

## Teagasc Submission to the Joint Committee on Agriculture, Food and Marine 3<sup>rd</sup> October 2017

Teagasc would like to thank the committee for the opportunity to report on tillage industry today and where we see the possible areas for development for the future.

Firstly I would like to give some background on the industry. Tillage industry accounts for approximately 315,000 hectares or 9% of the area farmed in Ireland. The area has seen a decline of 3% per annum over the past four years due to reduced profitability, competition for rented land with the dairy sector, greening, and a lesser extend conversion to dairy. There are just over 11,000 farmers with tillage crops with approximately 3,000 specialised tillage farmers. The industry produces between 2.0 and 2.5 million tonnes of grain each year or approximately 1% of European grain production. Irish tillage farmers produce the highest wheat yields in the world and among the highest barley yields. The majority of grain is used in the pig, poultry and ruminant sectors but an increasing tonnage is being used by the malting barley and human feed grade oats markets. Ireland achieves between 70-95% self-sufficiency in feed grains but imports approximately 2.5 million tonnes of protein feeds and a further 1 m tonnes of other grains annually for the livestock sector.

Grain is traded globally and prices in Ireland reflect the global commodity prices which are largely set by maize and soya both of which are predominantly GM. Over the past 5 years successive large harvests, two of which were records, have seen a large increase in grain stocks worldwide which has reduced prices and reduced price spikes in the market place. At the moment grain prices are low and are over 30% lower than prices achieved in 2012. In order to see significant improvement in these prices will require a number of significant weather effects in the major grain producing areas across the world to unwind world grain stocks.

The picture of 2017 world harvest is largely positive with most areas reporting good crops. More recently reports of dryness in parts of Australia and some part of eastern Europe has steadied prices at current values. Present indications are for little if any improvements in prices for the coming year. Yield of crops in Ireland have generally been good this year although not exceptional, however, wet harvest conditions particularly in the north and west of the country mean that some crops are still not harvested. Elsewhere significant quantities of straw have not been saved or is of poor quality, which in combination with reduced cereal area means that we are looking at a shortage of straw and high prices for the livestock sector.

Preliminary figures from the Teagasc National Farm Survey indicate tillage incomes decreased last year by 10% compared to 2015. This is a smaller decrease than anticipated which is due to an increase in the average area per farmer and an increased beef output (on the mainly tillage farms) masking declines within the sample. Tillage farmers are highly dependent on the Single Farm Payment which can account for approximately 65% to 100% of their income depending on the year.

**Table 1. Average Family Farm Income on Specialised tillage farms**

Year	Av. Family Farm Income	Total direct payments	Of which is the Single Farm Payment
2013	28,797	25,681	23,064
2014	28,995	25,434	23,137
2015	34,303	23,271	22,098
2016	30,816	25,751	23,411

The degree of dependency on the SFP is driven by the outcome of harvest and general commodity prices, both of which substantially affect profitability. Tillage farmers have become increasingly specialised over the past 10 years with larger farms and increased

technology use on these farms. Growers continue to drive for higher yields and increased area in an attempt to maintain or increase income. However access to land has become increasingly difficult over the past number of years due to pressures coming from the dairy sector.

Teagasc interact with the industry at a number of levels from research at Oak Park, Carlow, and elsewhere, through a dedicated specialist tillage team, advisors through the country and also through education with specific tillage and machinery courses in Kildalton, Co. Kilkenny and Pallaskenry, Co Limerick.

A research team in Oak Park have projects which aim to improve yields and the sustainability of the sector. Although Teagasc, or indeed any organisation in Ireland, does not have a breeding program in cereals Teagasc researchers are working closely with breeders in the UK and Europe to identify and select breeding lines which are suitable for Ireland. There are specific programmes dealing with agronomic issues such as disease control and nutrition of cereal and non-cereal crops in collaboration with the soil and environment researchers in Johnstown Castle, Wexford.

More recently Oak Park researchers are looking more intensively at oats and break crops like beans and oilseed rape. Developing a deeper understanding of these crops is necessary to increase their profitability. Teagasc has a potato breeding program which has produced very successful varieties such as Rooster. The breeding program aims to produce varieties which are specific to consumer demands in Ireland but also which have appeal in other countries through its linkage with Irish Potato Marketing.

The Knowledge Transfer (KT) or advisory effort focuses on delivering the most up-to-date information to the industry and farmers to increase yields and maintain income. Delivery of this information is through many channels such as media, newsletters, seminars, conferences, field meetings, discussion groups and one-to-one advice. Increasingly Discussion Groups are forming the backbone of client interactions at the expense of more time consuming one-to-one field visits. Specific topics are communicated through areas such as Crops BETTER (Business, Environment and Technology through Training, Extension and Research) farms or dedicated projects to increase farmer knowledge and practice adoption. The Crops BETTER farm program focuses on precision farming and is demonstrating the value of regular recording of information on a field by field basis right up to the use of GPS technologies. A salad potato project, currently on-going, aims to increase grower knowledge and increase output from the sector and reduce our reliance on imports. Teagasc is also very involved in aiding farmers with the burden of administration and compliance on the farm. Areas such as farm planning, Department of Agriculture and EU Schemes, nitrates and pesticide regulations and grain assurance are among the areas jointly tackled.

