

tillage

Giving rye a try

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Gerard O'Meara runs a tillage and beef enterprise with his father, Pat, near Clonmel. They grow feed and malting barley, wheat, oats, maize, beet, oilseed rape and, occasionally, beans.

Always substantial winter wheat growers, they decided in 2018 to look at alternatives as Gerard felt "the cost of growing a crop of winter wheat outweighed the financial return for the end product".

He was approached by Tim O'Donovan of Seedtech with the option of growing a crop of hybrid rye for use in a trial on pig diets at Teagasc, Moorepark near Fermoy.

The O'Mearas have significantly increased the area of rye they are growing this year as a result of the significant loss in winter wheat due to storms in August this year. "I felt the hybrid rye had significantly less head losses, although it did lodge which made cutting very slow," says Gerard.

"After the storms in August most crops in the area had either lodged or broken down, with significant yield losses, I feel the rye stood up better to the difficult weather than the spring barley and winter wheat."

Drought

After the drought in 2018, low grain yields and straw shortages meant the O'Mearas were looking for a crop that will give good grain and straw yields. Rye offered a 25% better drought tolerance than wheat or barley and a 20% increase in straw yields.

"We're getting between 18 and 20 well-packed 4x4 bales per acre from the hybrid rye, compared to 12 to 16 from hybrid barley," says Gerard.

"The rye yielded 4.3t/ac of grain in 2019 and 4.8t/ac in 2020. The crop has good take-all resistance and it is



highly competitive with grass weeds. It seems to work very well in our system."

With the loss of Redigor deter the O'Mearas won't start setting winter barley until after 10 October, with the hope of not needing an insecticide, whereas the setting window for the hybrid rye runs from mid-September to early November.

"The ability to sow the rye that bit

earlier is a huge advantage as it's going in during good conditions and it's sown before we start the winter barley," adds Gerard.

Cheaper

"We find the hybrid rye significantly cheaper to grow than winter wheat with 30 units less nitrogen needed per acre and one less fungicide application. Yet, we will get very similar yields to winter wheat with more straw."

"The hybrid rye will need an additional growth regulator. However, as it's a tall crop, three growth regulators are recommended. It's also much slower to cut due to the high volume of straw."

Gerard has always kept a load or two of his spring barley for feeding to finishing cattle, although given the good price for malting barley and the fact that all the spring barley passed for malting meant he was going to try feeding the hybrid rye to the cattle.

"I got some of the hybrid rye treated and rolled and it turned out very well so I'm currently feeding that to finishing cattle along with a balancer to ensure mineral requirements of the cattle are met."

"So far, the cattle seem to be performing very well on it."



Rolled rye is a feed option for finishing cattle.



Gerard O'Meara and Teagasc tillage advisor Conor Kavanagh examine a mid-winter stand of rye.

Rye production in Ireland

The area of winter rye in Ireland is low, just 476ha in 2020. The crop isn't new to Ireland and records show that rye was grown in Ireland in the late 1800s for distilling and the straw was used for thatching.

Recent interest has risen in two areas: the distilling industry and feed for ruminants and pigs. Rye is attractive for tillage farmers as it has high grain yields with a relatively low cost of production.

The top countries where winter rye is grown are Germany, Poland, Russia, China and Denmark. Many people point to Denmark, which has a similar, temperate, climate to Ireland, when making a case for increasing the production of rye here.

Rye production for animal feed in Denmark has increased substantially in the last few years as a result of a policy of more home-produced feed production. Much of the rye grown in Denmark is used for feed in its large pig enterprises.

Recent research carried out by Peadar Lawlor, research officer at Teagasc Moorepark, concluded that pig growth

rates on rye were excellent and that it can be used in finisher diets. Based on the chemical analysis, the forecast value of rye in the diet is 94% of the value of wheat.

Most of the current rye varieties are hybrid and are capable of delivering yields between 10t/ha and 12t/ha. Unlike wheat and barley which are self-pollinators, rye is a cross-pollinator. As a result, rye has had issues with ergot in the past, but modern breeding techniques have reduced this risk by shortening the time taken for fertilisation to occur.

Resistance

Rye is highly resistant to the take-all fungus *gaemannomyces graminis* and is a suitable crop to grow in a take-all slot but consecutive crops should be avoided as this will increase the risk of ergot.

One of the advantages of winter rye is that it gives growers the option of lengthening the rotation before returning to a break crop.

Another advantage of rye's take-all tolerance is that it spreads the workload in the autumn as it can be sown from mid-September. Like all cereals, rye is susceptible to BYDV and early sowing can also result in increased lodging

risk after a growthy autumn, so it is important to strike the correct balance between sowing date and location.

Weed control is similar to wheat and barley and will normally be done in the autumn and research from the UK shows that rye does provide useful suppression of blackgrass.

One of the most striking features of winter rye is the height of the crop, it grows 30cm to 40cm taller than wheat. Root lodging is the most common form of lodging and can be an issue, especially in thin crops. Grower experience to date is that losses as a result of lodging are rare but harvesting is slower due to the additional two to three bales (4X4) of straw per acre.

Phosphorus and potassium application should be based on offtakes and nitrogen rate is 15% to 20% less than winter wheat. Disease control in rye is relatively straightforward compared to other cereals. Brown rust and powdery mildew are most common but are well controlled by azole/strobilurin mixtures.

Production costs of winter rye are comparable to winter barley but output is higher due to higher grain and straw yields. There are an increasing number of feed merchants purchasing rye but it is important to have an agreement in place before you consider the crop.