

tillage

Counting the cost of controlling blackgrass

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As part of the Enable Conservation Tillage (ECT) project, we completed a 10 year macro-economic analysis on the cost of blackgrass control in winter wheat and winter barley in Ireland.

This analysis estimated that even with good levels of control achieved in nine of the 10 years, blackgrass would still cost Irish tillage farmers €30m in lost winter wheat output. In addition, €13.5m worth of winter barley production would be lost.

Trying to establish what the control of blackgrass costs an individual farmer's bottom line can be difficult. Herbicides are the easiest of the control measures to put a figure on, as you pay for each litre or kilogram of product you apply and most farmers will know their costs per acre for spraying.

Table 2 highlights the potential cost of a number of measures that can be used to control blackgrass on-farm.

These are costed using the Teagasc Crops and Returns 2021 booklet and will vary from farm to farm.

Other costs are harder to quantify. For instance, if a field has to be taken out of crop production and sown down with grass for a five year period, there may or may not be a market for fodder or grazing, and this would have to be considered when calculating the cost versus growing a combinable crop.

The potential cost of pushing back sowing dates also needs to be carefully considered. Later sowing dates may result in a small yield reduction, or could potentially lead to missing the opportunity to sow an autumn crop altogether.

The cost of cleaning machinery between fields and farms is another cost that has to be calculated at farm level, based on down time, labour and investment in equipment to carry out the job.

Farmer case study:

A north Dublin farmer took a lease on a block of land in 2018. A crop of winter wheat was established, it received an autumn herbicide and wintered well. The following spring, blackgrass



was identified in 40% of the field.

The crop was brought through to harvest. About 60% of the field yielded 4.2t/ac, while the area affected by blackgrass only yielded 1.5t/ac. With grain prices at €165/t, this resulted in a loss of €446/ac over the affected area.

A seed sample was sent to Teagasc Oak Park and an IPM strategy was put in place. The decision was taken to leave the field fallow for the

Table 1: Variation in yield loss in winter wheat at different blackgrass densities.

Plants/m ²	% yield loss	€ Loss per hectare
12	5	75
25	10	150
50	15	225
100	20	300
250	35	525
300	40	600
500	50	750

Based on a 10t/ha crop at €150/t





Table 2: Cost of blackgrass control in winter wheat

Action	Cost €/ha	Notes
Crop destruction	1,330*	Spraying off patches in late May/early June (*costs of growing crop up to mid May)
Yield loss	300	Two tonne yield loss caused by 100 blackgrass plants/m ²
Chopping of straw	262	Straw on the flat at €100/ac includes cost of chopping
Growing an alternative crop	230	11t winter wheat crop vs 8t spring barley crop
Herbicides	144	Flufenacet, Diflufenican, Tri-allate and ALS chemistry stack to aid resistance management
Stale seedbed establishment	70	Will be higher where multiple stale seedbeds are used
Increased sowing rates	16	Increase sowing rate of winter wheat by 20%

Based on costs from Teagasc Crop Costs and Returns 2021.

classes of chemistry and the decision was taken to sow winter oilseed rape in the autumn of 2020.

While the costs of trying to control the blackgrass have been significant, the steps have been effective.

By following an IPM strategy, the levels of blackgrass in this field have been reduced considerably. The crop of winter oilseed rape is yet to be harvested, but the signs are positive at the moment.

Action	Cost per hectare
Yield loss	€1,100
Fallow period	€300
Stale seedbed	€316
Alternative crop	€216
Total	€1,932

2019/2020 season, to try and reduce the amount of seed in the seedbank.

Stale seedbeds were established on four occasions over the course of the season. While this helped the problem at hand, it resulted in a negative financial impact.

As opposed to making an expected profit of approximately €125/ac from an average crop in an average year, establishing a stale seedbed came at a cost of €32/ac each time.

Results from Teagasc Oak Park revealed that the blackgrass population was susceptible to a number of

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