



Making the most of your arable area

Optimising use of land throughout the year is what Michael and Stephen Donnelly are doing on their Co Wexford farm. Spring malting barley has earned its place in their rotation

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Michael and Stephen are innovators, regularly evaluating their crop mix and rotation. Expert growers, they currently have crops of winter barley, spring malting barley, maize, fodder beet and grass. The maize, beet and malt barley are all grown on contract and the area sown is always determined in consultation with the end users and rotational restrictions.

"It is vital in the current climate to

maximise your return per hectare," says Michael. "Our winter cereals go hand in hand with early sowing of fodder crops. The maize and beet allow me the rotations to do so and finishing hoggets provides a source of income at a time of year when there is little or no cashflow from cereals."

The store lamb finishing enterprise developed as a result of land being available over the autumn and winter months. To utilise this land fully, forage crops are grown after harvesting cereals. Lambs are purchased from July onwards and held on grass until the fodder crops become available.

Growing a mix of crops requires a high level of knowledge and management. Timeliness of operations is very important.

Cattle slurry is imported and applied to the maize area to reduce fertiliser costs. Winter barley or winter wheat follows the maize crop. Michael is a member of the New Ross Tillers tillage discussion group.

The winter barley variety Belfry was planted following a crop of maize

last autumn and when it's harvested, fodder rape will be direct-drilled into the stubble.

"Early sowing is vital when growing fodder crops," says Michael. "When it comes to beet, purchasers demand a high dry matter beet and Magnum was planted in early April."

Malting barley is a key component and, again, Michael carefully manages both the production and marketing of the crop. This year, his enviable crop establishment partly results from an extra stone of seed/acre which he felt was needed this season. He avails of opportunities to sell part of his crop forward.

"Some people might ask why so many crops are grown on a small-scale family farm," says Mick. "But if we only planted spring barley, the land is effectively unproductive for seven months of the year. I enjoy a challenge and am eager to find new opportunities to help the business remain viable far into the future."

Boortmalt Joint Programme

The malting barley sector is extremely important to Irish tillage farmers, as it allows growers access to a premium market for their grain. Understanding the importance of the sector, Teagasc, in conjunction with Boortmalt, the largest maltsters in Ireland, have devised a joint malting barley development programme to run for three years. The programme has four specific aims:

- **Make malting barley the most profitable cereal crop in Ireland.**
- **Deliver more brewing and distilling barley within specifications.**
- **Establish a targeted knowledge transfer programme specifically aimed at malting barley growers.**
- **Increase the use of accurate nutrient management planning for malting barley crops.**

Over the course of the three-year programme, malting barley growers can expect to see an increased information flow with regard to malting barley production and technical support for malting barley through crop walks and on-farm workshops.

Monitor farms

The main focus of the programme will be the five malting barley monitor farms, which are located in each of the main malting barley growing regions in the southeast. These monitor farms will be used for specific malting barley crop demos and also to examine all aspects of malting barley crop production, from cultivation practices to financial planning. These farms will be used for both the crop walks and workshops that will be carried out as part of the programme.

Achieving protein specs

Attention to detail is vital when producing quality malting barley crops. The difference between a high-protein and low-protein malting barley can be outside a grower's control; namely the weather conditions during the growing season. However, it also hinges on key crop management techniques that growers carry out both before and during the growing season.

To date, the aim with the malting barley monitor farmers is to focus on crop and input planning. The first step is choosing the correct fields for both distilling and brewing barley. This must take into account previous experience with regard to protein in each field and furthermore soil type, rotation, previous crop offtakes, etc. Optimising P, K and lime inputs are crucial to crop growth and nitrogen utilisation.

Unlike most years, the spring barley seed being sown for malting this year had large variations in thousand grain weight (TGW). This meant that accurately calculating the required seeding rate for the seed being sown was



Michael Donnelly, Larry Murphy, and Eoin Lyons discuss nitrogen fertiliser.

critical to ensure that the target of 350 seeds per metre squared was drilled.

To calculate percentage establishment of the crop, plant counts had to be taken shortly after emergence. Plant counts are generally good this year due to excellent seedbeds and favourable weather conditions at sowing. The target for spring malting crops is to achieve 300 plants per metre squared from 350 seeds sown and this will give 85% establishment.

Nitrogen rate and timing have the largest impact with regard to grain protein content. Teagasc research has shown that 150kg N/ha is optimum to achieve brewing grade barley, while 130kg N/ha is optimum to achieve distilling grade barley.

Total nitrogen application should be divided between 30% at sowing with the compound fertiliser and the remainder at the one- to two-leaf stage of crop growth. However, this year possess a new challenge in relation to nitrogen

applications. Poorly yielding crops last harvest meant that crop offtakes were low and the potential for excess nitrogen to be remaining in soil is a possibility.

This, coupled with the excellent growth of catch crops, means that a carry-over of nitrogen for this year's crop is a real possibility. It is extremely difficult to quantify how much nitrogen remains in the soil. However, a reduction of between 10kg and 20kg N/ha was made, depending on the level of risk involved.

While nitrogen rate and timing remains the major factor in relation to protein management, the other minor factors must be accounted for to effectively manage protein levels. The external factors of both rainfall level and temperature will always be out of the growers' control. However, if attention to detail is applied to all management decisions, then the potential to meet required specifications will certainly be increased.