

What's in your bag of seed?

Control of an undesirable weed invader, blackgrass, bears an eerie resemblance to the issue that will define 2020

Jimmy Staples

Enable Conservation
Tillage (ECT) project advisor,
Teagasc Crops, Environment
and Land Use Programme



We are only in May but 2020 has already been a year that no one will forget anytime soon. An exceptionally wet autumn in 2019, where over 400mm of rain was recorded in Teagasc Oakpark, made autumn plantings difficult, or impossible.

This was followed by an extremely wet February and early March and a daunting spring workload. Thankfully, the weather was with us as we passed the mid-point of March and, as I write, the majority of spring crops have been sown in very favourable conditions.

With the reduction in autumn 2019 plantings, there will be a greater demand than usual for seed this spring. Initial projections from the trade suggested there would be a potential shortage of about 5,000 tonnes of seed. Whether or not this will materialise is not certain but any shortfall will have to be imported from our European neighbours. This presents a potential problem, not just for this season but coming seasons too.

Standards

In order for seed to be marketed freely within the EU, it must be produced in accordance with EU norms and rules.

The criteria for seed production within the EU are defined by a number of directives. These directives

stipulate the quality factors which must be met in the field in order for seed to be deemed suitable for use.

Some of these quality criteria include: percentage varietal purity, percentage germination, disease status and number of weed seeds present in a sample. These criteria can change from category to category of seed (e.g. basic seed will have higher standards than C2 seed).

Ireland, through the Irish Seed Trade Association (ISTA), is one of only four countries in the EU which works to a Higher Voluntary Standard (HVS) when it comes to seed production. As part of this HVS, there is a zero-tolerance approach to invasive or noxious weeds such as wild oats, canary grass, sterile brome and black-grass. Seed crops found to have any of these weeds present upon field inspection are deemed ineligible for seed production.

If we look at the standards which have been detailed within the EU Directives and have been adopted by the majority of EU states you will see that there is a tolerance within all seed categories for seeds of other plant species (Table 1).

With this in mind, farmers who plan to use imported seed should enquire about the origin of the seed and look for certificates to show that it is free of weed seeds.

Farmer focus

A Kildare farmer who operates a plough-based system (who wishes to remain anonymous) has experience of the problems that can arise from importing seed which is not weed free. He details his story starting with



In order for seed to be marketed freely within the EU, it must be produced in accordance with EU norms and rules

Table 1: Analytical purity of wheat, barley and oats

Category	Minimum analytical purity % by weight	Maximum content of seeds of other plant species (number of seeds per 500g)		
		Total	Other cereal species	Other plant species
Basic seed	98	4	1	3
Certified seed, first generation	98	10	5	7
Certified seed, second generation	98	10	5	7



Figure 1: Black-grass beginning to head out.



Figure 2: Black-grass appearing above the crop.



Figure 3: Flowering black-grass.



Figure 4: Sections mowed out of the WW crop.



Figure 5: Black-grass plant with 40 tillers.

the sowing of a crop of winter oilseed rape (WOSR) in the autumn of 2015.

"In 2015, we established a crop of WOSR followed by a crop of winter wheat (WW) in 2016. In the spring of 2017 a grass weed that hadn't been seen on the farm before began to emerge above the WW crop (Figure 1 and 2).

After the weed began to flower (Figure 3) it was identified as black-grass and knowing the experiences in the UK with this weed we took a zero-tolerance approach to it. The worst affected areas of the field were mowed and baled (Figure 4) with the remaining patches rogued up to four times in an effort to minimise seed return.

In the autumn of 2017, this field was sown down to a ley which will be kept in situ for a minimum of five years in order to deplete the seed bank. The plan for this field is to direct drill a crop of WW into it after the five years in a bid to avoid soil disturbance and avoid moving any surviving seeds into an environment that would be conducive to germination.

At this stage, we still weren't clear on exactly how the black-grass seed had got on to the farm. In the autumn of 2016, a crop of WOSR was established in a different field. As the autumn progressed, it got very patchy and some unused seed from 2015 was stitched into it. A crop of

WW followed in 2017 and in the spring of 2018 black-grass started to emerge above that crop.

"With 2017 still fresh in our minds, we knew straight away that it was black-grass and we implemented the same control strategy as the previous year. We also plan on direct drilling this field with WW when it is due to come out of a ley.

"We traced the source of contamination to the imported oilseed rape seed from 2015. To exacerbate the situation, AstroKerb was not used on the rape in either of those two seasons as Katarmaran was being used to control sow-thistle.

"Since this happened, we have become increasingly aware of the potential for problems to be imported onto farm. As a result we are home-saving a lot of seed and only taking in seed where absolutely necessary. We pay very special attention to where we source the seed from.

"We do the majority of our own work so there is very little machinery coming on to the farm. We sell some straw on the flat but we make sure that the baler is thoroughly blown down in our yard before going to the field and all debris from the baler is disposed of properly.

"Most importantly of all, we make sure we are in our crops regularly and if anything suspect is noticed we

record it and routinely monitor it. This could have been an extremely costly exercise as it resulted in 50 acres of land being taken out of grain production for a minimum of five years. We were lucky that we run a mixed farm enterprise and we had the option of putting fields into grass without causing too much disruption to our business. The main costs we incurred were the loss of a crop where we had to mow patches out and the time and inconvenience of roguing."

Identification

Early identification was the key to achieving a satisfactory control in this incidence. One black-grass plant with just 10 tillers can produce 1,000 seeds and within a couple of years it can become a significant problem.

The problem is compounded by weed's tendency to develop herbicide resistance.

The unfortunate reality is that black-grass is present in Ireland on a wider scale than some would admit. It is vital that everybody working in the tillage industry, from farmers to advisors to merchants and seed assemblers, is aware of it and how to identify it. Vigilance is key and with early identification we can ensure that this challenging weed does not come to define the Irish tillage industry over the next decade.