parts yields were as low as 2.5t/ha. There is likely to be increased interest in growing beans again this year based on the lower fertiliser and input costs. However, the recently published Teagasc Costs and Returns booklet shows that at the lower yields, even with the protein payment included, beans will struggle to leave a margin. Based on the figures published, beans need to yield in excess of 3.1t/ha to break even. That said, a 5t/ha crop will leave a similar margin to an 8t/ha crop of spring barley this year. Therefore, growers should think about which fields they want to plant beans in and consider the following points, all of which will have an impact on the yield potential of the crop:

1. Suitable soils – beans like moisture-retentive soils, so soils that are prone to drying out during a normal summer are not ideal and



Beans have lower input costs than spring barley.

should be avoided. However, beans also perform best when they are drilled early (i.e., early March) so soils need to be suitable to cultivate at this time, especially when using direct-drill systems.

2. Soil fertility – beans perform well where the soil indices for phosphorus (P) and potassium (K) are high. Trials from Oak Park have clearly shown where beans are sown in Index 1 or 2 soils for P and K, they never yield as well as those sown in Index 3 soils, regardless of how much fertiliser is used.
3. Crop rotation – ideally beans should only be drilled in the same field every five to six years, and from a disease point of view, the longer between crops the better.
4. Time of drilling – beans rarely perform well when planted late in the season and later planting also results in later harvesting, which can cause a number of problems such as increased moisture, soil trafficability for the combine, and reduced quality.
5. Weed spectrum – the choice of herbicides for beans is quite limited, especially for broadleaved weeds where you are limited to pre-emergence herbicides, so knowledge of the predominant weeds in the field is essential.
6. Combine capacity – as a general rule of thumb only drill an area that you can comfortably harvest in two to three days. Remember, you will be harvesting in the second half of September when days are short and ground conditions are starting to deteriorate.
7. Protein Payment Scheme – while the scheme is available again in 2022, this should not be the deciding factor in growing the crop.
8. Cereal crops following beans or peas will have a lower nitrogen (N) requirement in 2023, which will in turn reduce costs.

Upcoming Teagasc events

Teagasc is hosting a number of webinars during February, which are well worth attending for the most up-to-date information. See **Table 1** for details. For more details on each event log on to: <https://www.teagasc.ie/tillagemonth/>.

Table 1: Teagasc webinars in February.

February 3	CAP 2023 webinar 2
11.30am	
February 10	Malting Barley Conference
11.30am	
February 15-18	Winter Crop Walks
11.00am or 2.00pm	

Teagasc tillage podcast



Don't forget *The Tillage Edge* podcast is available every week to listen to the latest tillage issues. You can access it on the Teagasc website, Apple Podcasts or Spotify.

Oilseed rape

Many oilseed rape crops had very large canopies before Christmas but many of these are now smaller and have a lower green area index (GAI) than previously, due to either the plant growth regulator effect or pigeon grazing, or both.

Therefore, all efforts to stop pigeons grazing in the coming weeks need to be deployed or the canopy will be grazed further. The effect of pigeon grazing will determine how much N is needed for the crop in the coming weeks.

Remember that N is stored in the leaves of oilseed rape and when pigeons graze leaves, they are taking away that N, which is vitally important this year given the price of it.

The size of the canopy can be measured by using the GAI app on your smartphone. Where crops have a GAI of 1, you have approximately the equivalent of 50kg/ha of N already in the crop. That is worth approximately €125/ha at the current N price of around €2.50 per kg.

Therefore, assess your canopy size before deciding on a fertiliser regime for the crop.

Table 2 shows the N requirement and strategies at different GAIs.

Sulphur (S) is often forgotten where fertilising an oilseed rape crop, even though the crop has



Do all you can to stop pigeons grazing.

a relatively high requirement of 30-35kg/ha. Use N fertilisers that have a relatively high level of S, e.g., ASN. Apply S in the first two splits if possible.

While most crops have received a fungicide, the relatively mild winter means that it is highly likely that light leaf spot is present in many crops, especially varieties with low resistance. Take samples of leaves and put them in a plastic bag and then put the bag in a warm room (e.g., a hotpress) for 24-48 hours. You should then see the tell-tale signs of the little white salt-like lesions on the leaves. Where you see light leaf spot lesions, use a fungicide containing prothioconazole (e.g., Proline), metconazole (Juventus), or tebuconazole (Fezan) for control. Note that prothioconazole-based products will not have a growth regulator effect on the crop, whereas the other two actives will have some level of effect.

Table 2: Nitrogen requirements for crops with different GAIs.

Crop GAI	Total N (kg/ha)	Early split (late February or early March)	Main split (mid March)	Seed fill (late March/early April)
2.0	130	0	70kg/ha	60kg/ha
1.5	190	40kg/ha (March)	90kg/ha	60kg/ha
1.0	210	50kg/ha (March)	100kg/ha	60kg/ha
<1.0	225	70kg/ha (February)	120kg/ha	35kg/ha

Note: Can add 30kg/ha for target yield of 5.0t/ha where farm fertiliser plans allow.

Cover crops

There are many thoughts on the best way to destroy cover crops at this time of year. Depending on the crop type or how well it has grown or the drilling system, there are various ways of dealing with the destruction of the crop. Many farmers have opted to graze them off with light cattle and sheep. This is a very good way of recycling the crop and nutrients back into the ground; however, it is not without its risks to soil structure. Over grazing or use of ring feeders can cause poaching, which can be difficult to rectify in the short term. Strip or block grazing tends to reduce soil compaction or run-off issues.

Using glyphosate before ploughing for the next crop is the most common method of destruction, but beware that if there are significant numbers of volunteer cereals in the crop, you may be harbouring diseases like net blotch, rhynchosporium, take-all and/or aphids. Ideally, you should allow six to eight weeks for the crop to die down before you plough it in. This will help to reduce the risk of direct transfer across to the new crop.

Growers who are in direct-drill systems are more commonly drilling directly into cover crops and then 'burning them off' with glyphosate. This method has many benefits (provided you have a drill that can handle the cover crop) from helping soil structure to reducing weed competition; however, again where there are significant numbers of volunteer cereals in the crop, there is also a risk of increased disease and barley yellow dwarf virus (BYDV) pressure in the following cereal crop. Whichever system is used,



Sheep grazing a cover crop.

have a plan to deal with the crop, otherwise the benefits of growing it in the first place will be reduced.

Nitrogen supply from cover crops

The autumn of 2021 proved to be very favourable for the growth and development of green covers on stubble fields. There was exceptional growth from natural regeneration to planted cover crops. A number of green covers were sampled on the Teagasc Signpost farms during December to measure plant growth (t/ha) and N uptake (kg N/ha). Green covers produced between 10 and 50t/ha of fresh material and recovered between 12 and 70kg N/ha. Earlier-sown cover crops produced larger green covers compared to later-sown cover crops/natural regeneration. Research would indicate that 0-40% (~20%) of N may be available to the following crop. Crops such as peas, beans or vetches produced the highest levels of plant N, offering the greatest opportunity to reduce chemical N rates in the following crop.