There are many challenges in the industry with low morale and low incomes but equally many opportunities to develop the sector. Research and knowledge transfer efforts in Teagasc is working on various initiatives to (i) move crops up the value chain, (ii) enhance efficiency and cost savings and (iii) develop the role of new technology:

- (i) Increasing the production of premium crops such as malting/distilling barley, food grade oats and cold pressed oilseed is a target for the programme, as is investigating higher value markets for existing crops such as increasing the utilisation of wheat in whiskey production. Projected growth of the distilling (whiskey) industry is already translating to increased demand for malting barley which should continue into the future. Teagasc have joint KT projects with Boortmalt and Dairygold to help growers increase adoption of technology within the malting barley industry with the aim of achieving the tight specifications demanded by the industry. A research program in oats aims to develop our understanding of key agronomic traits and underpin the development of human food grade oat markets and other export markets
- (ii) Increased yields on farm is a constant goal of research and KT, the Irish tillage production system is high input - high output, and exploiting our high yield potential is key to profitability. However, Teagasc also strives to deliver systems to lower costs of production whilst maintaining high yields. Research targets efficient use of

agronomic inputs such as the base nutrients, agrochemicals and machinery operations while KT activities focus on transferring these innovations as well as developing new models for farm collaboration to reduce costs. In recent years there has been a significant effort to underpin the development of more sustainable crop varieties with enhanced disease resistance, nutrient use efficiency etc to reduce the reliance on external inputs. These initiatives also support Ireland's commitments under the sustainable use directive (SUD) to develop and implement integrated pest management (IPM) and the nitrates action programme.

- (iii) The tillage industry is generally quite quick to take on new technology for example new seeds, agro-chemical or machinery. Newer technology has a potential to develop farmers understanding of their own farm such as yield monitoring, drone mapping, hand held devices, etc. Research is on-going to investigate the potential for remote sensing technologies to improve the targeting of crop inputs. Novel breeding techniques such as genomic selection and gene editing have the potential to significantly increase the rate of genetic improvement and are being actively researched with a view to producing more sustainable varieties.

Given our high input - high output system significant and guaranteed premium for organic produce would be required to offset the likely reductions in production from moving to an organic system. In the longer term if more disease and pest resistant varieties are developed these production losses may be reduced which would increase the viability of organic systems.

Ireland generally produces high energy low protein cereals due to our high yields and limited nitrogen fertiliser inputs. This makes consistent production of bread wheat and other high protein grains difficult; however, there are markets which require low protein such as distilling. An additional hurdle to the production of bread wheat is our wet weather particularly around harvest time which increases the risk of pre-harvest sprouting which makes grain unsuitable for baking.

Emerging consumer trends in Germany and elsewhere in the world for GM free foods has a potential to influence how some milk is produced in Ireland in the future which may be an opportunity for the indigenous tillage sector which does not grow any GM crops. The ability of the sector to produce sufficient quantities of protein crops demanded by the industry is seen as a challenge but there is adequate protein production to satisfy initial demands, if needed.

Initial analysis from FAPRI Teagasc indicated the tillage industry will be affected by Brexit mostly through reduced direct payments but this is still unclear. However, due to issues like plant breeders rights, plant health and tariffs, opportunities may exist for the industry in areas such as seed production in all categories of cereals, oilseeds and potatoes and to increase production for fresh chipping and salad potatoes.

The energy crop industry has been stagnant for some time now. Commitments given by the government in areas such as heat, transport and electricity will be difficult to achieve without support for the industry. In the absence of support substantial EU fines are looming if the targets are missed by 2020 year (SEI estimated if the target is missed, it will cost Ireland circa €80 million p.a. for every 1% below the target). In order for the sector to develop substantial government intervention in the form of long term incentives to produce heat or electricity is needed for commitment by farmers or industry. The development of this sector should be seen in the context of a bio-economy where by raw materials such as straw, grass, beet, etc. can be used to develop products like bio-plastics, platform biochemical, insulation materials, etc. with energy production a by-product of the process. Many of these processes are possible but an overall Irish bio-economy strategy is needed to realise these possibilities.

Teagasc will continue to drive innovation through research with current and new tillage crops. The success of the model used by Teagasc is its ability to transfer this knowledge to the industry and farmers and integrate these new ideas into our education services.